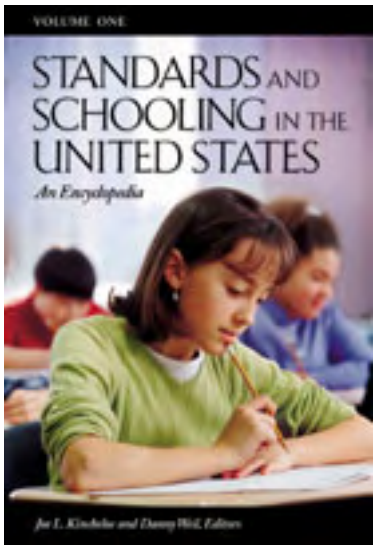
VOLUME ONE
STANDARDS AND SCHOOLING IN THE UNITED STATES
An Encyclopedia
Joe L. Kincheloe and Danny Weil, Editors

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Edited by

Joe L. Kincheloe and Danny Weil

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INTRODUCTION

Hope in the Shadows— Reconstructing the Debate over Educational Standards

Joe L. Kincheloe

The debate over educational standards in the United States over the past few years has offered hope to many concerned with improving the quality of U.S. education. On the other hand, however, the quality of the standards conversation itself has been disappointing to many scholars, educators, and citizens. This encyclopedia addresses the development of the present conversation about quality education and standards, framing it in historical context and grounding it in relation to other attempts at educational reform.

In addition to this historical grounding, the editors and authors of the encyclopedia will present a new vision of educational rigor in a variety of scholarly domains and classroom contexts. Always thinking of the form a high-quality education might take, authors will be familiar with the pragmatic issues surrounding educational reform in elementary, middle, and secondary schools at the beginning of the twenty-first century. In this context, scholars and teachers will offer both macrosystemic critiques and practical suggestions for improvement that will benefit teachers, educational leaders, politicians, parents, students, and concerned citizens. Central to the purposes of the encyclopedia will be an analysis of the relationship between the new social conditions emerging at the beginning of the new century and the notion of a rigorous education. In particular, the emerging new-information order and its demand for more sophisticated knowledge workers regardless of vocational path will be analyzed in relation to educational reform. At the same time, social questions concerning inclusivity and justice in a high-standards educational system will be asked and debated.

The limited nature of the public conversation about knowledge and information issues is paralleled by the shortcomings of the standards debate.

A theme that will permeate the encyclopedia involves the intersection of questions of educational purpose, school reforms, and standards with the changes in information systems and the intensifying need for savvy knowledge workers in the first decades of the twenty-first century. From the development of writing, the movement from scrolls to books, and the invention of the printing press to the recent emergence of computerization and the shift from text to hypertext, changes in the culture of information have modified the social fabric in general and the cognitive process in particular. An educational system that fails to respond to such profound cultural changes will find it difficult to represent itself as challenging and rigorous. Indeed, recent cyber-changes, many argue, are initiating a more radical upheaval than previous changes; whereas the printing press, for example, modified the reproduction of texts, it did not alter their form. The Internet's forced move from the page to the screen reshapes the way reading and writing are organized, structured, and produced. Origins of knowledge and awareness of the knowledge-production process are undermined in the hypertextuality of computerization.

Well-educated individuals in the future must understand these complexities. Not only do teachers and students need to know how to use a variety of the emerging high-tech information technologies, but they must also develop the ability to ask penetrating questions of the knowledge accessed, the dynamics involved with the interpretive process, the relation between power and information, and their own level of expertise in knowledge producing. Our concern is that such abilities be developed in the most sophisticated manner and be possessed by the largest percentage of the population possible.

The ability to ask such questions and provide sophisticated answers to them is central to the academic/practical/cognitive skills of a rigorously educated person in the twenty-first century. Such an individual understands that these academic facilities involve the ability not only to locate information but also to detect previously unidentified problems. At this point, rigorous scholars can both access data and deploy forms of analysis that lead to original answers.

What we are referencing here is the ability for large numbers of people to do what too few people presently can: to move beyond the information given. This aspect of rigorous scholarship in the new information society involves the development of interpretive skills that open new worlds to the analyst. Here texts begin to reveal far more than initial readings might suggest. Reading transcends the process of "information retrieval"—so typical of many standards-based reforms—and evolves into an awareness of the ways different interpretive schemas shape diverse understandings of particular information. In this situation, the highly skilled scholars explore the process of inference making, establishing validity, evaluating significance, and discerning implications.

The potential of human beings to reach higher orders of cognition is profoundly enhanced when legions of people can uncover the forces that shape what is considered knowledge. It is time for a public dialogue on this issue. This is what we are attempting to generate with this encyclopedia.

The mismatch between contemporary society's intellectual needs and the cognitive abilities cultivated by many standards-driven schools cannot continue. The existing standards movement's conception of higher-order cognition simply fails to deal with such abilities—especially their widespread dispersion throughout the U.S. population. The editors and authors of the encyclopedia insist that the intellectual skills needed to cope with the emerging global informational order extend far beyond present educational reformers' call for the acquisition and reproduction of information in a variety of contexts. The abilities needed must move to new levels of understanding the production of knowledge and the assumptions that shape the form knowledge takes. The unstated assumptions behind technical visions of the characteristics of educated people involve a computer-like conception of the human mind where storage and retrieval of data are its central features. In this outdated mode of conceptualizing, education in the information-age vision is limited to calls for all students to have computers at their desks to help them commit certain information to their memory.

Thus, *Standards and Schooling in the United States: An Encyclopedia* insists that education must be far more rigorous than previously imagined. With this notion in mind, it assembles an elite corps of scholars and master teachers to specify what is needed in the effort to develop and implement this vision. Readers will be treated to historical, social, cultural, political, administrative, psychological, philosophical, curricular, and pedagogical insights that are integrated in a manner that provides unprecedented aid to those interested in the quest for truly rigorous educational standards for more than a privileged minority of students.

In this introduction I will delineate a variety of what we consider basic concepts in the effort to reconstruct the conversation about educational reform and standards in the early twenty-first century in the United States. In the process of laying out these concepts, I will refer to the various alphabetized essays and the ways that they connect with and extend the ideas presented here. It is our hope that readers will explore the introduction in relation to the alphabetized essays and cross-reference their conceptual relationships. The essays exist both separately and in relation to one another and can most effectively be understood with a consciousness of the conceptual links pointed out in this introduction. In this manner, the encyclopedia is presented as a larger vision and specific delineation of a rigorous approach to educational improvement—an approach markedly different from what now passes as standards-based reform.

Into a More Complex Realm: Invigorating Standards

One simple concept changes the way standards are conceived: a higher order of thinking is more concerned with the organization of experiences than the discovery of data generated by others. This doesn't mean that teachers and students should ignore information generated by others—of course, they shouldn't. It does mean that schools should place more emphasis on the ability to make sense of observations, information encountered, and experiences than the simple acquisition of predigested, secondary information (Barrett, 1997). Technical standards that focus simply on performance on standardized tests remove the all-important meaning-making process from the everyday life of the classroom. Meaning in this context has already been determined by the curriculum makers and is simply imposed on students as a "done deal"—there is no room for negotiation about the interpretation of information. In this manner, the kinetic energy is drained from school knowledge and rendered dull and inert; it becomes "dead matter" to be inserted into the passive mind of the learner.

In this "cleansing" of knowledge, the complexities and ambiguities that give it meaning and use-value are washed away. Educational reforms and standards-based reconfigurations often focus on the most efficient way to insert the sterilized data and measure students' retention of it. In an exciting world struggling with problems of globalization and information production, such data is virtually irrelevant, if learners are not aware of who produced it, the circumstances under which it was produced, and for whose interests it was produced. Students also need an appreciation of alternative forms of knowledge about the same subjects and the ways such information might relate to and be used in the world. (See Stan Lester's chapter on "Working with Knowledge" for an extension of these ideas.) Thus, concerned citizens, politicians, and educational leaders seeking to implement more rigorous standards that comprehend the complexity of knowledge production about the social and physical domains support teaching for understanding as opposed to mere subject-matter acquisition.

Students in a learning environment grounded on understanding become researchers not only of the world around them but also of their own possibilities as knowers. What might it mean to understand this subject more deeply? Or, how can you go beyond the knowledge given? Or, how might you use this information to uncover problems in another area? These are all questions a rigorous teacher might ask in a classroom operating under standards that recognized complexity. In such a context, students would be taught the skills necessary to the effective production and organization of knowledge. Reading in this context would be seen not simply as decoding words but as making sense of a wide variety of print, visual media, and lived texts. Along with the skill of

decoding, such an expanded and rigorous notion of reading would see it as a creative act of meaning making. This would require teachers and students to organize information into meaningful constellations by discerning relationships between ostensibly unrelated data.

A central feature of an educational system with rigorous standards would involve both the study of how great thinkers have discerned such relationships and teacher-and-student practice in identifying such connections in the process of their own knowledge production. Seeing such relationships is central to higher forms of cognitive activity, yet such abilities are generally ignored in most school activities. The standards we promote would insist that the meaning and value of a learning activity be appreciated by students in relation to larger contexts. The importance of a mathematical function would be understood in relation to its application, for instance, in the world of commerce or construction. The meaning of a linguistic concept would be conceived in light of the larger effort to communicate. Meaning emerges in these types of interrelationships, not in the conceptual isolation of the "mastery" of fragmented processes and "facts" (Novick, 1996; Chandler, 1997; Lee, 1997).

In their essay on "Evaluation," Doug Simpson and Michael Jackson ask about the types of information and student performance we need to evaluate whether understanding as opposed to low-level rote learning is taking place. Patricia Hinchey picks up on this point under "Purposes of Education," arguing that knowing the names of rivers, for example, prepares students to take a test and little else. Understanding the impact of a particular river in depth, however, prepares students to inquire intelligently into an unknown geographical domain. Extant technical standards emphasize the first type of learning; standards of complexity emphasize the latter. Hinchey concludes that a rigorous, useful education that makes meaning demands such in-depth analysis. In his contribution on "Science," David Pushkin moves this concept into the realm of science, maintaining that once we adopt content standards with prescribed lists of scientific facts "to cover," we begin to sacrifice broad understandings of complex scientific principles.

When we insist that our schools' curricula and our educational-reform efforts focus on cultivating our students' ability to make sense of the world and understand academic information in a way that enables them to use it, the manner in which we conceptualize standards changes. Marjorie Mayers in her chapter on "Interpretation" adeptly drives this point home as she explores the importance of hermeneutics to school reform. Defining hermeneutics as the art of interpretation and deriving meaning from various types of texts, Mayers enjoins us to employ hermeneutics in standards of complexity. In this manner, a hermeneutics-driven education would always be concerned with making meaning, with viewing the world anew so that we can derive new understand-

ings from the new connections we make among familiar things. In this context, the *significance* of information that students learn is important, not just the *acquisition* of such data.

In the present educational context characterized by top-down technical standards, acquisition takes precedence over significance. The editors and authors of this encyclopedia agree that this is an irrational situation. Unfortunately, such an irrational situation is all too common in the early twenty-first century. As Martha Foote and Ivor Goodson document in their piece on "Regulating Teachers," even successful schools are vulnerable to the acquisition-of-unconnected-facts mind-set of top-down technical standards. In the school they researched, the successful mathematics program that had emphasized the rigorous understanding of mathematical concepts had succumbed to the memorization of math factoids demanded by the state's new high-stakes math test. The new standards had basically destroyed the rigor and integrity of the math program, Foote and Goodson sadly report.

Upping the Standards Ante: Teaching the Skills of Highly Accomplished People

Another simple concept that changes the way standards are conceived involves moving educational purpose away from producing specialists with detailed knowledge in only one area to a vision of "synthetic generalists" who understand the interrelationships among various disciplines, moral and ethical perspectives, knowledge production, and the world. This conceptual change is important in all educational domains but especially in elementary, middle, and secondary schools. Existing low-cognitive-level standards tend to focus on the acquisition of predefined, unnegotiated separate bodies of information with little interest in students or teachers analyzing the multiple relationships, or the unspoken assumptions linking this data.

Committing unconnected bodies of information to memory does not make students more productive, resourceful, intelligent, scholarly, or beneficial to society. Admittedly, under the present system, if they remember the data it can help them gain admission to college. Such pseudo-learning constitutes an uncritical absorption of other people's agendas without an understanding that an agenda is present in the process. Instead of producing rigorous scholars, such a process tends to make stupid those who take it seriously. Such a "dumbing down" produces an abject unawareness that meaning resides not simply in a text (or a textbook and curriculum guide) but in an interplay, a negotiation between reader and text. Cultivating aptitude in this negotiated struggle for meaning is a central objective of the rigorous standards advocated here (Chandler, 1997).

But meaning making and its complexities are not viewed as very important issues by the advocates of existing technical-content standards. As Doug

Simpson and Michael Jackson contend in their essay on "Evaluation," meaning and creative thinking are irrelevant in school cultures where standardized, top-down aims and means are expected to be mechanically followed. There is something very frightening that emerges in these standardized educational contexts. A monster is unleashed that devours common sense as it dumbs down everyone involved in the rationalized process. Individuals drawn to the pursuit of higher-order thinking, innovation, and creativity are put off by this monster and all that it represents. Yet, the easy answers that such technical standards provide with their focus on easy-to-read, quantifiable test scores are terribly seductive to politicians and educational leaders. As Marjorie Mayers puts it in her chapter, technical standards "allay our fears about what we're doing . . . by switching complexity for complacency in education."

Such an irrational process seems so apparent to advocates of standards of complexity that we often find it difficult to understand the rationale of technical standards. In this context, Sharon Howell, Vicki Carter, and Fred Schied argue in their chapter on "Vocational and Work Education" that technical standards may be a diversion from the pursuit of open dialogues, intellectual rigor, and social justice. Such a charge makes sense as we study the bizarre irrationality of educational reforms seemingly unconcerned with developing the rational capacities of students. Queries about the nature of knowledge, what is worth knowing, and the skills possessed by educated people seem so out of place in the universe created by technical standards.

In this context, Simpson and Jackson remind us of John Dewey's still all too relevant questions about the value of learning experiences: Does the experience:

1. Create capacities for additional, broader, and deeper learning?
2. Promote miseducative activities?
3. Help develop and refine the quality of one's thinking?
4. Dull one's ability to make meaning?
5. Result in the acquisition of sterile information?
6. Facilitate the extraction of meaning from future experiences?
7. Promote the desire to apply what is learned?
8. Develop the appreciation of things worthwhile?

When such evaluative questions are asked in relation to technical standards–driven education, the answers provided are not encouraging. Indeed, the answers provided to these questions motivated the development of this encyclopedia project.

As my coeditor, Danny Weil, pondered these questions, he concluded that many of the teachers with whom he had spoken were correct when they said that technical standards promote a form of *anorexic-bulimic* learning: "Students starve themselves until test time only to stuff themselves with skills, facts, and details to be regurgitated

without the benefit of intellectual digestion." In his chapter on "Goals of Standards," Weil reports on this dumbing-down dynamic, arguing that developers of technical standards have not sufficiently considered what it means to be an educated person. Without consideration of the most basic social and educational effects of technical standards, various school systems around the nation have diverted resources to address their test-driven demands. As Sharon Spall in her chapter on "Texas State Standards" and Weil in his chapter on "Florida State Standards" demonstrate, teaching to the technical-evaluation systems takes valuable instructional time away from authentic scholarly pursuits.

Even more disturbing is that these dumbing-down procedures and their concurrent irrationalities affect those who can least afford them: economically and racially marginalized students. In his essay on "Urban Education," Rob Linné reports that underfunded, heavily African American and Latino urban schools now spend much of their funding on "test prep materials, test prep consultants, test prep rallies, and reward days or trips recognizing performance on the tests." The instructional result of all this expenditure of limited funds, Linné concludes, takes the irrational form of "vacuous, decontextualized skill and drill" exercises. Extending Linné's point, Alex Caputo-Pearl in his compelling chapter on "Justice and Education" points out that in lieu of addressing the appalling conditions of the Los Angeles public schools, California school leaders divert much-needed resources to technical standards–related issues. The standardization, assembly-line features of the technical-standards reform are much cheaper to implement than a rigorous, practical, and just form of pedagogy.

Susan Field Waite, in "Consequences of Standards," extends this important theme, documenting a variety of adverse effects of technical standards. At one point she asks: "Might we be burning down schools today just to obtain a common set of what are often minimal-level skills for children?" Indeed, we undermine the possibility of rigorous learning in the pursuit of harmful reductionistic goals—torching hopes and torturing dreams.

Highly accomplished people in fields as diverse as math, science, literature, architecture, art, music, and social analysis possess the very scholarly and meaning-making abilities that are *not* being taught in technical standards–driven education. This is exactly the type of "irrationalism" that the editors and authors of this encyclopedia work to illustrate. It does not require a quantum inferential leap to argue that those individuals who are self-conscious about the process of meaning acquisition and meaning making have a much better chance of exercising "good judgment" than those who simply commit unexamined information to memory. Good judgment in this rigorous sense means that individuals can provide persuasive reasons for the judgments they make. The reasons given in this context are never final or empirically verifiable—

they do not claim status as the "correct" justifications for particular interpretations of the world (Madison, 1988). A rigorous education with high standards that recognizes complexity seeks to produce students who are sufficiently reflective to give compelling reasons drawn from a variety of contexts for the conclusions they reach. Scholarly rigor, Danny Weil maintains in his chapter on "Goals of Standards," extends such reflectivity in the ability of students to assess themselves, to develop the capacity for lifelong learning and continuing cognitive development, and to cultivate high standards for new expressions of humanness.

The rigorously educated students imagined here have in all subject disciplines worked with teachers who expect them to provide rationales, analyze their ways of reasoning, check the values that support their rationales, and evaluate the norms they use to govern their scholarship and actions. Thus, educational standards of complexity expect teachers and students to grapple with the principles they turn to for support of their ways of viewing the world. In such schools teachers, administrators, community members, and students understand that disagreement about meaning is inevitable. Instead of viewing disagreement as something to be studiously avoided, high-standards schools should embrace differences and teach constructive ways of dealing with this important feature of social and scholarly life. Conflicts of meaning making force everyone involved with education to examine their criteria for argumentation (Haggerson, 2000; Madison, 1988).

For example, instead of teaching about the explorations of Christopher Columbus as if there is an absolute, correct interpretation of the meaning of Columbus's voyages, a rigorous teacher might view Columbus as a figure whose actions have elicited great controversy among contemporary observers. Students could study a variety of scholarly interpretations of Columbus:

1. The great discoverer of the New World
2. The great Italian adventurer
3. The enslaver of the Carib and Arawak Indians
4. The symbol of Western colonialism and insensitivity to indigenous peoples

Such a pedagogy is much more respectful of the sanctity of the past, the intelligence of teachers, and the dignity of students as self-directed agents than a curriculum that simply delivers predigested Truths for passive, unengaged students. As Marjorie Mayers puts it in "Interpretation," a complex pedagogy understands the hidden structures and metanarratives—for example, a colonialist ethnocentrism—that shape our understanding of the world around us. A central aspect of a good interpretation involves the ability to delineate these dynamics and relate them to interdependent concepts, beliefs, and assumptions. Turning her hermeneutic gaze on the standards

themselves, Mayers induces her readers to develop good interpretations of the relationships among standards, educational aims, and values. In such exposés, both the quality of the public conversation about standards and the educational quality itself can be improved.

Thus, rigorous schools that understand the complexity of analysis, meaning making, interpretation, and knowledge production graduate students who possess skills similar to the ones possessed by highly accomplished lawyers, doctors, mechanics, artists, social analysts, researchers, architects, physicists, social workers, diplomats, ad infinitum. Like such experts, they don't merely memorize information produced in particular fields. They learn to:

1. View various aspects of the world as a text to be explored
2. Deal with questions that data raise about themselves and other related domains
3. Discern what about the information is questionable or problematic
4. Understand a variety of contexts that provide meaning to the information
5. Construct what other observers have not previously seen in the data
6. Explore the various ways individuals in other historical periods and cultural places have viewed the information
7. Stimulate further inquiry and analysis of the knowledge

In their teacher education in the liberal arts and sciences and in professional education, teachers should have ample opportunity to develop these abilities in themselves and learn how to cultivate them in others. A cardinal aspect of a teacher-education methods course should involve generating awareness of these highly sophisticated processes. No teacher-education candidate should be certified until he or she demonstrates his or her ability to dissect and analyze the arguments of others. Of course, candidates should also be able to justify the propositions they put forth.

Unfortunately, in many arts, sciences, and teacher-education colleges, students can graduate without confronting these types of skills. At the same time that teacher-education candidates are learning such analytical abilities, they should also explore the boundaries of Western forms of rationality and study knowledge traditions that move in different directions than modernist Western rationalism. Learning to see a variety of cultural and philosophical systems of reasoning would rigorously prepare such future teachers to analyze—and teach students to analyze—the various ways knowledge is produced and validated. Such experience would induce them to ask: How does certain canonical knowledge conflict with their perspectives on a topic? What were the assumptions about research harbored by those who produced such knowledge? How does such information force one to recognize the limitations in his or her own viewpoints? No class in the

arts, sciences, or professional teacher education should allow students to pass through without providing evidence that they have engaged in these and many other questions (Thomas, 1998; Harrington and Quinn-Leering, 1995).

Standards That Are Mindful of Educational Purposes: Connecting Learning to Visions of Quality

One of the greatest failures of the present public conversation about standards involves the inability to articulate a compelling vision of the purposes of education. Without such a conception, such standards advocates are unable to imagine what kind of students we want to produce, what kind of abilities they would possess, or what kind of society they would hope to build. Operating in such a vacuum, teachers, students, and educational leaders often find themselves discouraged, unable to find an incentive to push the scholarly envelope, incapable of providing meaningful answers to questions such as: Why do we have to do this? Or, when would I ever need to know this? Any standards of worth not only must reflect the complexity of studying the world around us but must also be developed in concordance with an exciting vision of education that respects the untapped capacities of human beings and the role that education can play in producing a just, inclusive, democratic, and imaginative future.

This question of educational purpose is a central concern of standards of complexity. Making sure that everyone involved with education understands the discourse of educational purpose and is familiar with competing educational visions is a passionate commitment of advocates of standards of complexity. As John Willinsky points out in his chapter on "Knowledge," the reductionistic focus of technical standards on a single test-score number undermines any disposition to raise questions of educational means and ends. Weil picks up on Willinsky's assertion and in his "Goals of Standards" chapter maintains that the standards conversation is so truncated that many citizens believe there is no disagreement about what standards U.S. schools should adopt. Weil continues: "There is no discussion as to how the current standards proposals have been designed, who designed them, or for what purpose."

The public is simply unaware of the complexities of the educational purposes embedded in the standards debate. In her chapter on "Purposes of Education," Patricia Hinchey addresses this reality, contending that the public needs to understand the different types of standards being proposed. Support of one type of standards over another, she writes:

> translates to support for one kind of school or another, and one political, social, and economic agenda over another. Their support of one version of standards over another will also affect the type of citizen who lives next door, who votes in elections, who works for corporations. There is good reason to

> think carefully and choose well. The stakes are far too high to assume that all standards movements are created equal.

Indeed, these values and visions are well hidden in standards that are "objectively and neutrally" adopted by state and local school systems. Standards of complexity demand that these hidden dimensions of standards be brought into the sunlight. As Thomas Thomas and William Schubert delineate in "Certification of Teachers," technical-content standards undemocratically answer the most basic questions of educational purpose without public debate. They mandate answers to complex curricular questions such as: What is worth knowing, experiencing, needing, doing, being, becoming, sharing, and contributing as individuals and as societies?

In such an insidious and covert context, power wielders shape our "democratic" schools with little democratic participation. In this political domain, those with the most power dictate purpose. Hinchey argues that in the contemporary United States, those with the most power are business and corporate leaders and their political allies who in the language of standards specify the types of workers they want. Such specifications, Howell, Carter, and Schied remind readers, operate to serve the political economic interests of business managers more than the interests of their employees. There are many disturbing aspects of the veiled political process by which technical standards are developed and employed, but one of the most disturbing, according to John Willinsky, is that efforts to raise the standards of public reason and deliberation so as to enhance the quality of democratic life are abandoned. Again, from the vantage point of standards of complexity, this is seen as a disturbing state of affairs.

The philosophical grounding pursued by standards of complexity is central to the consideration of questions of educational purpose. Too often in contemporary U.S. society the use of philosophy is dismissed as irrelevant and impractical. Standards of complexity argue that philosophical analysis is a highly pragmatic and indispensable activity. As Simpson and Jackson argue in this volume, philosophy brings questions of priorities to a public conversation. And it is not an exaggeration to argue that one of the most important features missing from the national conversation on standards is questioning of educational priorities. Without a sense of what should take priority in the life of schools, we have little sense of direction—of purpose. In this context of priority, educational reform should always be concerned with the quality of the educational experience and the promotion of a carefully defined notion of student growth. Technical standards have not been concerned with such priorities.

Without such priorities and the purposes derived from them, Simpson and Jackson conclude, we end up evaluating and measuring trivial aspects of education. Such assessments distort the entire pedagogical enterprise, focusing its attention on "irrelevant or

unimportant information [that] is . . . counterproductive and often unethical." To pursue worthwhile purposes and policies, Marjorie Mayers reminds us in "Interpretation," we have to first identify the values that we deem most important. How, she asks, do the educational standards we develop reflect these driving values? If they do not, then why is this so? As advocates of standards of complexity deal with these questions of purpose, they demand forms of education that, in the words of Weil in "Goals of Standards," promote "good judgment, innovation, cooperative living, collaborative problem solving, and developing a more productive and happier life."

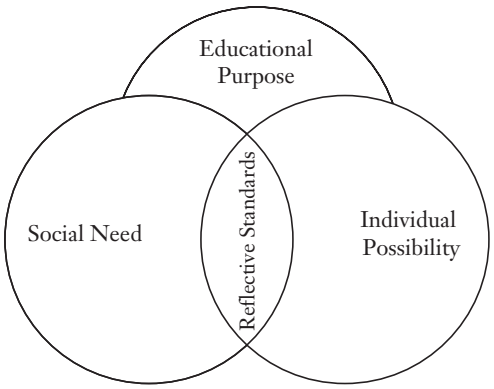
Indeed, Weil tells us that there is more to life than "making better machines or consumer products." But in the technical standards that dominate the early-twenty-first-century educational landscape, one would rarely know that educational leaders believed it. In Howell, Carter, and Schied's analysis of work-education standards, they found, for example, that corporate goals of profit and productivity are consistently promoted at the expense of worker freedom and dignity. What are the purposes of such educational standards? What kind of people devised them, and what kind of people do these standards developers want to graduate from our schools? Weil puts it well in "Goals of Standards" as he asserts that the present discourse about standards is the wrong debate:

> The real debate would ask us to incorporate into consideration such questions as What is good teaching? How does one learn? What is intelligence, whose interests does it serve, and how is it achieved? It would be a debate that invited community, parents, students, and teachers to engage in discourse about what it means to be human, how to act in and with the world, and how to make sense out of one's personal life in light of historical and cultural change.

Standards connected to purpose help us discern those qualities that characterize an educated person both in the present and well into the first decades of the twenty-first century. Such forms of educational thinking create overlapping analytical circles that connect educational purpose, social need, and individual possibility. Taking these interconnecting circles into account we begin to see questions about civics, ethical activity, social justice, compassion, equality, and democracy seep into the public discourse about high-quality education (Theobold and Mills, 1995).

An integral aspect of rigorous education involves learning about different purposes of education held by peoples in different places and different times. When we grapple with positions different from our own, we emerge with a more sophisticated understanding of an issue.

Instead of hiding differing conceptions of educational purpose from students, teachers and administrators should encourage forums where students can listen to debates over such issues. In classroom practice, teachers can illustrate to students the diverse

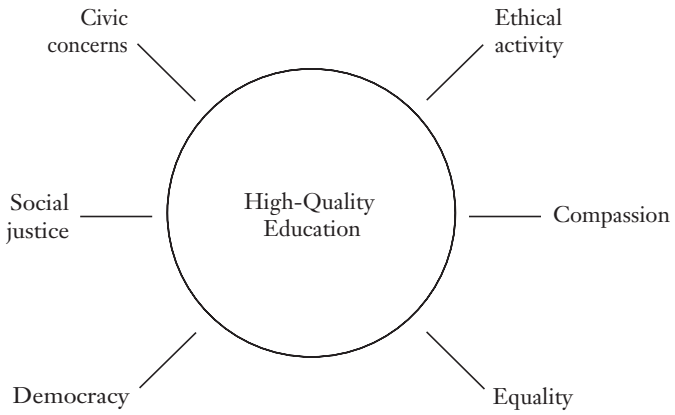


Analytical Circles of Reflective Standards

ways different groups might choose for particular academic topics to be taught or not taught. In such a context, the lesson itself would be grounded in the ways different values and worldviews shape the form school takes. What a provocative lesson for students learning to make meaning about themselves vis-à-vis the world—to make sense of their relation to school, to ascertain their own educational goals. Central to the development of standards of complexity is the necessity for educators at all levels to help students understand that the curriculum taught is just one of countless ways of approaching a particular subject. Other curricula may be grounded in a different set of values and assumptions and may require students to engage in a very different set of activities, develop a different set of skills, confront a very different body of knowledge about the subject in question.

We would go so far as to argue that teaching that does not delineate alternate ways of approaching an issue, is not ironical about its own assumptions, and is not reflective and self-critical will always tend to produce lower-level cognitive activity and provide students with a limited view of the phenomena under study. All curricula come from somewhere. The "somewhere" they come from is marked by particular understandings, philosophical assumptions, understandings of knowledge, and cultural inscriptions—they are subjective, as some interests are included and others excluded. A self-conscious curriculum, therefore, is aware of the power relations that shape it. In the contemporary debate, many proponents of standards fail to take this form of reflective understanding of curriculum into account and promote the memorization of dominant Western cultural knowledge and ways of knowing. Traditions of understanding that fall outside of these narrow confines are excluded without deliberation. Such cultural and analytic narrowness is an educational disservice.

Confronted with the contentious debate over educational standards and reform at the beginning of the new century, U.S. society might consider different strategies for dealing with divisiveness. In light of the self-reflective strategies we have been discussing, would it not be helpful to teach about the standards debate in the public schools? One of the most significant stories of our age involves the conflicting cultural values, the different views of the future, and the different conceptions of education held by different groups within this society. The standards debate, maybe more



The New Contextualized Discourse about Standards

than any other single issue, seems to crystallize these differences and bring them into sharp contrast. Shouldn't students learning about the world understand the values and belief structures that separate Americans at the beginning of the new century?

In such a context, part of a biology curriculum would analyze the struggle over what should be taught in a biology class. The historical dynamics of the fight between religious fundamentalists and modernist scientific advocates of Darwinian evolution would be studied in relation to the history of biological research and the assumptions of the field. The debate over the biology curriculum could be used to illustrate the ways that social and cultural values shape individuals' relationships with institutions such as science. Not only would students emerge with a deeper knowledge of biology, but their sociological understandings would also be profoundly enhanced. Such an educational innovation would cost nothing and grant a sense of inclusivity to parties that have traditionally felt excluded from the pedagogical conversation.

Such a curriculum would induce everyone involved to consider the purposes of education: In the biological context, is the goal to indoctrinate students so they unquestioningly accept the truth of Darwinian evolution or fundamentalist Christian creationism? Or is the purpose to engage them in a serious, rigorous, and historically and socially contextualized analysis of the traditional and contemporary debate and give them the chance to offer their own perspectives? A key lesson in the rigorous biology class involves the appreciation that no curriculum is neutral. What we study in school results from a set of subjective choices reflecting the perspectives of those with the power to decide. Unfortunately, like so many other important understandings, this too is left out of the public conversation about educational standards. The vision of quality operating here includes it (Apple, 1993).

Standards in a Democratic Society: Whose Educational Purpose? What Definition of Quality?

As we analyze the current conversation about educational standards, another important but missing dimension involves the question of why teach biology or history or mathematics to elementary, middle, or secondary students in the first place. The cart comes before the horse in the debate, as questions of "what to teach" take precedence over "why teach." For example, why should U.S. schools teach history? Does the fact that we live in a democratic society play any role in how we answer this question? Is there a difference between teaching history in a democratic as opposed to a totalitarian society? How does citizenship education affect the teaching of history? The question that seems to obviously follow the preceding queries involves the meaning and duties of citizenship in a democratic society.

When attempting to define the role of a good citizen, we quickly discover that there is substantive disagreement in contemporary U.S. society over this issue. Again, might a well-informed, historically educated American want to understand the traditional debates over the meaning of citizenship instead of being indoctrinated to buy into one concept over another? Isn't the student's right to make such a choice reflective of the democratic process itself? How we answer the question of "why teach history?" will help shape the raging debate over "what history do we teach?" As long as questions of purpose are not raised and publicly discussed, the notion of a citizen-directed *public* educational system rings hollow. Because curriculum is not a neutral entity, because it is always ideologically inscribed, educational purpose is *always* a political question. As a democratic society, we will never finally decide why, what, and how to teach—the debate itself is a manifestation of the democratic process. High educational standards, of course, demand a high-quality debate (Zabierek, 1998; Apple, 1993).

In a democratic society, one way of dealing with standards would be to avoid any type of top-down mandate of particular content and teaching methodologies. Unfortunately, such authoritarian standards are exactly what many national spokespeople are advocating. Further, some states have already implemented such plans. In addition to the antidemocratic, totalitarian nature of such standards, historical analyses of educational change seem to indicate that these types of injunctions simply don't work (Nelson, 1998). A strategy used by many advocates of top-down technical standards to close off democratic discussion of these issues involves promoting the notion that "we all know the purposes of schooling, and there is no need for discussion." Indeed, those scholars who study educational purpose and the sociopolitical, philosophical, and economic context that helps shape it have been increasingly excluded from academic positions and the public conversation about standards. If such analysts were included in the standards debate, the public would quickly learn that

there has never been agreement on the purpose of education in the United States, Western societies, or anywhere else. In classical Greece, Aristotle argued that education certainly involved the quest for "the good life," but there would always be disagreement about what such a concept meant. U.S. history has consistently witnessed debates among those who advocate an education that would:

1. Identify the talented so they could play a special social and political role in the nation
2. Graduate a group of loyal and patriotic citizens who would do whatever necessary to defend the country
3. Create a meritocracy rather than an aristocracy
4. Produce a corps of vigilant, informed citizens who could protect the nation against anti-democratic threats
5. Prepare individuals for their vocational roles
6. Promote egalitarianism by providing for socioeconomic mobility
7. Develop individual capacities so that students could reach their highest potential
8. Produce disciplined individuals who could build an efficient social order
9. Engender the principles of egalitarianism that could build a more just social order

To mention only a few.

In many of the top-down technical pronouncements about standards, the historic civic and social purposes of education have been erased in favor of a one-dimensional economic mission. Within this authoritarian discourse, schools have been accused of failing to the point that they *caused* the economic problems of the 1970s, 1980s, and early 1990s. As the economy improved at the end of the century, interestingly, the schools were not given credit for fiscal growth. Nonetheless, the single-minded emphasis on the economic and vocational purpose of contemporary schools has shut down the centuries-old discussion of the role of education in a democratic society. This closing of the democratic conversation by advocates of technical standards differs substantially with the spirit of the standards promoted here (Bracy, 1997).

If standards do not promote this democratic conversation about education, if they are not promoting critical forms of thinking as Willinsky argues here, then such reforms and the methods used to evaluate their success are not promoting the interests of democracy. At the same time, Kevin Vinson and E. Wayne Ross maintain in their chapter on "Social Studies," the prevailing notion of technical standards with its accompanying standardization impulse subverts democratic education by producing conformity and top-down control of education. Tracing this same conceptual theme running throughout our delineation of standards of complexity, William Schubert and Thomas Thomas in "History" assert that technical standards become the exclusive voice in curriculum construction and teacher education. As they succinctly put it:

> Something adverse (even perverse) happens, however, as statements of standards move from the drawing boards to the school boards and into the lives of teachers and students. They become *the law*, policies to abide by, mandates that must be implemented, and tests that confer or deny status. It is not unusual for schools, especially those regularly receiving low test scores (schools that often are located in economically impoverished environments), to feel pressured to direct nearly all of their educational resources and efforts toward raising test scores.

Ivor Goodson and Martha Foote extend this theme in "Nontraditional Schools," contending that technical standards actually change the way U.S. schools are governed. Control of schooling is in the process of passing from internal to external forces such as corporations and businesses. While such interests have always exerted a tremendous impact on U.S. schools, technical standards are allowing the corporate influence to become more overt and less open to challenge by democratic parties. Given such dramatic changes in the practice of democracy in education, advocates of standards of complexity seek to open a democratic dialogue about the desirability of such modifications. In the first years of the twenty-first century, these political changes seem to be zipping along without eliciting challenges or even much interest on the part of the U.S. public.

The ideological and political divide that characterizes the different perspectives of technical standards and standards of complexity has existed for decades and extends back into the educational politics of the nineteenth century. Danny Weil in his chapter on "Functionalism" writes about the debates between the educational functionalists and educational progressives of 100 years ago. The functionalists, similar to contemporary advocates of technical standards, called for curricular standardization and educational institutions organized to meet the functional needs of business and economic interests. The progressives, in the manner of advocates of standards of complexity, promoted schools grounded on the principles of democracy that worked to promote thoughtful citizens capable of perpetuating democratic self-rule. The arguments between these two groups were as heated in 1902 as they are today.

Weil's concern with standards and democracy comes up again in his "Goals of Standards" chapter. The debate over standards must be understood as a political struggle, a debate over the meaning of democracy in general and democracy in education in particular. Quoting democratic educator Paulo Freire in this context, Weil wants to know if Americans are ready to choose between "education as an act of freedom as opposed to education as the practice of domination." Yusef Prögler in his piece on "Social Studies" extends Weil's and Freire's ideological theme, arguing that the curriculum of technical standards promotes a neofunctionalist point of view. Such a counterdemocratic perspective

becomes tyrannical as it demonizes other points of view and the men and women who express them. Thus, it becomes a practice of domination. Understanding the concerns of Vinson and Ross, Schubert and Thomas, Goodson and Foote, Weil, and Prögler, advocates of standards of complexity maintain that any understanding of educational reform and democratic precepts in the contemporary United States must be grounded on an understanding of power.

Ray Horn in his chapter "A Postformal Conversation about Standardization and Accountability in Texas," in the section on "Texas State Standards," maintains that the standards movement can be understood only in the context of the conservative restoration beginning in the 1980s. Elsewhere (see Horn and Kincheloe, 2001) I have written of this conservative restoration, labeling it the right-wing reeducation movement of the last twenty-five years. Sensing that the civil rights, women's, gay, and anti–Vietnam War movements of the 1960s and 1970s had weakened traditional forms of power in U.S. society, right-wing political, social, religious, and educational leaders worked hard to "take back" or "recover" traditional power relations in U.S. society. In education, progressive efforts to racially integrate and address the needs of African American, Latino, Native American, and economically poor students of all ethnicities and backgrounds were described by right-wing commentators as an effort to destroy standards in U.S. schools. Rhetorical analysis of the speeches of many political and educational leaders from the mid-1970s onward reveals patterns of calls for a return to the "quality education" of "the past"—the past used to signify a time before all of these egalitarian movements "damaged" our standards.

The reeducation movement referenced here applies not merely to formal education and schooling but also to the ideological common sense of the American people (Apple, 1996; Gresson, 1995). The success it has achieved has revolved around its ability to depict U.S. institutions and the American (read: patriarchal, European, white) culture under threat. In an adept manner, right-wing advocates have been able to connect these concerns to the visceral, affective, everyday concerns of many Americans. In many educational research projects in which I have been engaged over the last two decades, I've heard numerous white parents of public school students rail about "all the effort the teachers are giving to help the black students. They take all the school's time and money."

Upon examination of the schools referred to by these parents, I found time and again that an overwhelming majority of time and resources were relegated to the most economically privileged white students. Such parents had internalized the right-wing reeducation program's concern with the threats to whiteness—signified as "us." What such individuals perceived had little relation to the lived world. Indeed, from the early 1980s to the

first decade of the twenty-first century, the gap between white and nonwhite wealth widened, and opportunities for nonwhite professional mobility closed. The picture painted by the right-wing reeducators provided a very different understanding of the world (Kincheloe, 1999).

In the new political universe, great anger was directed at the "liberals" in the educational establishment who were wasting time and money trying to teach those groups that many reeducators designated as unteachable (Herrnstein and Murray, 1994; Kincheloe, Steinberg, and Gresson, 1996). If African Americans, Latinos, and the poor simply cannot learn, right-wing leaders argued, then there is no reason to study issues such as social context, youth culture, and multiculturalism. In the eyes of the reeducators, these analyses waste time and effort. In classic reductionistic logic of technical standards, schools should simply teach the great facts of Western culture, emphasize the achievements of the scientific method, and devise multiple-choice tests to *confirm* the "superiority" of the culturally and economically privileged. Decontextualized technical school standards that are easy to statistically manipulate for good public relations perfectly fit the needs of the reeducators.

In the context of reeducation, observers can more clearly understand the political dimensions of technical standards. In a classical retreat from its own principles of local control, conservative political and educational leaders have issued top-down edicts concerning the curricular content of what teachers teach. This governmental control of the curriculum is problematic in a democratic society, as Carolyn Abel, Charles Abel, V. C. Alexander, Sandra Luna McCune, and Patricia Nason argue in their chapter on "Texas State Standards":

> The notion that government should determine both what students learn and what universities teach seems dramatically opposed to American ideals of liberty, innovation, individualism, self-determination, and academic freedom. It also opposes the ideal of child-centered classrooms where teachers build the curriculum around the students' talents, abilities, skills, and interests. State standards are by their nature prescriptive, and they certainly give the state a curriculum control that many argue properly rests with individual schools. It is a question not of opposing high standards, but of locating the responsibility for establishing and attaining those standards in the proper place. Many argue that the responsibility properly rests with school faculties and professional organizations, not the state.

The contradictions of this tyrannical neofunctionalism of the technical-standards reforms are sobering for supporters of democracy. At the same time that they are using the power of government to mandate a top-down, neofunctionalist, dumbed-down, right-wing curriculum, they vilify what Weil in "Functionalism" calls "failing government schools." Notice here the use of government in lieu of the more

common use of "public" in this context. What right-wing leaders are attempting involves the equation of *public* education with *government* education—*government* in this case is deployed to signify the enemy, the entity that oppresses "us" and promotes the agendas of those who would "coddle the incompetent minority groups with preferential admissions to schools and affirmative action in the workplace."

In light of their advocacy of vouchers that would take money away from public or government education, right-wing advocates of technical standards often question the viability of the very concept of publicly supported education. As advocates of technical standards demand strict educational accountability while at the same time cutting school funding, they set up the public schools for failure. Danny Weil in "Florida State Standards" interprets the motives of these reformers, reading their deployment of standards as an "insidious tool" in the struggle to privatize schooling in the United States. In the name of improving public education, conservative-inspired technical standards, Weil writes, stigmatize "schools and those who teach in them while simultaneously withholding funds, allowing them to hemorrhage to death." The authors of this encyclopedia appreciate the power-based nature of the debate over educational standards. Indeed, it can be argued without hyperbole that U.S. democracy and democratic education hang in the balance of this issue.

Understanding the inherently political nature of these issues, democratic standards of complexity promote a self-reflectivity concerning the traditional conflicts over school purpose. Again, this is a central aspect of the standards story. Instead of attempting to foreclose educational debate, our purpose is to promote it. In the context of promoting and studying the conversation about standards, the scholarly and cognitive abilities promoted here come into sharper focus, and the need for them is magnified. Central to cultivating a sophisticated democratic conversation about standards is the analytical ability to:

1. Understand the contextual forces that tacitly shape institutions such as education
2. Uncover the actual norms that govern agencies
3. Develop alternatives to the existing norms
4. Name and assess the criteria we might use to judge the work of institutions
5. Encourage ways of thinking that avoid universal pronouncements about organizations while perpetually seeking ways to bring individuals excluded by local contingencies into the negotiation process (Apple, 1993; Haggerson, 2000)

Calls for the development of new goals—a.k.a. standards—for education without the application of these forms of analysis are irresponsible. Many of the standards reforms at work at the beginning of the twenty-first century have failed to examine their proposals

in light of what educational institutions have been asked to achieve. Such a failure brings about a mismatch between standards for which schools will be held accountable and the purposes of education. Time and again we witness standards that outline a knowledge of a fragmented body of content inducing teachers to build their classes around the provision of that content. In the process, the effort to engage students in the high-level analytical skills discussed here is derailed. The goal of graduating well-educated people who can produce and analyze a wide range of knowledge collides with rote-based memory work. Everyone leaves frustrated because little analysis of conceptual frameworks vis-à-vis standards has occurred.

This is the lack of vision, the conceptual inadequacy, that standards of complexity seek to address. To make any positive contribution to the effort to construct high-quality education for the first decades of the twenty-first century, standards must take into account the imperatives of democracy, a moral and ethical vision, the possibilities of the human mind and spirit, the economic rearrangements of a global informational order, and analytical rigor. It is at this point, of course, that advocates of technical, low-cognitive-level standards contend that "all of this sounds good, but children don't really learn anything when we speak of such noble goals." Students need to learn content, they argue, not some hard-to-measure skills. Such an argument plays well on the TV talk shows but is in the end a straw-man device. In schools with complex standards, students learn content. To advocate a subject-matter content–free school is absurd.

The salient point in this conversation does not revolve around the question: Do we or do we not teach content? The answer to that question in standards of complexity is, "Yes, and lots of it." A key distinction between the two conceptions of standards is that in the process of learning various subject matters, teachers pursuing standards of complexity take important additional steps. They are scholars who:

1. Take into account the democratic, moral, ethical, and cognitive contexts we have discussed
2. Push students to understand where the content came from, the means by which it was produced, and how it was validated as knowledge worthy of inclusion in the curriculum
3. Induce students to use these contextual understandings to reflect, research, and evaluate information presented to them
4. Cultivate skills that can be used after the confrontation with content to enable them to learn new content in novel situations
5. Prepare students to produce new content in relation to the context in which they are operating

Thus, content acquisition in standards of complexity is a necessary but insufficient step in becoming educated. These distinctions about the

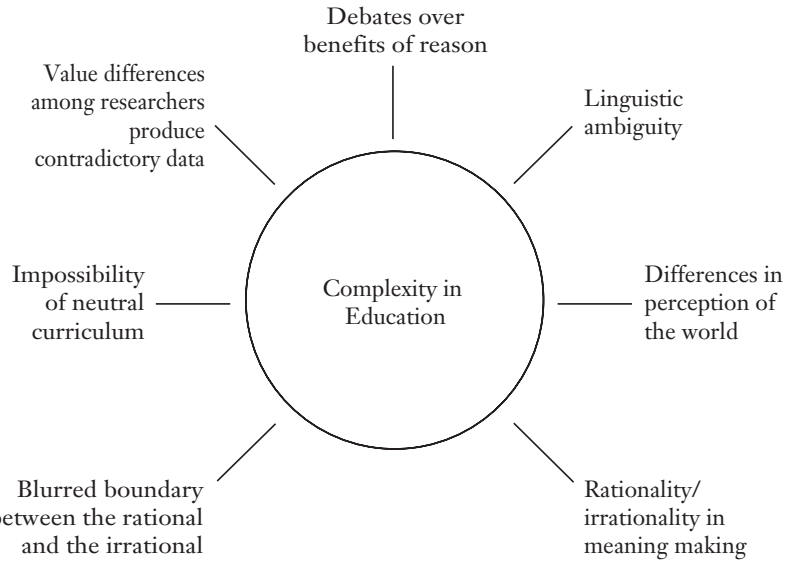
role of content in the standards conversation demand further attention. This is exactly what I do in "Subject Matter and Content." In the effort to bypass technical standards' reductionistic notion of content and content acquisition, I propose a rigorous notion of subject matter in which content is never seen as a body of data to be inserted into the minds of students. In standards of complexity, teachers and students engage in a different relationship with content—a democratic relationship that refuses the authoritarianism of technical views of content. Knowledge and the pronouncement of experts in this complex democratic context are no longer beyond questioning, and teachers and students are no longer "peons" of an authoritarian system who simply deliver and receive the information provided. Once such authoritarianism is abandoned, teachers and students move into a democratic zone of complexity where questions about the role of content in education are cherished rather than suppressed.

What Do We Mean by Complexity?

Teachers working toward standards of complexity rebel against the view of practitioners as information deliverers, as deskilled messengers who uncritically pass along a canned curriculum. Highly skilled, scholarly teachers research their students and their communities and analyze the curricular topics they are expected to cover. In light of such inquiry these teachers develop a course of study that understands subject matter and academic skills in relation to where their students come from and the needs they bring to school. Such an act is highly difficult, requiring a wide range of knowledge and abilities as well as subtle pedagogical skills. If nothing else, it is complex. When this complexity is added to the complications of a deep understanding of knowledge and its production, the job of teaching to rigorous standards becomes a profoundly sophisticated task (Novick, 1996).

Educators and policy makers who appreciate complexity in the way it is employed here know that the physical world and social reality answer analysts' questions much like the oracle at Delphi—enigmatically. Rarely do top-down technical standards take into account issues of complexity such as:

1. The ambiguity of language and its less-than-transparent meanings
2. Individual minds rarely perceive phenomena and their meanings in the same way
3. Meaning making is not simply a rational process
4. The boundary between rationality and irrationality is blurred
5. The construction of a neutral curriculum is an impossibility
6. Researchers coming from different value positions will produce often contradictory information about a particular artifact
7. The disagreements about the benefits of reason (Madison, 1988; Thomas, 1998)



Issues Contributing to Educational Complexity

The importance of understanding these issues contributing to educational complexity revolves around the conceptual and cognitive limitations of that which constitutes schoolwork. In such a context, the analytical abilities of, say, an Albert Einstein would not be recognized as legitimate or relevant. Einstein would not have been a good student in schools shaped by top-down technical standards because he was not proficient at memorizing data. When it came to viewing the world from unprecedented angles, viewing contradictions within accepted bodies of knowledge, developing thought experiments where "what would happen if . . . ?" questions were raised, transferring learning in one domain to another, or applying particular forms of knowledge to problems in the lived world, however, Einstein was undoubtedly a genius. These complex abilities were simply not taught in Einstein's schools; they were not viewed as worthy of knowing. Unfortunately, in the technical-standards–driven schools of the early twenty-first century, they are still unrecognized (Kincheloe, Steinberg, and Tippins, 1999). Such recognitions are salient to our view of standards, as they reflect the complexity we seek.

If schools are ever to be worthy of the patronage of young Einsteins—and there are millions of students capable of Einsteinian achievements in a variety of fields—they must begin to identify the nature of the new forms of knowledge and scholarly abilities teachers need to teach to standards of complexity. Colleges of education must play a central role in this identification and preparatory process; school districts and state departments of education must develop incentives for educators to immerse themselves in the complex task of acquiring, practicing, and teaching these high-level abilities (Elmore, 1997). Laying the

conceptual foundations for these two tasks is a basic goal of this articulation of standards of complexity. One of the central understandings of these conceptual foundations involves exposing the logic behind the organization of many existing schools and the technical standards that guide them.

Exploring this logic on which technical standards are grounded—a logic of reductionism—is a central task of this encyclopedia. I spend a great deal of time on this task in many of my chapters, in "Reductionism" in particular. In my chapters on "Curriculum" and "Epistemology," much of my focus is on the nature of complexity and its importance in the overall concerns of school reform. My pedagogical vision of complexity, articulated in "Curriculum," involves scholar-teachers engaged in teaching, research, reflection, constructing their workplace, building curriculum, and so on. If we are ever to produce an exciting educational system that moves us to new levels of social, scientific, democratic, and ethical accomplishment, advocates of standards of complexity must inform the public about this complex role of teachers.

Indeed, this complex role of teachers involves educators coming to understand the meaning of complexity. In my chapter on "Epistemology," I lay out sixteen features of an epistemology of complexity. Number 12 on that list involves the nature of complexity. While there are many features of complexity outlined under point 12, one of the most important involves an understanding of the complexity of knowledge production and the curriculum building and pedagogy that take place as a result of such understanding. Even as information is being gathered, advocates of complexity contend, it is being analyzed and interpreted by researchers. A more reductionistic (or positivistic—see my description of positivism in "Epistemology") view of knowledge assumes that only after one knows the facts is he or she ready to analyze. I argue in point 12 that this reductionistic way of seeing misses the key point that what we designate as the facts involves an act of interpretation.

In technical standards and the reductionistic view of knowledge implicit within them, this act of interpretation is rendered unconscious. Make no mistake, it takes places, but the researcher, the curriculum designer, the standards devisor, the teacher, and the student are not aware of it. Thus, the knowledge that technical standards demand students commit to memory is a mere interpretation, not a final truth, as it is presented. It is certain knowledge, that is, Truth. And when we know for certain, little need exists to pursue alternative ways of knowing that take this complexity into account. "Deviant ways of seeing," or maverick points of view as Yusef Prögler labels them in "Social Studies," are dismissed as irrelevant. They are not deemed as important sources of new insight or socioeducational creativity. An understanding of complexity is necessary to social and pedagogical rigor and innovation.

The theme of complexity is central to the purpose of this encyclopedia and at some level runs through all of

its essays. For example, Mayers in "Interpretation" justifies the study of hermeneutics on the basis of its ability to retrieve the complexity that the reductionism of technical standards erases. In "Knowledge," Willinsky describes the complexity of knowledge production, outlining the damage that the abandonment of complexity by technical standards has already caused. Not understanding complexity induces us, he maintains, to displace "global and local thinking about what school should be like, and how it can serve the children and the community." Following Willinsky's theme, Judi Hirsch in "Mediated Learning" delineates how understanding the complexity of the social, cultural, and economic contexts that shape our students is essential to our ability to serve their needs. No aspect of education is exempt from the power of complexity; even art education is transformed by the confrontation with complexity, as Roymieco Carter and Leila Villaverde adeptly point out in their essay in the section "Art":

> As we see art as a part of our everyday life, we translate this vision into ideas for use in the classroom to form a different type of student, teacher, and pedagogy. Exposing students to the realities of life through critical art pedagogy allows both students and teacher to think for themselves and with others in mind. We are speaking of the freedom to think and to be aware, challenged, questioned, provoked, and incited—the freedom to deal with complexity as one redefines learning, education, teaching, and art and, most important, the pre-K to 12 curriculum.

And once complexity is understood in relation to art:

> Through these standards, claims to truths about art in our lives and the world are questioned, scrutinized, and demystified in order to make the arts central to the process of knowledge production. These standards also challenge a system of education that devalues and silences teacher and student voices, narratives, and works. This chapter ["New Standards for Art Education: Disassembling the Canon"] proposes that students and teachers not only produce art, but exhibit, publish, research, and partake in a greater community of artists. The established parameters of education will be dismantled, leaving plenty of open spaces for innovative pedagogy.

Understanding Complexity: The Naive Realism That Dilutes Rigor

One of the most basic assumptions embedded in technical standards is a naive realism that assumes the world is a simple system made up of entities capable of precise empirical descriptions. Such a way of viewing knowledge (an epistemology) allows teachers, educational leaders, curriculum developers, and students to run away from complexity and hide in a shelter of mediocrity. Such low-level thinking undermines the social order on a multitude of levels and weakens the civic and democratic order. Such naive realism promotes a view of knowledge production where ancient Greek notions of "gaining insight" are replaced

by an obsession with following the "correct" method. Here knowledge production is *reduced* to a notion of rigor that relies exclusively on fidelity to the scientific method. Thus, knowledge production is no longer an act of insight, contextual analysis, intuition, and creative brilliance, as much as it is a *procedure*.

Viewed as a procedure, knowledge production turns away from concern with the multiple relationships among entities, the larger processes of which they are a part, the new understandings to be gleaned from examining the same thing within different contexts. Instead, realist knowledge producers focus on understanding the objective world and its contents as isolated entities, things-in-themselves. In this epistemological framework, these things-in-themselves wait around for a knower to arrive and "discover" them by using the right procedure. (See Barbara Thayer-Bacon's essay on "Epistemology" for a deep understanding of this concept.) Such a way of perceiving shapes not only knowledge production but knowledge reception as well. Assumed in the realist scheme is the belief that knowledge discovery is the end of the process—after we "know" one of these things-in-themselves, there is nothing more to learn. Thus, the purpose of a school or educational standards grounded in this construct is simply to obtain the knowledge already produced—a.k.a. the truth. Valerie Janesick's chapter on "Best Practices" adeptly delineates the poverty of such reductionistic pedagogies.

All this talk about analysis, complexity, relationship, insight, creativity, and higher-order thinking is a waste of time in the context of naive realism. The work has already been done, and the knowledge has been produced by the experts. In this context, schools use dedicated teachers to simply induce students to commit the truth to their memory banks. This is one aspect of the logic that serves to dumb down teacher education and public education at the beginning of the twenty-first century. In philosophical language, this influential concept of thing-in-itself has been referred to by its detractors in the Western tradition as the category of substance. In this disciplinary lexicon, substance implies that what we know has a material quality, it is *something*. The traditional dissenting viewpoint asserts that what is ultimately important in worldly affairs is immaterial, is the *no-thingness* of relationships and connections among things. A relationship or a conceptual connection can many times not be expressed in an empirical manner. From the naive realist perspective, this renders it irrelevant.

When knowledge is produced and educational standards are devised in the disconnected and decontextualized context of reductionistic naive realism, bad things happen to good people. As Willinsky points out in "Knowledge," this reductionism has induced the public to believe that research and evaluation produce singular, universal truths about complex entities such as learning to read and write. Learning to read and write or assessing how well one reads and writes is a complex enterprise. Depending on what we are looking for in

these contexts, we will achieve dramatically different results in our teaching and evaluation. If we measure a student's ability, for example, to recognize a series of words on a list, the reading score we obtain for the child may be very different from what we could learn if we studied the child's reading habits in more detail. Which one tells us how literate he or she is? Which is the true measure of the child's reading ability?

If we are interested in a more contextualized form of knowledge and assessment, we may conclude that the quick and dirty, decontextualized, and disconnected reading assessment of technical standards is misleading. If it drives the reading curriculum, we may conclude that it promotes trivial tasks such as memorizing word lists, while leaving more complex and relevant literacy tasks such as reading for meaning and integrating reading into one's daily life out of the curriculum. In her essay on "Texas State Standards," Sharon Spall writes of the way the teacher-education standards test, known as the Examination for the Certification of Educators in Texas (ExCET), drives the teacher-education curriculum. In order to preserve their accreditation, schools of education must focus on improving these decontextualized, disconnected scores to the neglect of long-term, continuous improvement of teacher-education programs with all the complex understandings and tasks such improvement demands. Spall concludes: "If efforts to deal with ExCET are isolated strategies, a holistic approach for the total program that would incorporate continuous improvement and continuous faculty learning for the total program system is impossible." Trinidad San Miguel and William Jasper extend these themes in their chapters on "Texas State Standards."

Realist truth claims are riddled with problems as the aforementioned issues contributing to educational complexity are ignored. The content realist methods produce is not the neutral result of objective procedures. A plethora of value choices and subjective judgments have gone into the production of the final product of inquiry (Madison, 1988; Thomas, 1998; Ward, 1995). This final product—data—is the result of a procedure-driven chronicling of the decontextualized thing-in-itself. Such a removal from the various contexts that shape its meaning render such "validated knowledge" less trustworthy than scholars and teachers have traditionally assumed. Andrew Murphie (1998) labels knowledge produced by more contextualized and complex methods "objectiles." An objectile escapes this realist-thing-in-itself reductionism and simplification and comes to be defined by its movement and change and its connections with other objectiles. The researcher, knowledge analyst, teacher, and learner can use the insights gained from the notion of the objectile to become far more sophisticated knowledge workers and thinkers. They understand that objects in both the physical and the social worlds are not merely solid and independent entities. Instead, learning that recognizes com-

plexity is more concerned with an object's connections to other objects than its substance.

There are numerous examples of the importance of connection in the world around us. Art has always had objectile properties, as the positioning of images in relation to one another is seen as more important than the isolated image. In contemporary electronic reality, hypertext with its series of links from one site to another well illustrates connectivity. In hypertextuality, the site possesses no presence, that transcends its reference to somewhere else (Murphie, 1998). In this cyber-context, connection and relationship take on a new importance as we construct various Web sites and seek knowledge on those already created. Maybe the best way to illustrate the importance of connection vis-à-vis a realist conception of the thing-in-itself is to follow the way it helped shape Albert Einstein's development of the general theory of relativity. In this example, one can see the way this epistemological dynamic separated Einsteinian from Newtonian physics and opened a window not only to a new and more complex view of the universe but to higher orders of cognition as well.

Einstein, Connection, and Complexity: Moving to a New Cognitive Domain

Working in an Austrian patent office in 1905, Einstein sought to understand the Newtonian force of gravity and the limitations of Newton's theory. Something about the theory didn't make sense to Einstein, and he wanted to know what it was. When Newton developed his universal theory of gravitation in the 1600s, he focused on gravity as a thing-in-itself. If gravity, as he believed, was simply a force, why would one look at it in any other way? Thus, he and especially those who followed him employed the emerging scientific method and removed gravity from its context so it could be efficiently analyzed. And this was exactly their mistake.

Instead of searching for gravity as a *thing*, Einstein saw it as a *relationship*. He saw gravity *in relation* to other aspects of the universe. Indeed, he understood that the relationship between matter and space is exactly what makes the world what it is. What we experience as gravity is not a force made up of tiny gravitons but a reflection of the structure of the universe moving us along a path existing in curved, multidimensional space. Space, he figured, is not the package in which the universe is stored—it is a central part of creation. For those who understood the basic idea of Einstein's theory, the world could never be viewed the same way again (Woods and Grant, 1998). A new, more complex view of the physical world was emerging. The way Einstein uncovered this complexity provides insight into cognition, education, and the quest for high standards in the twenty-first century.

An analysis of the genesis of the general theory of relativity helps us make sense of the need for standards of complexity. Einstein used the no-

tion of a rubber sheet stretched over a baking dish to explain the complex notion of space. When a bowling ball or a BB is placed on it, the sheet is bent or warped around the objects. This distortion exemplifies what massive objects such as the sun or the moon do to the fabric of space. This is one of the basic concepts of Einstein's general theory of relativity. The rubber sheet is flat when no objects are placed upon it; Einstein referred to this as the absence of gravity. When the bowling ball depresses the sheet, the curvature around the depression represents a gravitational field. A BB rolled along the sheet will fall into the trough just as an asteroid will fall to Earth if it gets too close to its gravitational field. The more massive the object the greater the bending of space. The bowling ball will distort the rubber sheet more than the BB.

So, according to Einstein, mass causes a depression in space. If a comet, for example, moves too close to a star, it is drawn into its gravitational well and seized. Thus, entities in space follow the shape of the universe when they fall to Earth. They are not pulled by some gravitational force! While the rubber sheet is merely a metaphor and reduces the complexity of Einstein's relativity, it does help us appreciate the structural unity of space, matter, and motion. Gravity, therefore, is simply a part of the structure of the universe—and, amazingly, Einstein figured that out. Objects fall into the valley in space-time produced by the bowling ball/sun. In this context, the orbits of the sun's planets can be better conceptualized: Mercury and Venus as well as Neptune and Pluto "roll" around the indention in space caused by the sun's gravity trough.

As Einstein sought to understand the force of gravity, he discovered that there is no such thing as "nothingness" in the structure of the universe. Space, like everything else, *is something*—it is an integral part of the fabric of the cosmos. Space is neither empty nor separable from matter. The *relationship* between space and matter is central to making the universe what it is. Despite sci-fi's fascination with antigravity machines, Einstein's general theory of relativity contends that gravity can't be turned simply on and off. To do so, one would have to change the nature of the universe. Gravitational change, Einstein asserted, would involve a geometrical change. Thus, the general theory of relativity with its insightful notion of space as a rubber sheet forces us to change not only our view of the universe but also, we argue, our conception of the microcosms of the social, the psychological, and the educational—to name only a few. Drawing on Einstein's emphasis on relationship in the physical universe and moving it to an appreciation of interconnectedness in infinite domains helps us reconsider the notion of complexity, higher-order cognition, and rigorous standards.

Einstein's connectedness in the physical universe revived numerous concerns with the limitations of Western logic and its tendency for thing-

in-itself reductionism. Ignoring the importance of relationship, many Western scholars disregarded the wisdom produced in numerous ancient traditions regarding the interaction between entities as a "living process." In such a process, all things in the world were affected and shaped by all other things—just as in Einstein's theory, mass worked on space and space worked on mass. Thus, all things of the world are "in process," parts of larger activities. (See point 13 in my essay on "Epistemology" for further insight into the concept of process.) The role of the scholar changes with this idea in mind from one of discovering things (the force of gravity) to one of gaining insight into the way things fit into larger processes, relationships, and structures.

Obviously, this notion is extremely important in teaching and learning. When the world is viewed in this manner, Western commonsense linearity and notions of cause and effect begin to break down. For example, does gravity cause the apple to fall and hit the observer in the head? Not exactly, if the question is answered with the general theory of relativity in mind. Such a recognition of complex new ways of seeing not only the physical but the social and psychological worlds as well is central to our standards of complexity. Viewing Newtonian realism—gravity as a thing-in-itself—through Einsteinian eyes, we come to appreciate the forms of knowing that can change the world. Such a knowing does not involve merely accumulating so-called facts and data that make us "educated"; it involves creating conditions where everyone can participate in the analysis of relationships and the subsequent creation of meanings that connect us to the complexity of the world (Apple, 1993).

This concept of analyzing relationships that lead to meaning making and help us connect to the complexity of the world is central to this encyclopedia. The hermeneutic act—a process that permeates the curriculum of complex standards—that Marjorie Mayers explains so clearly in "Interpretation" always involves making "connections beyond the small systems of which we are a part." Danny Weil picks up on Mayers's concerns in his essay on "Florida State Standards." As he describes his critical thinking program that Florida's technical-standards reforms removed from the curriculum, Weil illustrates the importance of relationship in higher-order cognition. Critical thinking always involves the recognition of how "ideas stack up against one another" so we can better assess them. In relation to connection and interdisciplinary learning, Weil writes:

> Critical thinkers do not let the fragmented approach to learning control their thought patterns. They look to conceive of the parts relative to the whole and the whole relative to the parts and thus know the necessity of transferring insights across and through disciplines. They understand that all learning is interdisciplinary. By using insights from one subject matter to un-

> derstand another, they are able to uncover similarities in systems, patterns, and thoughts among disciplines. By approaching issues from a multitude of different perspectives, critical thinkers develop a more holistic approach to learning and understanding that offers greater width and depth.

In my essay on "Curriculum," I join with Mayers and Weil to promote the importance of connection and relationship to standards of complexity and the curriculum of complexity. To reconnect the world to the school, I advocate a complex curriculum that overcomes the reductionism of technical standards—a reductionism that emanates from a modernist epistemological fragmentation of our knowledge of the world. My effort in the "Curriculum" chapter to bring these diverse concepts together is a key moment in the conceptual development of the encyclopedia. Along with many other authors in the work, including Linda Wesson and John Weaver in their chapter on "Administration," I am trying to explain to readers where the modes of thinking that drive technical standards have originated. These disconnected ways of making sense of the world have been constructed in particular places during specific periods of time and unconsciously reflect the assumptions of those who concocted them. Now we know better; now we can pick out the weaknesses and the problems created by these ways of seeing. We do not have to perpetuate their irrational consequences in the schools of the twenty-first century.

Implementing Standards of Complexity in Complex and Diverse Classrooms

When the standards advocated here reference complexity, they are hailing complexity not only within an Einsteinian world of content but also within the complicated world of teaching with its diverse cultural settings and wide range of student backgrounds. Advocates of technical standards assume that if we lay out the minimum-content requirements that all students must meet and then teach everyone in the same way, schools will improve. They don't seem to recognize the diverse needs and dispositions toward the schooling process that different students bring to the classroom. Would we teach the same skills and content in the same way to a group of students in a classroom where most students read below grade level, as opposed to one where all students read above grade level? How do we develop and teach standards that take into account this and 1,000 other levels of diversity? Standards that don't address such issues are mere window dressing—public relations campaigns for particular political operatives.

Such questions and concerns, ironically, take us right back to Einstein. The great physicist's relation to complexity doesn't end with his revelations of a universe far more perplexing than previously imagined. Einstein the young student also provides lessons concerning the complexity of the teaching act. The strict, authoritarian German schools of Einstein's youth

provided him with carefully delineated content goals—specific subject-matter standards—that his teachers insisted he commit to memory. Reflecting on his primary, secondary, college, and graduate schooling in his later life, Einstein saw years of wasted time where he was forced to memorize large quantities of data that were fragmented to the point of meaninglessness. None of the abilities that he used to develop his insights into the universe were cultivated in school. Instead, his efforts to employ such budding capacities were squashed by a system that saw them as irrelevant and even at times disrespectful.

Einstein represents only the tip of the diversity iceberg. His difference was psychological in that he learned in ways quite unique. His verbal ability was slow in developing, and because of this he told interviewers that he thought in pictures and "thought experiments." The rubber sheet and the bowling ball constituted a thought experiment that eventuated in the general theory of relativity. Obviously, there are thousands of different ways to learn, and teachers must gain an awareness of such cognitive differences in their efforts to teach in more sophisticated ways. Often these cognitive differences are connected to cultural issues such as race, ethnicity, socioeconomic class, gender, religious beliefs, and other factors. Any articulation of rigorous standards must understand the effects of these contextual factors, particularly the ways they affect school performance. Without such an understanding, cultural and cognitive *difference*, as in Einstein's case, is confused with academic *deficiency*. Learning to make this distinction and then developing a pedagogy to address the difficulties students experience is a necessary teaching ability in standards of complexity.

At the beginning of the twenty-first century, classrooms in this society are structured by multiple layers of complexity. Typically ignoring this reality, technical standards often view the educational world as one homogenous group. Even relatively simple distinctions such as the difference between the goals of elementary and secondary education are often overlooked by the present standards conversation. Elementary educators teach all subjects and are expected to be content generalists. Of course, secondary teachers teach particular areas in the present school configuration and are expected to be content specialists. Elementary teachers are now being presented with stacks of content standards in a variety of fields with little, if any, help in integrating them or making sense of how these bodies of content might fit into an elementary education.

Secondary teachers are now being provided with large collections of technical-content standards in their disciplines. If such teachers possess the skills such standards dictate, then advocates of technical standards are demanding that these secondary teachers discard their disciplinary knowledge and experience and embrace without question a body of externally imposed data. Such teachers deserve to be a part of the conversation about standards,

not deskilled functionaries who mechanistically do what they are told by external inquisitors. In standards of complexity, teachers must not only engage in a dialogue with standards devisors, but also buy into the logic of such rigor if improvements are to be made. Advocates of standards of complexity must be prepared to convince teachers that such goals are worthy. Such advocates must be prepared to help teachers move from their present understandings to a more complex view of the teaching act. Standards of any type cannot work if teachers are excluded from the negotiations about their development and implementation. Nancy Kraft expands this discussion of teacher skill in her chapter on "Certification of Teachers."

Many advocates of technical standards hold a romanticized vision of a common U.S. culture that fails to understand the cultural diversity and the educational complexity such difference establishes. If we don't address linguistic diversity, students whose first language is not English will continue to be left behind. If we don't address economic diversity, students from poor and unschooled families will rarely perform as well as students from more privileged backgrounds. Such equity concerns have infrequently bothered advocates of technical standards. Faced with such questions, many such proponents have simply argued that if schools simply raise the requirements, then everyone will fall into line. Such a position again ignores complexity—in this case, the multitude of socioeducational forces that operate to undermine the performance of students who fall outside the mainstream in some way or another (Elmore, 1997; Apple, 1993).

In this context, Simpson and Jackson in "Evaluation" remind us yet again of John Dewey's continuing relevance. Dewey was well aware of the differences among students and the need for good teachers to understand the nature of these distinctions. In diametrical opposition to the standardization impulse of technical standards, Dewey maintained that quality education demanded that teachers place high value on the distinct and different talents of students and use such knowledge to produce unprecedented levels of thinking and performance. In his piece on "Urban Education," Rob Linné reminds us of the vast differences among students and even school systems in the contemporary United States. In these different systems and with the different students within and among them, the need for Dewey's call to understand such divergences and the differing need they create is greater than ever. One of the greatest failures of advocates of technical standards, the authors and editors of this encyclopedia contend, involves their failure, more often their refusal, to take this diversity into account.

Standards of complexity are unambiguously committed to not only an understanding of this diversity but also the development of ways of dealing with it—ways that see student diversity as a resource and not a liability in U.S. schools. Judi Hirsch emphasizes this point in "Mediated Learning," as

she argues that there are complex causes of low student performance—low ability being merely one of a myriad of factors. Maybe the presence of such complexity and diversity, Hirsch argues, should move us to spend more time analyzing the process of learning than the outcome of evaluations. Engaging in this process, we may find that standards tests provide quite a distorted picture of the experience and abilities of different learners. In this analytical context, we may begin to understand why particular students from specific backgrounds might be assessed in negative ways in a system driven by technical standards.

As we engage in such study, we are informed by Sue Books's chapter on "Class and Socioeconomics." As she analyzes the "No Excuses" campaigns that dismiss the significance of students' backgrounds, Books writes of the need to understand the contextual forces that shape the lives of students and their relationship to the school. Understanding the effect of such factors, she contends that such insights should neither provide those students with excuses for failure nor lead educators to conclude that such students cannot learn. Such awareness of poverty, racism, and sexism simply helps teachers teach such students more effectively. In the new world of technical educational standards, information about the lives and cultural experiences of marginalized students is often repressed. As Schubert and Thomas point out in their piece on "History," the common tendency to aggregate standards-test scores contributes to the erasure of diversity. For example, a high-performing suburban high school "may do well in preparing college-bound students. At the same time, they may not do well at all in preparing non-college-bound students. Yet, by aggregating all the scores, someone looking at the test data may see the school as excellent. Thus, the way data are reported is a problem and has political, racial, and economic overtones."

As Lourdes Soto points out in her essay on "Bilingual Education," the technical-standards movement has not been sensitive to issues of racial or ethnic difference. This cavalier attitude about marginalization on the part of the advocates of technical standards is disturbing to supporters of standards of complexity. Indeed, this lack of concern for the victims of class bias, racism, sexual bias, and sexism is a central motivating force for the development of standards of complexity. A key feature of complexity in education involves a deep concern for the way socioeconomic and cultural context shapes the goals of schools, the nature of the curriculum, and the performance of students. One can understand the nature and effects of race, class, and gender diversity only by studying schooling in these multiple contexts. Only in this way do we gain usable insight into the complexity of diversity.

This is what I am attempting to accomplish in my piece on "Learning Theory and Cognition." In that essay, I delineate the ways that a complex notion of cognition should be grounded in specific democratic prin-

ciples. Central to these democratic principles is an appreciation and use of concepts of cultural diversity and difference. In light of the effort to highlight our theme of complexity and diversity, I will here examine the seventh of the eleven democratic principles delineated in the "Learning Theory and Cognition" chapter: "Draws upon subjugated knowledge to help overcome dominant power's ability to regulate individuals and shape their consciousness."

This principle asserts that educators concerned with rigorous scholarship, social justice, and the consequences of diversity should study and teach ways of seeing and understanding the world of subjugated peoples. Given the nature of power relations in the world of the early twenty-first century, these types of knowledge have been typically devalued and kept far away from the curriculum. One will not find them in the subject-matter content required by technical standards. In this context, standards of complexity in this concern with diversity insist that teachers be aware of the specific histories and struggles of oppressed peoples in a variety of areas. One of these areas involves the school itself, as the classroom often becomes a central site for the legitimization of myths, lies, and silences about nonwhite, lower socioeconomic class, and other marginalized individuals. I go on in this context to explore the cognitive power of difference to help teachers and students understand both those around them and themselves in new and exciting ways.

This power of difference and diversity is extremely important to standards of complexity. It becomes even more important when it is not only dismissed but subverted by technical standards as well. Ray Horn reports in one of his chapters on "Texas State Standards" ("A Legal Challenge to Standardized Testing in Texas") that the Texas courts found that the state's technical standards exerted a "substantial adverse impact on minority students." Alex Caputo-Pearl in "Justice and Education" writes that when advocates of technical standards tell Americans that "all students can succeed," it is a calculated, diversionary lie designed to shift attention away from issues of marginalization. Sue Books in "Class and Socioeconomics" maintains that in schools shaped by technical standards, there has emerged a new silence about race grounded on the assertion that race and racism are no longer significant concepts in this society.

In light of such right-wing subversion taking place in the name of educational excellence, we believe that immediate action on behalf of justice and difference in education is in order. Standards of complexity support sweeping action to counter these disturbing tactics. This encyclopedia, of course, is one of many responses. Erik Malewski in "Queer Sexuality" powerfully articulates the moral commitment of standards of complexity to issues of diversity and difference:

> Those people and ideas that fall outside the category of ordinary might be not a

> detriment to society but gifts that can assist us in making transgressions toward new and unusual ideas. We need to consider that strange and foreign emotions and desires are an integral part of all human life that we can utilize to do good work and make connections to those people who seem most different from us.

Malewski is writing here in the context of sexual diversity and queerness, but his words resonate with differences of many varieties. A queer pedagogy, he argues, explicitly attunes us to such differences and helps educators "confound traditional classification systems with the hope that new and uncertain categories will offer further insight into socially responsible education."

Picking up on Malewski's concern with difference and the unequivocal commitment of standards of complexity to justice and diversity, Kathy Berry in "Democracy" writes of the need to examine Western cultural logics from a variety of different and non-Western perspectives. How can we speak of rigor and high educational standards and continue to exclude the perspectives of most of the people in the world from our curricula? Such a consideration would seem trivial, if it weren't for the fact that technical content standards have consistently engaged in such exclusionary practices. Such ethnocentric curricular decisions are not made serendipitously. Technical standards are driven by conscious ideological impulses that are uncomfortable with various forms of diversity, including divergent perspectives on the core issues that shape our social, practical, moral, cultural, religious, economic, and linguistic lives. At this point in time, the U.S. public seems to be unaware of the authoritarian and covert manner in which such fundamental issues are resolved in the technical standards reshaping public schools.

Thus, if we expect standards of complexity to work and socially just improvements in education to be made, then we must provide teachers much assistance. Advocates of standards of complexity must make sure that all teachers gain the academic and pedagogical skills necessary to understand and teach in a democratic education system. Just as important, teachers need help in the perplexing task of taking such knowledge and abilities and connecting them to the particular circumstances of their diverse classrooms. Anyone who fails to recognize the complexity of this task has not sufficiently analyzed the teaching process at the beginning of the new century. Educational and political leaders who view standards-based reform as a narrow process of specifying a specific body of content to be covered will find teachers rebelling as they attempt to implement such dictates amid the chaos of contemporary schooling. Such narrow standards *are not designed to help teachers accomplish their difficult tasks*. Too often they are designed amid calls for accountability to simplify the complex task of reporting school performance. In this way, public uncertainty is re-

duced, and the illusion of accountability is created. Carol Mullen and Leah Stover provide an example of the complexity and the contradictions of schools' efforts to comply with standards in "School Accreditation."

Judging by the experiences of professional groups, especially in history and English, in their attempts to insert the complexities of professional knowledge into the standards debate, it will be a struggle to move beyond narrow technical standards mandating subject matter reflecting one group's view of truth. The history-standards debate turned into a simple ideological fight over whose history would be taught. Questions concerning reflection on the debate itself, issues of historical knowledge production, the purposes of teaching history in the first place, the ways schools might deal with ideological diversity, the role of teachers in shaping content, and ways to help educators connect standards to classroom practice were ignored (Elmore, 1997; Zabierek, 1998). The effort to improve U.S. education and make it more just deserves better.

Contextualizing Standards

In order to make sense of the current standards debate and to rethink educational standards in rigorous ways that take into account issues of complexity, analysts must understand the multiple contexts in which standards operate. Since most standards being pushed on schools are of the specific-content variety that mandate the teaching and learning of unexamined subject matter, it is important for political and educational leaders to appreciate the context in which such official data are generated. The way such information originates and is canonized is not a simple, linear, or innocent process. Instead, the information that becomes the content standard is produced in a complex interplay of researcher perspective, experiential background, observation, and values vis-à-vis the ideological interests and educational goals of standards makers (Bridges, 1997).

Teachers and students in standards of complexity—not to mention educational and political leaders and standards devisors—need to understand this complex process. A manifestation of their grasp of complexity involves the ability to uncover the ways particular epistemological and cultural assumptions have always shaped what information societies value. Tracing this process and understanding the context in which it takes place prepare students to make huge conceptual leaps, to push the cognitive envelope. In this process of analyzing the context of knowledge production and the construction of standards, students learn the invaluable lesson that multiple logics of inquiry coexist in any scholarly domain. Such contextual study helps students identify the implicit logics within that which is presented as neutral, transcultural, and even timeless. Technical standards are often offered in this naive and neutral manner, erasing in the process the complex social, political, and epistemological dynamics surrounding them.

Most of those who are forced to teach and learn them are "protected" from the forbidden knowledge of such rationalities and logics. (Please check my essay on "Epistemology" that discusses both the reductionistic epistemology in which technical standards are grounded and the complex epistemology on which standards of complexity rest. The epistemological data are central to understanding the work of this encyclopedia.)

Such erasures constitute a dumbing-down process in U.S. schooling. Those who are concerned with truly challenging our students operate on the basis of these contextual understandings of knowledge production, taking them into unprecedented levels of thinking, teaching, and learning. They deploy them as part of the process of breaking the presently perceived limits of human possibility, human achievement. Armed with such contextual knowledge, teachers and learners can begin to expand what it means to learn. In simple terms, they not only possess knowledge but also know where it came from, the conditions of its production, the ways it can be used to bring desired states into being, the problems its unexamined use may create, and alternative information that may exist about similar topics produced by differing logics of inquiry.

This rigorous set of scholarly abilities should be possessed by everyone who passes through the hallways of public schools. Ray Horn in one of his essays on "Texas State Standards" ("A Postformal Conversation about Standardization and Accountability in Texas") understands this assertion and proposes a new form of public conversation to promote such abilities. The basis of his postformal conversation is grounded on the act of contextualizing what is being discussed in a way that provides a deep understanding of the subject. When this commitment to contextualization does not occur—as in technical standards and the reductionistic ways of seeing that they promote—the result is unfortunate. In decontextualized technical standards, we end up, Sue Books tells us in "Class and Socioeconomics," with proclamations that the condition of schools, the socioeconomic background of the child, or the nature of the communities surrounding schools doesn't matter. Books, like other advocates of standards of complexity, finds such assertions patently absurd.

By blocking out consideration of the contextual environment in which schools operate and children come of age, Carolyn Abel et al. argue in their chapter on "Texas State Standards," technical standards reject particular forms of pedagogy such as child-centered education without a discussion of its merits or problems. When technical standards mandate what content is to be committed to memory and base student promotion and retention on high-stakes multiple-choice tests, a pedagogy that considers a child's background and individual needs is disallowed. A standardized, teacher-centered, fact-oriented, test-driven pedagogy without deliberation has been mandated. What happened to a democratic education? Democracy in

the educational sphere evaporates into thin air like a shallow pond in a West Texas drought. This is merely one of a plethora of consequences of inattention to context.

The act of contextualization is frightening to advocates of technical standards, as it injects complexity into what appear to be simplistic educational questions. For example, in technical standards, political leaders merely hold teachers and students strictly accountable. There's nothing complex here: just test them on what they should know. But what teachers should know is a terribly contentious question. What a good student should know has perplexed human beings since the dawn of history. Do we simply dismiss these struggles, or do we gain insight into these basic educational questions by understanding the historical context of human beings' efforts to answer them in different times and places? Writing about historical contextualization in their chapters on "Functionalism" and "Certification of Teachers," respectively, Danny Weil and Nancy Kraft point out that educational reformers consistently reinvent the pedagogical wheel, proclaiming great innovations when they have simply "refried" earlier unsuccessful proposals. Proponents of technical standards are blatantly guilty of the sin of refrying.

In light of these contextual issues, standards of complexity also analyze the context in which information is interpreted in educational reforms. Too often the centrality of the interpretive act in knowledge production is lost in traditional schooling and technical standards–driven lessons. Again, we observe the process of reductionism at work, as an education that disregards the interpretative context confuses the event, act, or text with the interpretation. The meaning of the object of study rests not on the object itself but in the less-than-innocent act of its interpretation—and if nothing else, interpretations are always open to challenge. If students view any interpretation as an act of mythmaking, then they may be better equipped to demystify the authority and expose the invisibility of the interpretive aspect of knowledge production. Moving to this deeper context of information analysis, the process of interpretation is opened to the light of day. Advocates of standards of complexity (such as Marjorie Mayers in her exploration of hermeneutics and standards in "Interpretation") consider this exposure of the subjective nature of interpretation as an indispensable feature in both understanding the construction of standards and in the education of top-quality teachers and wise students (Degenaar, 1995; Madison, 1988).

Contextualizing Diversity

Advocates of standards of complexity understand these dynamics; they understand that knowledge producers, standards writers, teachers, and students perceive the world from a center located within themselves, shaped by the social and cultural context in which they operate, and framed by

languages that contain within them tacit views of the world. As they dig deeper into the contexts surrounding standards, analysts sensitive to complexity find that students from different racial, ethnic, and class locations will relate to standards in different ways. If students who fall far from the middle-class, white, English-speaking mainstream are not provided assistance by insightful teachers, they will be the victims of decontextualized content standards. These students will fail to meet the standards not because of some inability or lack of intelligence but because of a set of forces unleashed by their relation to what is often labeled the "common culture." The more standards advocates use the term *common culture* in an unexamined way, the more those students who fall outside of its boundaries will fail.

Educators who understand contextual complexity appreciate the notion that U.S. culture is not a homogeneous way of life but a domain of difference shaped by unequal power relations. They understand that social and educational analysts and professional practitioners must act on an appreciation of the way these differences shape people's relationships to various institutions. If everyone is seen as a part of some narrow articulation of a common culture, then those who don't fit the mainstream criteria will find themselves looking into the society's institution as unworthy outsiders. Rigorous standards understand these important social tendencies and make sure that steps are taken to include everyone in a high-quality education (Kincheloe and Steinberg, 1997; Apple, 1996).

The way these factors play out in the everyday life of school is multidimensional, complex, and always significant. When classroom instruction is driven by technical standards with their fragmented factoids, the same pedagogical actions take place repeatedly without regard for who succeeds and who fails—in particular, what social groups succeed or fail over time. A creative way of merely *delivering* content, no matter how ingenious it may be, still works to produce much the same results as long as the epistemological assumptions are the same. Thus, to avoid falling into these age-old traps, teachers must understand both the social context that shapes learners and the epistemological context that molds the way knowledge is viewed and thus educational goals are forged in the classroom. Such contextual awareness provides teachers with a monitoring system that allows them a cognizance of the multidimensional effects of their pedagogy. Of course, U.S. education didn't need top-down content-based standards to fall into the trap of delivering a decontextualized standardized body of unproblematized data to diverse students with long-term predictable patterns of success and failure.

Indeed, teachers have for a long time taught de facto content standards by teaching the subject matter of market-driven textbooks. Questions concerning the writing and production of the textbooks were generally not asked. Thus, teachers who teach a

more rigorous curriculum are reflective professionals who bring an awareness of multiple contexts of the teaching act. Insights derived in this contextualizing activity allow teachers to engage in and share with students the higher-order cognitive activity of reframing knowledge and skills. This reframing process moves them to ask questions of belief and value: Do we believe what this author is telling us about the meaning of the short story? Do we see this description of Western expansion in the nineteenth century as a balanced account of the process? Is this a comprehensive depiction of Darwin's theory of evolution? Is the data presented in the chapter on quadratic equations worth knowing at this point in our study of math? Why is quantum mechanics not included in our physics textbook (Elmore, 1997; McLaren, 2000)?

The ability to employ contextualization in the pursuit of multiple perspectives is an important skill of teachers who embrace standards of complexity. As students begin to see the multiple perspectives that always surround any topic, they examine such viewpoints in relation to one another. The insights derived from such an activity lead directly to cognitive growth and an appreciation of the complexity of the cosmos. When specific content standards are implemented on the national or the state level, the ability of teachers to take the multiple contexts of schooling and its students into account is undermined. Their capacity to study the context in which knowledge is produced and validated is subverted. In such a simplified standards-based classroom, it doesn't matter who students are or what their specific needs may be—the curriculum has already been mandated. It doesn't matter who produced the information covered or the contextual conditions of its construction—the point is to commit it to memory.

The subverting of the contextualization of curricular knowledge and the exclusion of diverse bodies of information from the subject matter of schooling should be viewed with great alarm by friends of democracy. In their chapter on "Social Studies," Kevin Vinson and E. Wayne Ross sound the warning bells of intellectual freedom. They contend that the standardization impulse in technical standards destroys diversity of knowledge and action. In this context, they conclude, "teachers are forced to follow scripts" devised by unnamed external authorities. In his single-authored piece on "Opposition to Standards," Ross extends his concern with the antidemocratic power of technical standards, pointing out that conservative reformers are aligning college-admission requirements with technical content standards. Thus, the power of technical standards to limit what is taught and to determine what knowledge is legitimate in numerous educational venues continues to expand. Americans are yet to understand what a dire threat to democracy this presents.

John Willinsky in his chapter on "Knowledge" delineates the role of diversity of information in democratic education. Drawing from his previous

work on the politics of information in a democratic society, Willinsky maintains the importance of students (and citizens) understanding the divergence of viewpoints in any field of study. Along the same conceptual theme, we read Prögler's appeal for diversity in his analysis of "Social Studies." Those who approach an academic discipline from a divergent vantage point, Prögler writes, discover

> something that, although no one believed it at the time, turns out to be valid later. In the field of U.S. history, for example, Howard Zinn is an important maverick. In his classic *A People's History of the United States* (1995), he chose to view history from the perspective of ordinary folks, women, workers, and others whose lives run counter to the prevailing model of history from the perspective of rulers, presidents, and generals. Other Western mavericks include the biblical scholar and geologist Immanuel Valikovsky, the linguist Noam Chomsky, the mathematician Joseph Weizenbaum, the biochemist Linus Pauling, the mythologist Joseph Campbell, and the physicians Hulda Clark and Nancy Olivieri. Sometimes, mavericks dissent from their fields of expertise and use their knowledge to warn others of its dangers. Advertising executive Jerry Mander left that industry and wrote very important works informing the public about the insidious hidden dangers of advertising and television.

And these are only a few voices of diversity, Prögler tells us, *within* the Western tradition. At the risk of redundancy, these issues of knowledge diversity strike at the heart of democracy. As Abel et al. put it in their essay on "Texas State Standards": "A robust democracy is probably best served if schools teach diverse contents and skills in diverse ways."

Contextualizing the Contemporary

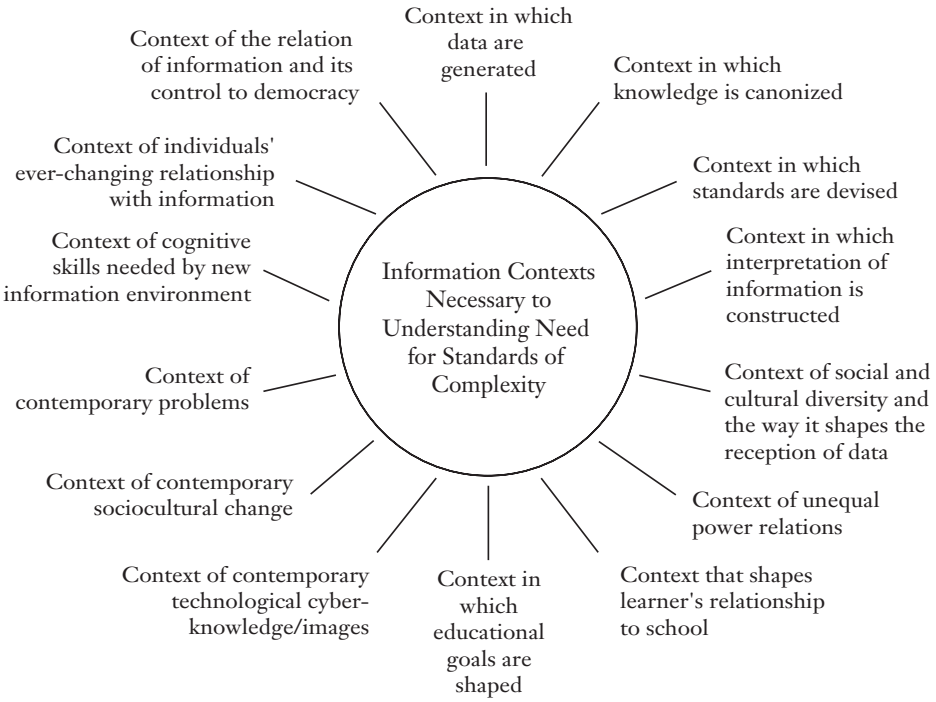
In this decontextualized format, teaching and learning are less immediate, less connected to the conditions of the community, less involved with what motivates students, less concerned with moral and ethical issues in the life of the school, less connected with other bodies of knowledge produced in different situations. Moreover, technical standards that decontextualize, remove schooling even further from the socioeconomic and cultural changes surrounding it. As the information society changes the nature of jobs and the tools required for them—not to mention the need for new citizenship skills in a new globalized knowledge order—teachers and students drift along in low-level memory work far removed from the commerce of everyday life. Standards of complexity understand the context of socioeconomic and cultural change, so that teachers and students can keep ahead of it and help direct it in positive, democratic, and just ways (Norris, 1998).

Educational reforms based on technical content standards remove teachers and students from a knowledge of

and input into the compelling problems of the day. This is a fatal pedagogical mistake, as it sets up a dichotomy between school and the "real world." Such a division will always undermine motivation, as teachers and students come to see the mandated activities of school as trivial and irrelevant. Such a bifurcation, as Schubert and Thomas point out in "History," violates the key tenet of progressive education: any school lesson should be connected to the interests of students and their relationship to the lived world. Any educational program that forgets this lesson will not succeed in the long run. Such an observation should not be taken as an argument for a nonhistorical, presentist education. The point is not that we should ignore the past and various traditions of knowledge produced by human beings in a variety of cultures around the world. The concern is that standards of complexity operate to help teachers and students integrate this knowledge and the skills obtained in their study with an understanding of current affairs and the "changing nature of change" in the electronic context of the new century. The subtle ability to make this connection is one of the most important and complicated aspects of standards of complexity.

To integrate these understandings, educators must appreciate the way the world has changed in the last few decades. The rate of socioeconomic and cultural change has accelerated, and in this process identities are no longer as stable, as individuals are bombarded with information to the point of incomprehensibility. Traditional forms of problem solving where variables are limited and are assumed to act in predictable ways are less useful in an era marked by the complexity of multiple causality and, as many have termed it, chaos. With globalization and new forms of information production and communication, individuals in various fields have been confronted with more ill-structured and divergent problems, cultural misunderstandings and value conflicts, and problems of power inequities. It is apparent that a rigorous education would include an understanding of this new context and the forms of knowledge, skills, and cognitive abilities needed to deal with it successfully (Kincheloe, Steinberg, and Hinchey, 1999).

The era of images and pictorial representations ushered in by television has never been adequately addressed—if addressed at all—by schools. Media literacy, a set of skills so central to citizenship and an understanding of the contemporary world, is rarely taught in contemporary schools. When such imagery is not integrated with hypertext and cyber-virtuality, schools fall even further behind cultural and informational change. Those students who are conversant with such dynamics learn about them on their nonschool time. While their insights and abilities often border on genius, there are still many aspects of the contemporary techno-electronic landscape that are missed by such students. Nevertheless, the technological abilities obtained by such students—often eco-



Contexts and Standards of Complexity

nomically privileged with access to computer equipment at home—exacerbate the gulf between the haves and have-nots in alarming ways. Technical standards that emphasize memorization of data are devised as if we are still living in an oral culture. The cognitive and pedagogical processes required by such decontextualized standards hearken back to medieval schooling where students memorized texts because there was so little literature in print.

The printing press made texts far more available and changed our relationship with information. The information revolution made possible by personal computers and hypertext modifies our interaction with knowledge even further. Albert Einstein understood this informational dynamic in the second decade of the twentieth century. When he stepped off his ship on his first trip to the United States, he was bombarded with questions by reporters anxious to engage the genius who had just won the Nobel Prize in physics. One blurted out the question: "Dr. Einstein, what is the speed of sound?" Einstein humbly admitted that he didn't know. Perplexed, the reporter followed up: "You're the smartest man in the world, how could you not know the speed of sound?" Einstein replied, "If I ever need to know it, I'll look it up." The great physicist understood his relation to information in an era with an abundance of printed literature (Kincheloe, Steinberg, and Tippins, 1999). In electronic

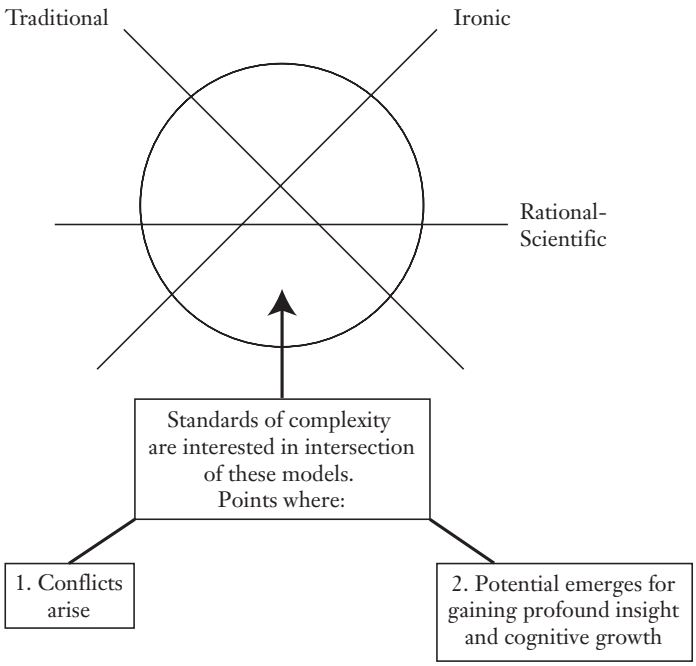
reality, schools must rethink and continue to analyze the nature of our relations with data and its implications for pedagogy and cognition.

In the context of cyberspace, we possess less and less knowledge of the cultural location, the human contributions, and the sociopolitical and economic interests that shape information. In those few classrooms where students are asked who produced the data they downloaded off the Internet the night before, they are often at a loss to answer. They have never considered such a question or its multidimensional implications. Information in such situations has lost its borders; it moves and flows in the nonlinear and instantaneous ways that human thought operates. Traditional forms of knowledge, as organized in books and official interpretations, are undermined in this new context. A subversive element implicitly operates that challenges the informational status quo but at the same time allows power wielders who control informational pipelines to covertly promote data that serve their economic, social, and political interests (Murphie, 1998). Obviously, such a dangerous reality demands new forms of knowledge work, education, and cognition. In an era where the power of economic institutions—especially in relation to control of information—has risen to unprecedented heights, the development of our ability to delineate the hidden interests of the knowledge that cyber-technology provides us so abundantly is crucial to the future of democracy.

Standards of Complexity Involve Students in the Historical Conversation about the Nature of the World

Advocates of standards of complexity maintain that a central aspect of a quality education involves engaging students in the historical conversation about how the world works. Present education often fails to meet this criterion, and technical standards often operate to shield students from such a conversation. Ray Horn in his chapter "A Postformal Conversation about Standardization and Accountability in Texas," in the section on "Texas State Standards," laments the way the public in general is not involved in an enlightening conversation about the way education fits in the larger workings of the world. Engaging in this conversation in standards of complexity does not mean simply understanding the Western dimension of the "great conversation." Although this is necessary, students also must understand Asian, African, Latin American, and indigenous people's contribution to the discourse. Advocates of technical standards have often called for an exclusion of these non-Western aspects of the conversation, somehow couching the inclusion of such historical and cultural knowledge as subversive or anti-American. In a globalized society concerned with issues of justice, such inclusivity is a necessary component of a rigorous education.

A central feature of knowledge work and higher-order understanding involves a detailed appreciation of and



Models of Meaning Making in the Great Human Conversation

participation in human discourse. Outside of this ongoing conversation, knowledge of oneself or of others is virtually impossible. Interpretation and understanding of knowledge and its production process are extremely difficult outside the context of this conversation. In this philosophical context, one of the responsibilities of citizenship involves engaging in and extending the human conversation. Thus, standards of complexity earn a democratic insignia by promoting rigorous methods of citizenship education, and avoiding the patriotic indoctrination that often passes for civics. The public conversation about civics education is as lame as the one about standards. What many fail to recognize is the inseparability of the two topics. Students who understand the worldwide conversation about meaning making are far better prepared to take their places in roles of civic responsibility. They have the background necessary to understand multiple insights about civic virtue, the way the world operates, and various proposals for public policy (Madison, 1988; Zabierek, 1998; Bracy, 1997).

As a rigorous education involves students in this conversation, it proposes modes of categorization to help students make sense of the evolution of the historical discourse. An example of such analysis using the categories of traditional, rational-scientific, and ironic is in order.

Traditional Contributions to the Great Conversation

Traditional ways of understanding the world often are produced within the

parameters of the local culture, the community in which interpreters are reared. Although this dynamic may apply to all meaning makers, the traditional perspective tends to be more localized than others. Such a localness sometimes makes it difficult for traditional contributors to the great conversation to understand those who are culturally or cosmologically different from themselves. In this locality, traditionalists make use of what many refer to as myths or generative stories that in a dramatic manner delineate meanings, worldviews, values, and explanations around which cultures are constructed. Such stories may take on the character of religion, folklore, or cultural epic. In this context, such generative narratives exert tremendous explanatory power and become repositories of meaning.

These local narratives often break out of their geographical boundaries and come to provide meaning, even frameworks, for living for individuals in widely dispersed areas. The Hebrew story of the Exodus from Egypt, the Zoroastrian story of the Great Flood, and the Christian story of the Crucifixion and Resurrection are all examples of traditional generative narratives. In all of these stories and other generative narratives, individuals learn to make sense of everyday affairs and conundrums in light of the meanings inscribed by the ancient episodes. Communities of individuals who know the stories often participate collectively in similar patterns of action around the insights gleaned from the narrative. Not unlike other forms of understanding and their contributions to the great conservation, traditionalism can lead to the exclusion of different ways of making meaning and those who embrace them. Too often in human history, these differences have led to violent conflicts, as interpretive diversity cannot be peacefully negotiated.

Rational-Scientific Contributions to the Great Conservation

Rational-scientific modes of meaning making take shape in their critique of traditionalism. Procedures are developed to discern the reasons things work as they do. If the correct procedure is used, rational-scientific knowledge producers assert, certainty can be achieved and the world can be known in its entirety. Because of the perceived superiority of its reason, the rational-scientific perspective sees its own cultural tradition as preeminent. In its arrogance, it evaluates other cultures and meaning-making systems along its own criterion of reason. From this perspective, the generative narratives of traditionalism are unverified and thus untrue.

Indeed, one of the goals of rationalism is to expose the folly of the narratives and myths and bring the light of truth to the "primitive." The ironic feature of this move from "myth" to "truth," many argue, is that the rationalist position itself develops what many might term *modern myths* around a "fetishization" of a narrow view of reason. Such a rational-scientific narrative exhibits itself as a Grand

Theory that explains everything for all times. We have the power to explain people's lives for them no matter what their culture, rationalists contend, by the use of our scientific method. From this perspective, the great conversation revolves around the origins and development of a Western notion of reason. We can see both elements of the traditional and the rational-scientific included in technical standards.

The Ironic Reassessment of the Great Conversation

Advocates of the ironic reassessment attempt to step back at the beginning of the twenty-first century and take a look at the great conversation from a variety of cultural and epistemological perspectives. In this role, the position maintains an ironic view of all claims to certainty and a final truth, no matter what the source of authority. One of the basic premises of the ironic reassessment assumes that there are many ways of making sense of the world. A second premise is that there is much to be gained from understanding them. Different cultures structure human experience in a variety of creative ways. Interaction with different types of thinking, as previously maintained, is positive because it forces us to deal with "difference." And it is difference that evokes a new consciousness of who we are and where we fit in the world. We come to see ourselves as others see us and in the process discover characteristics that we had previously overlooked.

Ironic reassessors recognize the power of difference to expand people's horizons and understanding of the great conversation. Encounters with these different ways of making sense of the world provide learning situations where students and teachers come to understand previously unrecognized aspects of the world and expose the cultural and cognitive limitations that precluded insight in the past. Thus, reassessors take seriously the types of knowledge produced by a variety of peoples around the world in the past and the present. Such forms of knowledge are especially important for teachers who with such perspectives in hand begin to see the way technical standards privilege only particular portions of the great conversation. Proponents of the ironic reassessment find the conversations among these different perspectives on the world terrifically exciting and maintain their importance to a rigorous education. In the spirit of standards of complexity, students would not simply commit the different points of view to memory. Although they would have to understand a variety of cultural, epistemological, and cosmological systems of meaning making, the more rigorous task of students would involve understanding the perspectives in relation to one another and in light of their own cultural, epistemological, and cosmological vantage points.

With the information access available at the beginning of the twenty-first century, teachers and students can obtain various types of cultural knowledge instantaneously. In such a cir-

cumstance, teachers of standards of complexity can engage students in the great conversation and help them take part in rigorous analysis of differing ways of seeing the world. The traditional narratives with their use of metaphor, personification, and various other creative schemas to make moral, ethical, epistemological, and cosmological points are important features of any quality education—especially one attempting to connect students with human beings and historical conversation about meaning making. Historical and cultural study in this pedagogical context is not a deadening act of memorizing irrelevant data about the past; instead, it is a part of a meaningful quest for new ways of seeing oneself and the world in the effort to explore rigorous and creative conceptions of human possibility.

For example, students can make use of their knowledge of traditionalist narratives to help them structure stories. By adapting, for example, the metaphorical structure of a traditional Australian aboriginal narrative to a particular contemporary conflict, they might push the boundaries of both literary form and social imagination. The wealth of human creativity contained within these narratives from numerous cultures has been concealed by rationalists for too long. Teacher and student analysis of such materials and their contributions to the great conversation can provide unexpected passageways to new perspectives on human life. As active meaning makers, students operating in such a rich analytical context exert personal power over the meaning of these traditional stories and their differing use in diverse contexts.

Students here are aware that the meanings they ascribe to these cultural tales are not final and are always open to different readings. Like most higher-order thinkers, they are comfortable with the uncertainty of meaning, whether it be with myths or with their perspective on the great conversation. They know their perspectives are in process and will probably evolve with the new experiences they will encounter throughout the scholarly journey of their lives. The advocates of the ironic reassessment of the human conversation about the nature of the world are often chastised for their refusal to promote one perspective universally. Human history is not one story but multiple narratives told by many raconteurs with numerous interpretations. History, they maintain, is not simply a story of human progress moving in one direction. It is more *complex* than that.

The ironic reassessment has been particularly critical of the rational-scientific claim to cultural superiority and universal truth. By no means denying the rational-scientific contributions to the conversation about meaning making, the reassessment has trouble with the rationalist's inability to criticize himself or herself, maintain an ironic stance toward his or her own pronouncements, and his or her equation of civilization with a Western model. Such a viewpoint is dangerous in a globalized society, as it incurs understandable resentment to-

ward its proponents. It carries a "we will bury you with the sophistication of *our ways of being*" overtone that will eventuate in negative consequences for proponents. In the context of the debate over educational purpose, advocates of top-down technical standards often operate to protect the rationalist-scientific perspective from any criticism. They also seek to exclude diverse contributions to the great conversation from curricular inclusion. By promoting the illusion of consensus about the nature of the conversation, rational-scientific advocates covertly participate in a knowledge politics that subverts free discussion and democratic participation.

The ironic assessment offers a democratic alternative to an authoritarian politics of truth and curriculum. A viable citizenship education in a democratic society is not promoted by a censoring of the great conversation. Analyzing a variety of differing perspectives is not anti-American but a celebration of democratic values. An understanding of traditional, rational-scientific, and ironic reassessment perspectives, the many forms they take, the many contexts in which they are found, and the multiple influences they exert helps connect students to the lived world (Degenaar, 1995; Theobold and Mills, 1995). Such a connection engages them in unavoidable ethical, moral, political, and civic questions. If education fails to accomplish such a task, simply put, it serves no positive social function. It is our hope that an analysis of the standards debate could help U.S. citizens gain a richer perspective on the role of schooling in a democratic society and enhance everyone's understanding of what it means to be an educated person.

A Rigorous Teacher Education Undermined by Right-Wing Anti-Intellectualism

If teaching is conceived as a complex task that requires a myriad of skills, high-level academic ability is a necessity. One of the few features of the conversation about standards that is simple involves the fact that teachers need better academic preparation, with higher-level academic requirements in both their arts and sciences courses and their professional teacher education. Teachers too often realize that their teaching is not consistent with the academic goals espoused by math, science, social-studies, language-arts, art, music, and foreign-language professional organizations. Too many teachers don't possess the analytical, research, and interpretive skills or scholarly dispositions to move their practice to a higher cognitive level. This is *not* a result of a general lack of ability—they are victims of a system not configured to produce scholars (Regents, 1998; Elmore, 1997).

It is this culture of teacher education that fails to view teaching as a learning profession that standards of complexity seek to change. Teachers' general arts and sciences education too often takes on the form of fact-driven, fragmented survey classes that pass

along a particular body of information as indisputable truth. Little time is provided for analysis of knowledge production, research skills, or insight into the interpretive act. Teacher education too often focuses much of its attention on the nuts and bolts of classroom survival skills, leaving the scholarly role of the educator unaddressed. And in the teaching workplace, teacher time is arranged in a way that grants little if any opportunity to engage in learning—not to mention scholarly research—how to conceptualize their work in different ways. These are not optimum conditions for encouraging teaching as a scholarly activity (Elmore, 1997; Novick, 1996).

The epistemological assumptions of this anti-intellectual model view knowledge as an unproblematic body of facts to be transmitted from college and university professors to teachers and then in a more simplified form from teachers to students. In such a model, top-down standards are designed to specify which facts are to be transmitted. They declare a winner in the struggle to see whose facts win. Such an epistemology views learners as passive; they are containers waiting to be filled with truth. Expertise and knowledge are hierarchical in that the higher-ups do the knowledge work and the teachers do what they are told. Teachers don't need a rigorous education in this model because they simply "deliver the goods" produced by the intellectuals at the top of the hierarchy.

Such a positioning of teachers and students fits well into the dominant ideology shaping life in the United States at the beginning of the twenty-first century. Teachers are viewed as consumers of academic knowledge, middlemen and women who then pass the data along to consuming students. In this consumption model, most everyone consumes and only an elite few produce. The production of expertise and knowledge is in this ideological context the province of the knighted gatekeepers—a process that increases the distance between the haves and have-nots. It is not surprising in this consumption model that schools don't provide teachers with continuing academic experiences throughout their careers—why would it be necessary? Recent studies indicate that very few teachers have sufficient academic opportunities to keep up with the most basic demands of their profession. Standards of complexity would mandate a continuing, rigorous academic immersion for teachers throughout their careers (Apple, 1993; Regents, 1998).

Many of the authors of this encyclopedia maintain that the anti-intellectualism of technical standards cannot be understood outside of a larger social, cultural, economic, and political context. Over the last thirty years, Americans have witnessed a well-planned, persistent, and successful effort to reeducate Americans around issues of race, class, gender, sexuality, and social justice (Gresson, 1995, 2002; Apple, 1996; McLaren, 2000). Education as a sociopolitical institution has been dramatically affected by this reactionary project. Reacting to perceived social, political, cultural, and educational

changes of the 1960s, protectors of dominant power relations sensed an opportunity to advocate a return to "traditional values"; neoclassical economic policy; long-standing racial and gender relations; and a fragmented, "fact"-based, and accountability-friendly public-school curriculum.

In this context, the guardians of tradition promoted a new cultural narrative that played well to white male audiences frustrated with the changes they saw taking place in the world. Via the power of the new narrative, the guardians of tradition engaged these white men and their allies in what might be labeled the recovery of white supremacy and patriarchy perceived to be lost in the civil rights movement and the women's movement. The reeducation process was directly connected to this notion of what had been lost. In this recovery context, Aaron Gresson (1995, 2002) argues that this new white story inverts a traditional black narrative. Because of the dominant culture's portrayal of the economic success of blacks and other minority groups—a portrait much less accurate than represented—many whites believe that nonwhites in the last three decades of the twentieth and the first decade of the twenty-first centuries have greater power and opportunity than whites. This preposterous position contends that this new African American, Latino, and Native American *privilege* has been gained at the expense of more deserving white Americans—especially upper-middle-class white males. The story is promoted in a variety of spheres, including education, and in a number of ways, but always with the same effect: the production of *white anger* directed at nonwhites and women in particular. Such anger works, of course, to divide poor and working-class people of all races and genders, to support the interests of privileged power wielders, and to shape the nature of what occurs in schools.

Such a dominant sociopolitical and pedagogical story induces many whites to see themselves as a people under threat. Sociologists have long maintained that individuals and groups who perceive themselves under threat often react with an attempt to reassess their power and regain their former social position—the phenomenon of status anxiety. This reassertion, of course, takes many forms and many degrees. Manifestations may include modest efforts to reassert one's self-worth by way of private expression of racial disdain ("The parents in the community don't care enough about their children to be concerned with their education") or racial superiority ("So many of the teachers who work in our school don't make a good impression with their loud 'street talk' and everything").

Other examples of this reeducation of the United States may operate more at the level of group recovery, with the passage of "English-only" legislation in heavily Latino areas such as Florida and Arizona and anti–bilingual education and anti–affirmative action measures in California, or battles over multicultural curricula as evidenced throughout the nation (Frankenberg, 1993; Kincheloe, Steinberg,

Rodriguez, and Chennault, 1998; Rodriguez and Villaverde, 2000). More extreme expressions involve the recent dramatic growth of white-supremacist organizations and the terrorist activity associated with some of them—for example, the April 1995 bombing of the Oklahoma City federal building and the shootings at the Jewish day-care center in Los Angeles in 1999. Most Americans, of course, are dismayed by this level of angry white reassertion, yet the perception of whites as *the real victims* of U.S. racism becomes more and more deeply embedded into the white collective consciousness.

Within the conceptual context of racial recovery and the narrative of white victimization, we can make much more sense of the educational politics of this era and the sociopolitical origins of the technical-standards movement. In this era, the guardians of tradition captured the public's educational imagination with their assertion that multiculturalism and white victimization were the causes of a national decline in general and a decline in education in particular. Education, the new narrative maintained, should have nothing to do with issues of social equality and should return to a "true American" view of schooling as a path to individual fortune. The guardians' education narrative told a story of a multicultural dissolution of standards that precipitated a breakdown of authority, discipline, and quality in U.S. schools. The widespread acceptance of this account and the success of the reeducation project set the ideological table for the U.S. public's acceptance of the need for technical standards. Only a new commitment to excellence, they believed, could clean up the problems caused by affirmative action and racial preferences in the educational domain.

David Hursh in "Politics of Education" describes another feature of the reeducation movement and its relation to technical standards. Part of the recovery movement involved the reassertion of a neoclassical economic policy that returned the U.S. economy to the unfettered rule of the "free market." In its neoliberal rearticulation, Hursh posits, this "ideology of the market" helped transform government from an institution in which different groups competed for policies supporting their own interests to a site where policies were constructed solely on the basis of what promoted economic growth. In the pursuit of such a goal, the neoliberal political economy championed the deregulation of corporations and businesses; free-trade policies; and the privatization of education, health, and social welfare.

The consequence of such changes has been to empower the most wealthy while undermining the interests of those in most need. Concurrently, neoliberalism has operated to provide corporations with more political and economic power than previously imagined. The accumulation of this unprecedented power for corporations has set off numerous side effects that many Americans are only now beginning to grasp. In this context, Danny Weil in "Goals of Standards" astutely reminds readers that a key element of

the neoliberal recovery involves a return with a vengeance to the traditional, pre–civil rights and –women's movements role of schooling: "indoctrination and inculcation." The assault of intellectual and moral standards that conservatives lamented often involved the attempt of some Americans to come to terms with the nation's racial, gender, and economic injustices.

Such a coming to terms involved a critique of U.S. institutions—a healthy democratic exercise. Conservative reeducators and corporate leaders beaming with their new wealth and power could not tolerate this criticism of U.S. racism, sexism, and economic injustice. In this context, the imposition of ideologically saturated technical standards that whitewash U.S. shortcomings and glorify the powerful is far more understandable. Imagine the concern of reeducators when Americans concerned with injustice call for rigorous forms of teacher education that induce educators to understand and act on their insights into these sociopolitical aspects of U.S. education. Reeducators want "educational excellence" but not a rigorous education that teaches teachers and students to become critical researchers and knowledge workers with the ability to uncover the origins of educational policies and curricular content.

Alex Caputo-Pearl in "Justice and Education" cuts directly to the political chase:

> Business leaders are often in the forefront of advocating a narrow "core curriculum." Because so much power in the United States is concentrated in the hands of corporations, curricula that engage students in interrogating, dissecting, and "speaking truth to power" are dangerous. So social movement histories, labor histories, civil rights histories, and other histories that deal with the struggles of working people against powerful institutions are often excluded from curriculum.

One of the reasons I have taken such pains in this introduction to emphasize the top-down, covertly imposed nature of technical standards involves these political economic features of contemporary educational reform. Technical standards have not been arrived upon serendipitously but reflect a purposeful, cogent ideological effort to shape the consciousness of the American people—American young people in particular. Indeed, technical standards represent a central step in a larger reeducation movement that seeks to justify unequal power relations among a variety of groups and individuals in contemporary U.S. society.

David Hursh in "Politics of Education" illustrates the impositional nature of technical standards when he asks: "Given the difficulty of achieving agreement regarding standards in various subjects, how do we explain the persistence, particularly by state departments of education, to develop standards and standardized tests and impose them on teachers and students?"

Advocates of standards of complexity explain this phenomenon by plac-

ing it in the context of this larger neoliberal reeducation movement. Hursh's exasperation is understandable: how can it be that despite all of the profound political differences that separated the standards developers in all subject-matter disciplines, we now, without any public debate (or at least without a media-covered public debate), find right-wing technical standards firmly in place in numerous educational venues? Weil in "Goals of Standards" adds to this concern, arguing that imposed technical standards hold teachers and students hostage to an ideology: "For this reason, they serve as a straitjacket that binds both the heart and the mind, for they impose teaching as an act of functional, instrumental control—of technological device—not of compassion, caring, and love. Standards become a means of covertly managing people and knowledge for private ends."

Thus, technical standards are a mechanism for ideological control—they are not to be questioned. For example, differing interpretations are seen as dangerous; teachers who are curious, questioning scholars are undesirables; multinational points of view are seen as anti-American; and inquiries into the inequity of the status quo are represented as an unnecessary politicization of the educational process. In this context, Carter, Howell, and Schied in "Vocational/Work Education" write about the ideology of work-education standards. Of course, advocates of standards of complexity appreciate the necessity of economic activity to a social order. But, unlike technical standards, advocates of standards of complexity maintain that in a democratic society a responsibility of citizenship involves asking who benefits from such economic activity. Amazingly, in the contemporary United States, Howell, Carter, and Schied report, work-education standards do not allow for such questions.

This lack of questioning within technical standards amazes the editors and authors of the encyclopedia. If a measure of the strength of democracy involves the degree to which it allows for self-criticism, then technical standards cannot be viewed as a democratic educational reform. Patricia Hinchey in "Purposes of Education" expresses outrage over the mindless patriotism and sanitized history books promoted by right-wing standards. Weil in "Functionalism" carefully explains how the mind-set that produces technical standards is incompatible with the questioning scholarship necessary to a democratic social order. Emerging in the late nineteenth and early twentieth centuries, social functionalism operated to legitimate the new economic relations that accompanied the rise of industrialism—the first reeducation movement. In this new order, the primary purpose of education involved preparing students for the future needs of business and industry: workers who could "follow instructions, take simple directions, and work swiftly to increase production with maximum efficiency"—and citizens who without question buy into the ideological foundations of industrialism with all of its attendant inequality.

Neofunctionalism, Weil concludes, in the educational guise of technical standards, demands the same things in the twenty-first-century postindustrialist or techno-capitalist economy—the contemporary reeducation movement. This is why questioning is out: it doesn't fit the plan; it throws a monkey wrench into the corporate-led "democracy" of the twenty-first century. When educational analysts such as the editors and authors here call for a rigorous teacher education that produces scholarly teachers as knowledge workers who can construct curricula, do research, and help their students become scholars and agents of democracy, advocates of technical standards are unimpressed. In their anti-intellectualism they see such professionals not as valuable cultural workers in a democratic society, but as troublemakers who might raise uncomfortable questions about indoctrination, democratic control of schools, multiple perspectives, access to information, and the complexity of interpretation.

Overcoming the Degradation of Teachers

In the context of top-down, technical standards, the intellectual nature of teaching is stripped away, leaving only a view of teaching as a practical matter. If teaching is simply a "practical" matter, then educational improvement has nothing to do with rigorous academic standards. It is merely a task of technical manipulation based on a form of educational research concerned with efficiency of organizations—Weil's neofunctionalism. Positioned as dispensers of knowledge, teachers are caught in a systemic squeeze play between two cultures within the educational cosmos: (1) the traditional craft culture of elementary and secondary education, and (2) the research culture of higher education. Standards of complexity recognize this organizational schizophrenia and work to produce a hybrid culture that draws from the benefits of both orientations (Goodson, 1999).

In this hybrid culture, the practical knowledge about managing a classroom would be viewed as important information in preservice and in-service professional education. The position of teachers as knowledge producers about everyday life in the classroom would be validated and protected from educational technicians who discount such knowledge of lived experiences. Such teacher-produced knowledge would be brought to the consciousness of practitioners who would be asked to reflect on the nature of their production. Such reflectivity and self-consciousness would help teachers gain a deeper awareness of the productive process and facilitate their analytical relationship to such knowledge via action research strategies. A concurrent aspect of this move to hybridity would involve integrating teachers into the culture of research. In addition to learning research methods and interpretive abilities, teachers would be encouraged to explore the synergies between the two cultures and the pedagogical usefulness of operating with an appreciation of both

cultures. Such hybridity is central to standards of complexity that respect teacher-produced knowledge and work to lead them to new and challenging scholarly experiences.

A parallel disjunction in the educational universe involves the chasm between "policy talk" and the domain of educational practice with its concerns about daily classroom management, subject-matter decisions, teaching methods, and school organization. Rarely do the twain meet, as attempts at educational reform all too often do not break out of the realm of policy talk. Teachers are simply not a part of this process—it is the domain of "experts," policy wonks, and respected reformers. Such a dynamic does contribute to the shaping of public opinion about schooling, and is especially adept at promoting frightening notions of education in crisis. It typically, however, does not help reconfigure the everyday life, the practitioner perceptions, of schooling. After a few years of fiery passion about a particular policy, the flame is snuffed out, and the everyday life of schools continues in much the same mode. After experiencing a few of these cycles, teachers grow increasingly cynical about educational reform and retreat back into the shells of their individual practices. Again, standards of complexity understand that if they are to work, then they must bring policy and practice together (Elmore, 1997).

I was haunted by a particular paragraph of Kay Fenimore-Smith and Ann Watts Pailliotet's chapter on "Teacher Education." As they describe with pride their innovative teacher-education program at Whitman College in the state of Washington, the authors in 1996 looked forward to the future. They were secure that their program was "contributing a future generation of good people, critical thinkers, compassionate leaders, informed citizens, knowledgeable teachers. . . . Then we started receiving e-mails with headings like, 'The New State Essential Learnings.'" As Fenimore-Smith and Pailliotet quickly recognized, the purpose of the technical-standards dictates was to reduce the complexity of both the teaching act and teacher education and to undermine rigorous teacher-education programs. The quality of the program that was in place was irrelevant; Washington state standards required a reductionistic, technicalized, decontextualized, and dehistoricized approach to teacher education.

Abel et al. in "Texas State Standards" report the same dynamic at work in teacher-education standards in Texas. Classroom teaching is a very complicated act, the authors maintain: "It requires a synthesis of information, method, and 'on-the-spot' critical thinking not easily captured" on a standardized multiple-choice test. Indeed, around the country, technical standards judge teachers' worth and promote forms of teacher education that dismiss the complex intellectual and analytical features of the profession. The diagnostic, purposeful, contextual, interpersonal, scholarly, research-oriented dimensions of teaching are deemed irrelevant. This is

the dumbing-down process I describe in my chapter on "Reductionism." In this same spirit, Thomas and Schubert assert in "Certification of Teachers" that the most "imaginal, creative, and critical" features of the teacher role are removed from consideration. The implications of such reductionism are frightening for the future of U.S. education and U.S. democracy.

In his chapter on "Urban Education," Linné chronicles the discouragement his master's students feel in relation to the New York standards' degradation of their abilities. "We are no longer considered capable enough to be creative or innovative," they tell him. As he listens to their reactions, he tells us that the best and brightest are the ones who indicate that they will leave the profession before they submit to the professional indignities of technical standards. Few other professions would stand for the lack of faith that advocates of technical standards now show for the teaching profession, not to mention the lack of self-direction allowed teachers as a result. As Foote and Goodson describe it in "Regulating Teachers," "Trust in teachers and schools has been replaced by enforcement and compliance as a result of the 'high standards' initiatives."

In the same conceptual temper as the neofunctionalism of Weil, David Hursh in "Politics of Education" develops this notion of teacher control:

> We need to understand how the government and corporations collaborate in reorganizing schools and the workplace in order to control teachers and other workers to promote economic growth and profit. Knowledge as an economic good—its commodification—and the standardization of teaching practices—the end of imagination—are part of an overall societal shift away from seeing people as creative producers of themselves, culture, and society to seeing people as producers and consumers of economic goods.

Marjorie Mayers continues the theme in "Interpretation":

> At the school level, it seems that students are being rated, and as a result teachers are being evaluated. Teachers' own hermeneutic, creative, inquisitive natures for pedagogy and relationship are lost in the simplified discussions about standards and mired in the fear that they must be accountable for how their students perform on measures that are often created miles away from the lifeworld of the school in which they teach. If this is how we want our teachers to work, is it any wonder that they in turn question the nature and purposes of "education" as we have defined it? Living in the knowledge that their own sense of creativity and pedagogical expertise must be seconded to the "experts" who lay out the curricular agenda, teachers find their roles reduced. They feel it, they know it, and so do we.

In light of such assessments it is not surprising that Danny Weil concludes in "Goals of Standards" that technical standards represent not an effort to

improve schooling as much as an attempt to shame and humiliate teachers and belittle public education. In light of such mean-spirited policies, Weil laments in his chapter on "Florida State Standards" that many teachers find themselves "despondent, shocked, and in a state of intellectual and emotional turmoil and despair."

Despite all of the exclusions and degradations they face in their professional lives, many teachers maintain a profound commitment to excellence in their teaching and a deep concern for their students. Though they are rewarded for teaching a fragmented, unproblematized, fact-oriented curriculum, many teachers still struggle to teach for understanding not mere fact acquisition. Such teachers will be helped in their mission by standards of complexity. Such a move will also help their colleagues that have succumbed to the fragmented curriculum of the industrial model of schooling by providing justifications and examples of complex curriculum design, pedagogical practice, and contextualized assessment. In the educational context created by standards of complexity, teachers will be treated as professionals and expected to possess the knowledge, skills, and understandings necessary to teaching a rigorous curriculum. To facilitate teacher ability, numerous learning opportunities will have to be provided for practitioners. It is the duty of colleges of education to develop scholarly and pedagogically savvy preservice and in-service experiences that help teachers gain the ability to reach standards of complexity (Novick, 1996; Regents, 1998; Goodson, 1999).

The Scholarly *and* Practical College of Education

The "how to teach" question is extremely important in colleges of education, but advocates of standards of complexity understand that there are many other questions that must be asked and answered in relation to it. Indeed, it's difficult to speak of how to teach until we have dealt with questions such as why teach, what to teach, who to teach, when to teach, where to teach, ad infinitum. Addressing these questions and their relation to the improvement of teaching involves the rigorous examination of educational actions in relation to cultural, historical, psychological, and social contexts. In particular, a student of education (a teacher) should understand the ways contextual factors shape the way we answer the central questions of education. It is in this analytical process that we begin to move toward rigor in colleges of education.

Without this type of contextual analysis of the various roles education plays in a society and the forces that tacitly shape the form it takes, teachers are ill equipped to take charge of their own professional practice. Outside of such knowledge educational reform, resolutions of high standards, innovative teaching practices are simply cycles of fads. No creative techniques, no technical adjustments, will make up for a lack of understanding of the forces that shape—often unconsciously—ed-

ucational activity. Such information is necessary for a teacher attempting to analyze knowledge production; its relationship to social, political, and economic interests; what is important about it for students in particular situations; and what skills are needed to make sense of it. These are complex acts that demand a rigorous experience in professional education (Davidovic, 1996; Boud and Walker, 1998).

Too often, especially in the most prestigious colleges of education, the connection between the research dimension of the organization and its professional-education apparatus has been severed. Many of the educational researchers operating in such colleges of education see no relationship between the two activities in their own work or the work of the college. Such a disconnection lowers the status of those who work in teacher education and creates the illusion that research and teaching practice have little to do with one another. Thus, many of the scholars best equipped to perform research and exhibit analytical skills never meet the college of education's teaching candidates. The rigorous scholarly abilities necessary to standards of complexity are in a sense hidden away in a vault, removed from circulation in the currency of teaching skills. Two different conversations take place in many of these situations: educational researchers talking to other educational researchers, and practitioners speaking to practitioners. When individuals from these different groups happen to intersect, the discourses are so distinct that communication is difficult. Suspicions and resentments between the groups are inevitable (Goodson, 1999).

Divorced from this research-based, scholarly, analytical context, the education of practitioners focuses on the technical aspect of what is a far more complex activity. Prescriptions for how to teach abound and practitioners looking at their professional educational experiences recoil at the impracticality of the so-called practical methods. The difficulty of changing elementary and secondary school practice is intensified by the tendency of professional education to acculturate teachers into a culture of passivity where decisions about school policy and classroom practice are made by "superiors." This centralization of expertise and decision making and the scholarly deskilling of teachers ensure the perpetuation of the status quo. Top-down technical standards are just one more of a long line of educational reforms that in the name of change reify the status quo. In the context created by such standards, there is no need for a teacher education that cultivates contextual understandings and scholarly abilities. A three-week training course that adjusts teachers to the school district and orients them to their low-skill role is probably all the pedagogical training necessary (Blunden, 1998; Novick, 1996; Berlak, 1999).

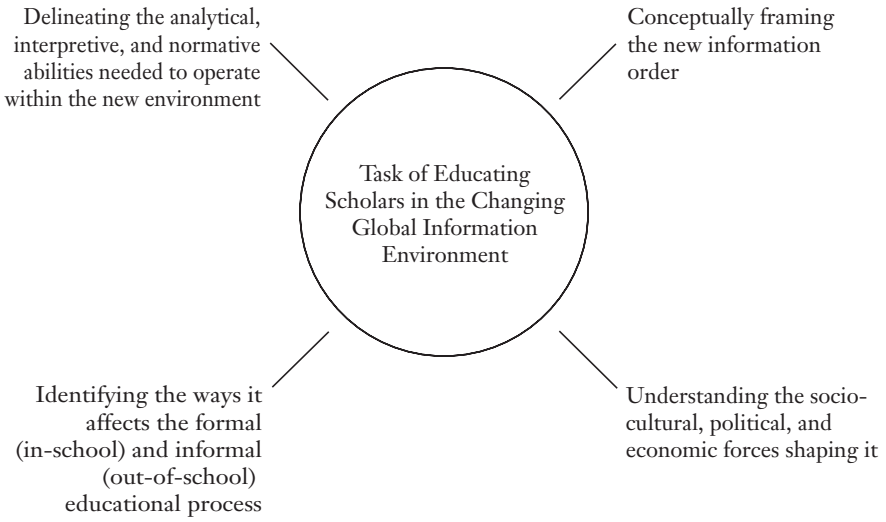
As experts make such a process more efficient, schools shaped by technical standards could probably reduce educational costs by not requiring a bachelor's degree for teachers.

Such teachers might operate more efficiently than college graduates who could tend to foul up the system with questions about educational purpose and ethical principles. As a student-teacher supervisor in the early years of my career as a teacher educator, I watched as the most scholarly and morally sensitive teachers were "cut down to size" or even removed from the program as they inserted their scholarly insights into a rigid, prearranged curriculum. Those student teachers who knew no better, who were tied to simply teaching the fragmented curriculum they were given, were far more successful in such technical student-teaching programs than their more scholarly peers. I was forced to sadly conclude that in the technical system that existed, scholars were persona non grata (Blunden, 1998).

The systems that I observed simply could not imagine a field experience that concurrently cultivated technical classroom-management skills and scholarly insights into the various contexts of education. In addition, I watched as caring, scholarly students and practicing teachers used their moral sense to expand the deskilled role prescribed for them. Making connections with individuals and groups within the communities surrounding their schools, such educators worked to help students suffering from the wounds of life in the late twentieth century. Time and again, I watched as they were punished for their heroic efforts by a system that considered such nurturing work outside the boundaries of professional practice. Guided by standards of complexity, teacher educators understand the multidimensional role of teachers and the synergy created by the cultivation of the practical, scholarly, and moral dynamics of teaching (Novick, 1996).

If colleges of education are to play a role in the creation and implementation of standards of complexity, they must take these dynamics into account. Rigorous colleges of education must carefully examine the relationship between their role in the university and teacher education. Instead of separating the scholarly and professional-education roles, colleges of education must look for the ways they fit together, indeed, how they synergize one another. In a globalized culture in the midst of a knowledge explosion, education scholars in the university must become knowledge workers who understand the implications of these knowledge-related social changes for education in a variety of contexts. In addition to analyzing the implication of these dynamics for the mission of the university and producing knowledge and analytical insights for university educators, education scholars must also consider them in light of teacher education and the reform of both the teaching profession and elementary and secondary schooling.

The more they contribute to the first goal, the better equipped they are to work toward the second. Standards of complexity are intimately connected to both missions of the colleges of education delineated here. The standards of complexity advocated here help ed-



Educational Scholarship in the New Information Order

ucation scholars conceptually frame the emerging new information environment; the sociocultural, political, and economic forces shaping it; the manner in which it affects the formal (in-school) and informal (out-of-school) educational process; and the analytical, interpretative, and normative abilities needed to operate within it (Fischer, 1998).

Thus, the generation of knowledge concerning education in a new global information order serves colleges of education's missions both in the university and in teacher education. Such analysis is inseparable from standards of complexity and the vision of practitioners as researchers, diagnosticians, contextual analysts, curriculum developers, and expert teachers. Combining these two roles of colleges of education and exploring their mutual benefits for each other opens a window of opportunity for an educational reform that seeks improvement in the plethora of operations that make up teaching as a professional activity. In such a context, teachers would be welcomed and integrated into the profession of knowledge production as contributing scholars. This integration is central to achieving standards of complexity.

Standards of Complexity Empower Teachers

Standards of complexity understand that teachers (and their students) are capable of far more sophisticated modes of thinking and analyzing than has traditionally been assumed. Because of this dynamic, the promotion of such standards encourages a bottom-up reform fueled by empowered scholar-teachers. The role of administrators and educational leaders in this model, as Erik Malewski maintains in "Administration," is to provide room for teachers to operate and support for

their professional needs. Central to this support is the creation of a new workplace designed to facilitate teacher scholarly and professional development that is continuing, research based, and collaborative. Teacher educators and educational leaders promoting standards of complexity take seriously the call by many governmental agencies to provide teachers with academic preparation that is superior to that offered previously (Darling-Hammond and McLaughlin, 1995).

Such a teacher education will make sure that teachers possess expert knowledge on the nature of student learning; the scholarly discourses in the liberal arts and sciences; the practical methods of teaching and classroom management; the social, cultural, political, and economic contexts in which education takes place; the forms of assessment that promote and appraise higher orders of cognition; and the philosophical understandings necessary to the development of a sense of purpose in one's teaching. The only way to guarantee that teachers obtain these types of knowledge is to cultivate expertise in research. In the best spirit of Deweyan pragmatism, all teachers should be able to find answers to questions that arise in teaching via both primary and secondary research. Empowered teachers capable of a life-changing pedagogy need these abilities, need the skills of knowledge production to teach for standards of complexity (Regents, 1998; Bridges, 1997; Berlak, 1999).

There are many historical examples of top-down regulations (a.k.a. standards) that served to discipline, disempower, and deskill teachers. In England between 1860 and 1890, educational and political leaders put together a rigid system of control where teachers were paid on the basis of how much data students had committed to memory—a.k.a. content standards. By the late 1890s and the first decade of the twentieth century, educational leaders and teachers rebelled against such disempowerment and called for teacher freedom to diagnose educational situations and to use their judgment to develop pedagogical solutions (Nelson, 1998). A wide range of individuals advocated "autonomy for teachers" to use their abilities as they best saw fit. The top-down requirements for teachers to transmit particular information had failed miserably—as they always do. Advocates of standards of complexity learn this nineteenth-century British and many other historical examples and ground their reform agendas in individual teacher development and responsibility not adhered to external imperatives. Thus, a rigorous teacher education becomes especially important for empowered teachers. (See Lester, "Working with Knowledge.")

Empowered teachers no longer need old models of preservice and inservice training that seek to dictate their work. A complex teacher education helps teachers cultivate abilities that prepare them to take responsibility for student learning. Using their skills as knowledge workers, empowered teachers engage students in a mutual process of research and knowl-

edge production that can be used in particular contexts. Thus, scholar-teachers transcend the limitations of top-down standards that deskill them, take away any need for scholarship, and induce them to ignore the sociopolitical and cultural dimensions of teachers as knowledge deliverers. Technical standards treat teachers disrespectfully and content simplistically (Darling-Hammond and McLaughlin, 1995).

Advocates of reasonable standards would respect teachers enough to engage them in a conversation about why specific standards recommendations would or would not be helpful to them in their professional activities. Such standards advocates would also open a dialogue about the way such proposals view content. In this discourse, teachers and standards makers would discuss the relationship between the assumed nature of content in the standards and teachers' personal assumptions about content (Elmore, 1997). Questions that would naturally arise in such a conversation would include:

1. Is content simply a collection of truths to be passed along to students?
2. Is content produced to be questioned?
3. What is the teacher's responsibility when confronted by a body of content?
4. What are the unstated epistemological assumptions in a body of content?
5. What is the relationship of the content to knowledge production?
6. Do standards imply a particular relationship between pedagogy and knowledge?
7. Does the role of teacher as knowledge worker change the relationship between teachers and content?

My chapter "Subject Matter and Content" expands on these themes.

If we are serious about standards that improve teacher education and U.S. education in general, we cannot allow top-down technical standards to disempower teachers and remove them from the educational conversation. It does not seem wise to mandate unnegotiated standards and then provide teachers no help in accomplishing them. This is the worst of all possible worlds. A central feature of rigorous standards of complexity involves investing in various forms of teacher education that improve teacher scholarship, research ability, and pedagogical skills. From classwork in teacher education to research projects and to mentoring relationships, teachers must be provided with help in their efforts to develop the new rigor. None of this talk of standards of complexity amounts to much if teachers do not accommodate a new, more scholarly role. In the context of standards of complexity, teachers and teacher educators must rethink their own practices, generate new conceptions of student outcomes, and develop pedagogies they have never experienced before. Serious educational

reform demands these ambitious reassessments. They will not take place without large-scale social commitment. It is the task of champions of standards of complexity to make a compelling public case for the need for such commitment (Regents, 1998; Elmore, 1997; Darling-Hammond and McLaughlin, 1995).

With such public commitments, empowered teachers will have the opportunity to reflect on their skills and pedagogical practices and to engage in research in their subject areas and in the communities that surround their schools. In such an empowered context, teachers can extend their personal knowledge of students in order to diagnose their academic needs, talents, and personal concerns. In this way, more customized and caring experiences can be devised for students, especially those who have been previously ignored in the system. Such reflection, research knowledge, and personal insights are then combined with social and pedagogical theoretical knowledge. In this analytical context, empowered teachers formulate their teaching purposes and strategies for attaining them in particular contexts and with specific students (Novick, 1996; de Oliveira and Montecinos, 1998; Goodson, 1999).

In this context fueled by standards of complexity, teachers take charge of constructing their own pedagogies and educational philosophies. They become detectives of new modes of analysis, new forms of knowledge production, and new ways of teaching (Hatton and Smith, 1995). A rigorous teacher education grounded in standards of complexity embraces the following standards:

1. Teachers possess an expert knowledge of the liberal arts and sciences, understanding the historical development of disciplines and the various schools of thought within them. Teachers gain a facility to view the discursive aspects of ways of seeing within the disciplines and how these dynamics affect knowledge production within different fields. Weaknesses of the disciplinary arrangements of knowledge are also understood.

2. Teachers learn to promote the welfare of their students. Teachers are attuned to students' physical and emotional well-being, as they understand the social and psychological contexts that exert an impact on them. Aware of the importance of making connections with students, teachers develop this ability with students from all backgrounds, dispositions, and performance levels.

3. Teachers appreciate the complexity of the ways students learn and develop. In this important domain, teachers analyze educational and cognitive psychology and the ways these disciplines interrelate with teaching and the development of educational goals. Understanding the historical and discursive development of the fields of study, teachers explore cognitive activity and learning in a variety of cultural settings. Teachers are cognizant of the constant interaction between psychological assumptions and the way the classroom is organized. A central feature of such studies involves

a continuing analysis of human possibility and the development of new modes of deploying cognitive abilities and better ways of being human.

4. Teachers become knowledge workers capable of a variety of research methods depending on the context encountered. Thus, they can produce information and access information to help them better perform their pedagogical tasks. Aware of the politics of knowledge and the changing nature of information production in the twenty-first century, teachers develop interpretive abilities to discern the ways various forms of knowledge are produced, who produced them, and the reason for their production. In the new information order of the new century, teachers' facilities as knowledge workers become a basic pedagogical skill. Using such abilities, teachers become aware of the cultural pedagogies produced by television, radio, popular music, the Internet, video games, and movies and their impact on themselves and their students.

5. As part of their role as researchers and knowledge workers, teachers study the community surrounding the school for a variety of reasons. In addition to understanding the social and cultural context that immediately surrounds the school, such research enables collaborative efforts with various community members. The integration of school pedagogies with community and institutional expertise is an important aspect of rigorous teacher activity and educational reform.

6. Teachers are experts in pedagogical methods and strategies for teaching and classroom management. Teachers learn to use different methods in different contexts and with differing students with differing needs. In this context, practitioners learn new educational technologies and how they can use such tools to achieve their pedagogical goals.

7. Teachers achieve profound expertise in the contextualizing disciplines of education. As they learn about the historical, social, cultural, political, economic, psychological, and philosophical contexts that frame education, they develop the important ability to understand the genesis of educational policy and purpose so they can better participate in the public conversation about education. With such skills, they are better equipped both to evaluate the curricula and goals they are given and to join the negotiations about such mandates. Such contextual knowledge is central to their self-empowerment.

8. Teachers become scholars of education in a democratic society, exploring the ways that an unequal distribution of power and resources insidiously undermines the performance of some students. In this process, teachers become scholars of power and justice, as they study the complex relationship between educational policy and the pursuit of social justice. In this context, teachers understand a variety of manifestations of diversity, analyzing the way race, class, gender, religion, ethnicity, and sexuality affect students, teachers, and administrators. Cognizant of these effects, teachers are better able to address the prob-

lems that emerge when these diversities intersect with the school.

9. In light of these expanded abilities and higher expectations, teachers become evaluation experts. As such, they develop and utilize a variety of assessment techniques to better understand the impact of their pedagogy. With such knowledge, they are better equipped to self-criticize and to monitor student learning so as to continuously update, revise, and improve curriculum and instruction. In the larger context shaped by standards of complexity, teachers see such evaluation issues as inseparable from their facility as knowledge workers and researchers. They are simply applying such inquiry skills to what is occurring with their students in their own classrooms (Regents, 1998).

Teacher Empowerment and Epistemological Complexity

In professional education, whether it be for teachers, nurses, social workers, or journalists, knowledge about practice is often recast in the form of guidelines or procedures. Whereas guidelines and procedures may have their place, advocates of standards of complexity understand that proceduralization may simplify the insight in question by decontextualizing it. What is being addressed here is an epistemology of practice and how it differs in technical standards and standards of complexity. In technical standards, the world is viewed as a mechanical entity that is governed by stable and discernible laws. Teaching and the educational process are viewed in this epistemological context as relatively simple notions that can be described by universal generalizations. For example, science reveals to practitioners the correct way to teach and the right way for students to learn. In the context of technical epistemology, these ways of teaching and learning are true in all places and in all times. The role of the teacher is to learn them from the experts and to put them into practice. In this epistemological context, the idea of the teacher as scholar-researcher is nonsense—why bother? The experts will pass the truth about education along to them, usually in a procedural form.

The simplified and decontextualized epistemology of practice employed by proponents of top-down technical standards undermines the professionalism of teacher work. Teachers are reduced to rule-following information deliverers who have no need for scholarly abilities. In various state-mandated, decentralized curricular standards, we can clearly trace the influence of this deskilling epistemology of practice. The purpose of many of these standards-driven reforms is to take away as much professional discretion from teachers as possible. Teachers are told what to do by experts in the state departments of education without any evidence that such government mandates will improve the quality of education. Such a technical epistemology of practice has provided many educational policy makers the justification to take control of the curricula and instructional prac-

tices of schools. Such antidemocratic actions threaten the academic freedom of teachers across the country.

Such simple mandates ignore the complexity of all curricular, instructional, and knowledge-related decisions in education. When top-down standards mandate standardized content and teaching practices for all teachers, they again ignore the complexity of the profound diversity of school conditions and student backgrounds. As teachers ask us over and over again: How can we teach the same material in the same ways to students with different backgrounds and academic skills? These teachers understand what many advocates of technical standards do not: the educational process is too complex to mandate standardized procedures and outcomes. Given the context in which they are operating, good teachers know that they must diagnose short- and long-term student needs and constantly adjust and modify their educational goals and pedagogical methods (Nelson, 1998; Elmore, 1997).

The complexity of teaching demands a teacher education, an epistemology of practice, that is worthy of such conditions. In standards of complexity, teachers must not only understand subject matter in a discursively sophisticated manner but also be able in diverse settings to view such content from the vantage points of culturally and psychologically different students. The ability to accomplish such a complicated task successfully cannot be mandated by top-down technical standards. Standards that do not recognize educational complexity cannot help teachers in such situations, and they cannot prescribe the ways that rigorous teachers monitor students' progress via an ongoing exchange of thoughts and concepts with them. Lost in their epistemological fragmentation of the teaching act, technical standards cannot facilitate teachers' efforts to produce students with the dispositions to become scholars concerned with learning for their own development and the social good. They cannot help teachers understand the social, economic, and psychological factors that shape such dispositions. To achieve excellence in education, teachers must know more and get more help in learning more (Darling-Hammond and McLaughlin, 1995; Novick, 1996; Regents, 1998).

The Danger of Technicalization and Simplification: Undermining Teachers and Harming Students

What we label knowledge—the ways it is arranged and presented, the ways it is taught and learned, and what is considered an appropriate display of having learned it—is inseparable from the way we view the world, the purposes of education, the nature of good society, and the workings of the human mind. Such concerns are connected to issues of power and questions of who is entitled to promote their view of the world (Apple, 1993). Thus, the effort to hold educators accountable—the aim of all the debate over standards—is not some simple

process where experts simply decree the correct instrument to measure the process. Instead, it is part of a larger struggle between proponents of various worldviews, social visions, and conceptions of what it means to be human. Standards of complexity maintain that in order to contribute to the effort to improve education, teachers, students, parents, politicians, and community members must gain a more textured understanding of just what is being discussed here.

The worldview and epistemology that support technical standards assume that absolute forms of measurement can be applied to human endeavors such as education. The teaching and learning processes, advocates of technical standards believe, are sufficiently consistent and stable to allow for precise measurability. The strategies that educators use and the factors that produce good and bad student performance can be isolated and even expressed in mathematical terms. (See my chapter on "Epistemology" for insight into these dynamics.) Therefore, questions based on students' acquisition of selected bits of knowledge can be easily devised, and we can determine a student's and a teacher's competence with little difficulty because such measurements can be accurately made, so advocates of technical standards see little trouble holding teachers accountable. Standards of complexity want to move beyond this simplified model, to help all parties understand the multiple contexts that shape in diverse and sometimes conflicting ways what is going on in such a process. Despite the pronouncements of many experts, the evaluation process is more complicated than simply designating the mastery of a fragment of content as an objective and then determining if it has been achieved (Barrett, 1997; Norris, 1998).

Several chapters in the encyclopedia directly address these concerns with technicalization, standardization, and reductionism. My chapter on "Reductionism" sets the stage, delineating the various ways such a stance undermines our ability to make sense of the educational act. Weil in "Florida State Standards" and "California State Standards" contends that individuals raised on an intellectual diet of reductionism and its accompanying rigidity of thought become immobilized when faced with ambiguity and uncertainty. Patricia Hinchey in "Purposes of Education" adds that this fear of ambiguity is what makes technical standards so attractive. The public buys into "simplistic answers to complex problems," and as long as it does, technical standards will remain extremely popular. Such popularity is enhanced by the tendency of test scores to increase in the first years of any test-driven, technical standards–based reform. Such test-score improvements, Abel et al. argue in "Texas State Standards," take place "with or without real improvement in constructs that the tests are intended to measure."

Reductionism, thus, helps create an illusion of educational improvement in the minds of citizens. Such an illusion helps advocates of technical standards bypass concerns with scholarly

analysis and rigorous academic skills: what Mordechai Gordon in "Philosophical Analysis and Standards" refers to as "those insights and critical abilities that enable [individuals] to become active citizens and transforming agents." In the standardized curriculum that emerges in the reforms of technical standards, Kevin Vinson and Wayne Ross maintain in "Social Studies," scholarly empowerment is traded in for oppression that undermines the best interests of students. Ray Horn extends this theme in his chapter "A Postformal Conversation about Standardization and Accountability in Texas," in the section on "Texas State Standards," arguing that technical standards erase basic questions of power. Indeed, the inquiry into who benefits from the imposition of top-down technical standards is suppressed in reductionistic, standardized, and technicalized education.

But technical standards continue to hold sway in the public conversation about educational reform. One reason for this may involve the simplification process referenced—they are easy for everyone to understand. Simplicity sells, complexity doesn't. "We can keep close tabs on student performance at the school level," advocates of technical standards tell the public. Using our mathematical measurement of student acquisition of content, they continue, we can compare the performances of schools, school districts, states, and nations, regardless of the contextual differences that make them unique. All of these measurements and comparisons are guided by a *faith* in the value of standardized, content-based tests. The faith in the meaning of what is measured by such tests is not grounded in some form of rigorous empirical evaluation (Elmore, 1997).

The idea that such tests measure student achievement or ability and teacher effectiveness is an interpretation—nothing more, nothing less. Obviously, advocates of standards of complexity have no trouble with interpretations—all knowledge is produced by an interpretive process. The problem here is that advocates of technical standards do not reveal the interpretive aspects of the testing process; they present the data and their meaning as scientifically validated truths. A rigorous analysis of how such truth is produced reveals many interpretive (subjective) steps in the process. Standards of complexity insist that the reasons for particular ascriptions of test meaning be provided and claims of objectivity in such an accountability process be abandoned.

Guided by a leap of faith in what tests tell us about the educational process—Is the district wealthy? Are there many formally educated parents? Does every child come from a family whose first language is English? ad infinitum—advocates of technical standards have unleashed a process where students and teachers will be ranked and ordered to an unprecedented degree. Once students are placed in the low rankings, it becomes extremely difficult to get them out. Thus, technical standards along with the testing and the rankings that ac-

company them, are willing to construct an entire educational system—including its purposes, rewards, and punishment structures—on a faith in the worthiness of an unexamined standards production and standardized testing process. In the norm-referenced measurements used in this context, there must be winners and losers.

The fact that there are losers "proves" the system's rigor. Students are pitted against one another in a fierce competition for restricted rewards. As teaching and learning are reduced to knowing *what*, meaning is lost. Tragically, particular patterns begin to emerge involving which demographic groups tend to succeed when schools are arranged in this manner. Often, students who come from lower-socioeconomic and nonwhite homes do not have the benefit of a parent who has a college degree. In homes where parents perform low-skill jobs, families may not see schoolwork as important, unlike upper-middle-class, white, English-speaking students. Studies of the social context of schooling point out that poor and racially marginalized students have learned to view academic work and the testing of technical standards as unreal, as a series of short-term tasks rather than activities with long-term significance for their lives (Barrett, 1997; Thomas, 1998).

Without such compensation or long-term justifications, such students may display little interest in academic work. Their poor performances on the tests and subsequent low rankings are viewed in the context of technical standards as lack of ability and academic failures. Their faith in the testing process moves them to issue a scientifically validated assessment of cognitive inferiority to such students. Such a decontextualized, reductionistic view of the complex process of schooling and student performance is unacceptable—indeed, it is socially dangerous, as it contributes to an unfair, unjustifiable sorting of the haves and the have-nots. Teaching is simplified, teachers are deskilled, and students who fall outside particular "mainstream" demographics are severely punished. Even students from the mainstream are subjected to an inferior, simplified education. Despite the fact that many of them may succeed in the system of rewards, their scholarly abilities are undermined and their view of themselves and the world obstructed. Standards of complexity take on an urgent importance in this social context, as they attempt to rectify the human damage caused by technical reductionism.

In her chapter on "Class and Socioeconomics," Sue Books addresses this human damage. In technical standards, children from economically poor backgrounds are seen not as individuals with special needs, but as "test-score liabilities." Indeed, test scores consistently reflect socioeconomic status. When the process of education is decontextualized and technicalized, the reasons for such tragic consistency are irrelevant. Books labels this dynamic "a politics of not seeing" that allows forces of racism and class bias to continue to inflict

their damage without acknowledgment. Weil in "Goals of Standards" is clear about the way teachers in standards of complexity must respond to such unaddressed pathology:

> It would be perfidious to propose that equity can exist within the institutions of education while economic and social inequality pervades major social institutions as a whole. For this reason, teachers as intellectuals must become teachers as social activists, collaborating and reoxygenating their unions with vision and struggling for a commitment on the part of society to make children the top priority, to preserve and strengthen public education, to provide adequate nutrition and health care to families, to furnish safe schools and neighborhoods, to ensure the development and distribution of fair and adequate funding for public education, to equalize opportunity, and to support local decision making by governing bodies.

With Weil's goals in mind, advocates of standards of complexity begin to analyze how educators specifically go about arranging instruction for such purposes. Judi Hirsch in her essay on "Mediated Learning" notes that in the everyday life of the classroom, students from poverty-stricken, marginalized, and immigrant populations who are bright and intelligent still do not perform well. Even though they participate in classroom activities, they seem not to remember many things that happen in their lessons. Those features they do remember are viewed as "isolated occurrences" rather than one aspect of "a coherent and sequential body of knowledge." Unlike advocates of technical standards, Hirsch and proponents of standards of complexity understand the complicated web that shapes such student forgetfulness. This is not a matter of cognitive inability but a social, cultural, linguistic, emotional, and pedagogical dynamic.

Teachers operating in standards of complexity refuse to write off such students as test-score liabilities. Instead, as Hirsch suggests, they work with these students, helping them construct cognitive structures that will allow them to see the interrelationship of classroom concepts. With such a cognitive infrastructure in place, marginalized students begin to discern frameworks on which they can hang information and concepts developed in class. In this way, memory is facilitated and academic performance improves. But such improvement cannot take place without a recognition of the complexity of the problem and teachers who have the time and ability to help students construct such frameworks. Top-down technical standards not only do not allow for such pedagogies but actually subvert them when empowered teachers attempt to bring them to the classroom. Indeed, such teaching interventions don't fit into the test-preparation drills so common in the curriculum of technical standards. Thus, as Rob Linné concludes in "Urban Education," education for social mobility becomes harder and harder for marginalized students to attain.

Rethinking the Psychological Aspects of Standards: The Struggle for Complexity

Embedded in technical standards is a view of educational and cognitive psychology that attempts to emulate the perspectives and methodologies of the physical sciences. Applied in this human realm without a consideration of the differences in knowledge production in the human (social and psychological) sphere and the physical domain, such a psychology can present a socially decontextualized, highly reductionistic, and dangerous view of consciousness, human agency (the capacity to act), teaching, and learning. Such a view promotes a notion of hierarchical intelligence that, on the basis of these reductionistic studies, divides people into the capable and the incapable. The split shows up in classrooms along demographic fault lines —not in relation to ability differences. It can be found in vocational guidance with the worthy steered into high-skill, high-salaried positions and the unworthy into the unskilled labor pool; and it is observable in educational organizations, as administrators and school-district leaders set purposes and objectives while teachers are expected to concern themselves with simply "how to do it."

This psychological view is grounded in a psychometric philosophy of education that maintains that all learners' abilities can be precisely and objectively measured. Such a perspective unconsciously endorses an epistemological position involving the belief that if something (intelligence, for example) exists, then an expert can measure how much of it exists. Although this might be true in a physical, scientific context, the social, educational, and psychological realm is characterized by a different set of circumstances. Much of what advocates of standards of complexity are interested in does not lend itself to mathematical expression. How do we delineate in numbers a student's disposition to learn? What percentage of a student's performance depends on the social context in which she grew up? The psychometric belief that everything important about humans is measurable actually distorts our understanding of education, as it obscures the assumptions often made about the production of knowledge.

What understandings, for example, do tests on technical-content standards actually measure? Low-level cognitive rote memory of fragmented data? Short-term memory? Do the tests address the connections among ostensibly unrelated concepts? The ability to apply knowledge of relationships to the identification and solution of unrecognized problems? In this context, a central argument emerges concerning the desirability of standards of complexity over technical-content standards. When technical-content standards are established and accountability schemes mandate standardized tests to measure whether the students have mastered the content, a harmful consequence emerges. Evaluation procedures come to drive teacher actions and their curricula.

This is especially detrimental to the quality of education when that which is easy to measure tends to be trivial, low-level abilities; that which is difficult to measure tends to be more complex and important abilities.

Thus, trivial rote memorization is included in the curriculum whereas important reasoning, analytical, applicative features are excluded. In the name of high standards, educational quality is compromised. Teachers are pressured to teach to the fragmented content standards, to emphasize memorization, computation, and busywork in isolation from the passions, complexities, and possibilities of human beings. In technical standards–driven education, schooling becomes a silly game, a trivial pursuit of abstract, unconnected, and inert data. In this oversimplified world, low scores on the standards tests are seen as differences in ability. Subjects are organized as separate from one another, discrete bodies of information unconnected to anything save more information in the subject (Novick, 1996). Learning is viewed like the D Train following the tracks from Brooklyn to Manhattan: there is no room for divergence, for contextualization, for problematizing; the single-minded purpose is to "master" the data provided, to "get to the end of the line." (My essay on "Reductionism" extends these concerns.)

The hierarchical view of intelligence that supports technical standards also champions particular models of the human mind. The rational and *ordered* mind that emerges here is a reductionistic representation of the mind as a computer. Studying the various articulations of technical standards, we see an emphasis on computer-like abilities as the goal of such an education: immediate recall, storage of copious amounts of data, and programmability. Difficult-to-measure abilities such as conceiving the cosmos from new vantage points, revealing that which is not immediately seen in a situation, or viewing oneself from the perspective of other worldviews are not relevant here. The input-output model of the mind reigns supreme in the kingdom of technical standards. Often, when advocates of standards of complexity speak in this dominion, their assertion that promoting educational quality involves an awareness of a far more sophisticated view of the mind falls on deaf ears (Inayatullah, 1995).

Several authors in the encyclopedia are concerned with these issues of cognitive reductionism. In "Learning Theory and Cognition," I examine the basic aspects of formalism and its contribution to cognitive reductionism. I focus on the oversimplified, cause-effect worldview of formalism that breaks a phenomenon into isolated fragments in order to understand the way it works. Unfortunately, in this process, formalism breaks down the intricate web of interrelationships and contexts that provides meaning to the phenomenon without ever appreciating the way significance has been subverted. Danny Weil in "Functionalism" addresses this same dynamic, illustrating the ways that reductionistic formalism has served the needs of

schooling and the economic power interests of U.S. society. In formalism's reduction of the complexity of social, economic, political, cultural, literary, and physical scientific processes, it produced the basis for a psychology of regulation or a managerial science of the mind.

In this regulatory psychology, culturally exclusive definitions of intelligence were developed. Weil describes this reductionistic notion of intelligence in "Goals of Standards" as an undemocratic conception "based on solely Cartesian scientific, rationalistic claims to achievement." He returns to the concept in "California State Standards": "Schools and standardized test designers consequently focused their attention on measuring what they saw as the highest order of intelligence. This one-dimensional definition of intelligence has formed the basis and rationale for the standardized tests given to elementary school students and, by so doing, has defined the method and theory behind instruction." Indeed, we cannot understand the logic of technical standards without appreciating its psychological foundations. Weil adds to our cognizance of these dynamics, as he traces the movement from cognitive formalism to pronouncements of preordained linear stages for learning and knowing, to authoritarian content standards based on such cognitive assumptions.

This reductionistic formalism can be clearly viewed in Jean Piaget's decontextualized view of cognitive development. In this context, Weil documents Piaget's psychologization of learning with its dismissal of the sociological, political, and economic forces that shape the process. Weil also criticizes Piaget's assertion that formal thinking, with its basis in mathematical-scientific reasoning, constitutes the highest order of human intelligence. Weil in all of his essays in the encyclopedia makes reference to Shirley Steinberg's and my notion of postformal cognitive theory. Postformalism transcends much of the language associated with Piagetian and most other theories of higher-order thinking. In this process, it attempts to lay out a cognitive theory that supports an understanding of multiple dimensions of complexity—standards of complexity included.

Whereas traditional cognitive science has associated disinterestedness, objectivity, adult cognition, and problem solving with higher-order thinking, postformalism challenges such concepts: Postformal thinking is not disinterested; it is committed to a democratic system of meaning and the notion of social justice it assumes. Postformal thinking is not objective; it is unabashedly subjective with its celebration of intimacy between the knower and the known. Postformal thinking is not simply an adult stage of cognition; it recognizes expressions of postformalism in children and in adolescents. Postformal thinking does not seek simply to solve defined and structured problems; it is interested in the ability to see problems where others see tranquillity. Instead of focusing on the solution to the puzzle that everyone recognizes as a puzzle, postformal

thinking wonders where the puzzle came from and who recognized it as being in need of a solution. Life rarely presents problems that are well structured like a puzzle. Most of the problems we find in the lived world are of the ill-structured variety. They possess no single, unqualified solution that can be attained merely by plugging in the correct cognitive process (Downing, 1990).

Postformal thinking resituates cognitive theory as an empowering discourse. As Piagetian stage theory became institutionalized and normalized, it no longer served the purpose of freeing individuals from arbitrary descriptions of intelligence. In the case of the Piagetian and other cognitive systems, social decontextualization removed the theories from a dialogical interplay with other cognitive perspectives. These cognitive systems failed to understand that the methods we employ to transmit and to interpret our experiences are socially constructed, because they are inseparable from linguistic forms that are culturally generated.

Individuals do not exist in a decontextualized isolation booth, coldly analyzing the cosmos through thick glass and formulating logical, Mr. Spock–like conclusions about it. On the contrary, what we often designate as reason is always a sociopolitical process of meaning making. Reason is socially constructed, since any references, allusions, or metaphors we might employ and any linguistic symbols we might utilize are social forms that carry with them the baggage of cultural codes, symbols, and signs. Reason and the production of meaning are not simply psychological processes; they are always socially mediated. Social mediation shapes mental action by providing individuals with tools such as language and social conventions (Wertsch, 1991). Contemporary social analysis has subverted the modernist, formalist conception of the autonomously formed individual.

Postformalism understands this social construction of meaning and self and operates on the conceptual foundation it creates. Thus, contrary to the pronouncements of formalism, individuals are not simply intelligent or not intelligent. One's contextual formation as a "self" shapes the way an individual relates to school or the academic functions of school. Regardless of "innate ability," for example, a child who is raised in an upper-class home with two parents with Ph.D.'s is more likely to score better on an IQ test than an individual reared by illiterate migrant workers who never went to school for a full year. Educators operating on the basis of a postformal educational psychology would understand these social dynamics in developing an educational plan for such an individual. They would take into account the complexity of social influences in understanding his or her relation to schooling.

With these cognitive understandings in mind, Weil in the name of standards of complexity confronts the cognitive formalism that undergirds technical standards. Such reductionistic standards, he contends in "Califor-

nia State Standards," assume "that students need an information base before they can think critically and that elementary schools should be a place where this information base is constructed and important skills acquired." Thus, the focus of instruction becomes the memorization of factual data, for formalism contends that students will have the opportunity to think critically at a later time—a time that seems to never arrive. Thus, this formalistic linearity propels the top-down technical standards–driven curriculum. Conceptualizing an intelligent person as one in Weil's words "who is a repository of facts," the advocates of technical standards dismiss educational activities that focus on the use of information or the development of skills to gain and produce knowledge. Thus, technical standards focus on the lowest levels of cognitive activity.

Such a cognitive focus, Bill Bigelow maintains in his chapter on "Multiculturalism," transforms classrooms "into vast wading pools of information for students to memorize without critical reflection." With formalistic cognitive structures and the curriculum that is grounded upon them firmly in place, the public finds it difficult to imagine educational alternatives. When advocates of standards of complexity offer different ways of thinking about the purposes of education, Bob Peterson and Monty Neill argue in their chapter on "Testing," they are often met by citizens who cannot see beyond the reductionistic curriculum and the multiple-choice standardized tests used to assess it. Such structures are viewed in a context shaped by formalism as the only "rational" way, as Hursh describes it in "Politics of Education," to build an educational system.

Such a reductionistic perspective promotes a truncated view of rationality that serves to undermine the democratic control of educational policy. When *rational* has been defined in a formalistic way, the alternative rationalities of postformalism and other ways of seeing are automatically eliminated from consideration. Whereas postformalism, for example, is concerned with issues of "how to think," formalistic pseudorationality constructs a set of technical standards that in the words of Weil in "California State Standards" tells students and teachers "what to think." Thus, as Hursh reminds us in "Politics of Education," under the flag of rationality and getting government off the backs of the people, right-wing technical standards institute new and more insidious forms of governmental intervention and regulation. In her essay on "Purposes of Education," Patricia Hinchey exposes whose political interests are served in this educational arrangement: those already privileged profit the most, whereas the marginalized gain the least. Formalism helps maintain the status quo.

Constructing a Psychology of Complexity

Instead of promoting the mind as memory chips, advocates of standards of complexity embrace a psychology of

complexity that views learning as an untidy process of constructing new *relationships* in the interaction of cultural understandings, the influences of the information environment, familiar stories, idiosyncratic ways of making meaning, and schooling. Teachers aided by a familiarity with standards of complexity work to help construct for themselves and their students insights and interpretations of concepts emerging in the interplay of these various knowledge forms. In the linear, straight-ahead world of technical standards, one must not venture into the land of untidiness, the domain where learning matters for something other than meeting the standards and scoring high on the tests. When teachers and students venture into untidiness, they have "gotten off the subject." Top-down technical standards and the form of testing for retention of bits of data they necessitate actually undermine the struggle for a rigorous, high-quality, equitable, and democratic education. As they promote a conception of the mind that is archaic in light of what scholars from numerous fields have asserted over the last few decades, technical standards promote intellectual poverty in the guise of excellence.

In early psychologist Edwin Thorndike's persisting psychometric model, an entity—a thing-in-itself—called *intelligence* existed within each individual. The quantity of this intelligence each person possessed would shape how well he or she performed both in school and in life. Such a view has been challenged from numerous quarters, including Howard Gardner and his multiple intelligences, minority scholars in their analyses of African American and Latino performances in schools, gender analysts and their examinations of the patriarchal inscriptions on cognitive theories, and constructivist analyses and their studies of concept building and meaning making. Drawing upon all of these analyses, a psychology of complexity is emerging that accounts for the interaction of self and context, the intricacies of memory and concept building, and the value of cross-cultural cognitive insights. It is this psychology of complexity that can provide one of the supports for standards that moves educators to pursue new levels of human possibility (Theobold and Mills, 1995; DiMaggio, 1997).

This complex notion of human possibility is generative, as it seeks deeper understanding. Moving beyond the traditional model of educational and cognitive psychology, a psychology of complexity addresses modes of criticism, creativity, theorizing, imagination, and meaning making (Howley, Pendarvis, and Howley, 1993). Shirley Steinberg and my postformal psychology of complexity attempts to blur boundaries separating cognition, culture, epistemology, history, psychoanalysis, economics, and politics. Without this boundary crossing and contextualization, the psychology that supports technical standards promotes a form of learning disability. Such a reductionistic form of learning manifests itself in an inability to keep up with changes in the worlds of commerce, ideas, scholarship, informa-

tion, and social and technological needs. The types of thinking that were conceptualized and taught in the past are insufficient for the present electronic culture and the hyper-changes that will occur in the first decades of the new century. (See Lester's "Working with Knowledge" for an expansion of these concepts.)

Such dramatic changes in information and human interaction demand a psychology of complexity and a new rigor in the education it grounds. As I emphasize in "Subject Matter and Content," our notion of a psychology of complexity and its concern with cognitive processes and analytical abilities does not imply a lack of concern with content. Any effort to build cognitive processes must be undertaken in relation to a body of content. Human beings simply cannot think outside the boundaries of something to "think about"—what constitutes this object of cognition is always important. Thus, standards of complexity and the psychology of complexity in which they are grounded create an interacting dialectic between content and cognitive processes. As analysts trace this connection, they blur the boundaries that covertly induce educators to fragment thinking processes, content and curriculum, student background, and sociocultural context. Operating in this "connected" domain, the discipline of educational psychology enters into a stage of metamorphosis. Emerging from its disciplinary cocoon, the field begins to grasp the complexity that its narrow vision had eclipsed (Howley, Pendarvis, and Howley, 1993).

Thus, a psychology of complexity makes such a dramatic entrance into the conversation about educational standards that it cannot be ignored. Challenged by this new educational and cognitive psychology, standards talk can never be the same. Understanding the impact of sociocultural, political, and economic contexts, a psychology of complexity exposes the way a more traditional cognitivism has tended to construct ability or aptitude as a quality found among only the privileged few. Viewing intelligence as a biological thing-in-itself (substance), a technicist psychology creates a pedagogy of hopelessness that assigns students to lifelong categories. When a psychology of complexity begins to examine the ways cultural, economic, political, and social forces inscribe both this psychology and the education it promotes, whom we consider capable of learning begins to change. The cognitive sophistication of these students who fall outside the domain of the cultural mainstream—nonwhite, lower-socioeconomic-class, English as a second language, with nonformally educated parents—in this fresh psychological context begins to materialize before newly focused eyes.

Sue Books in "Class and Socioeconomics" is very sensitive to this question of who is considered capable of learning. Reporting on right-wing pronouncements concerning the impact of socioeconomic class on learning, Books disputes the conservative charge that educators concerned with social justice believe that students from poor families cannot learn. Indeed, right-wing advocates of technical stan-

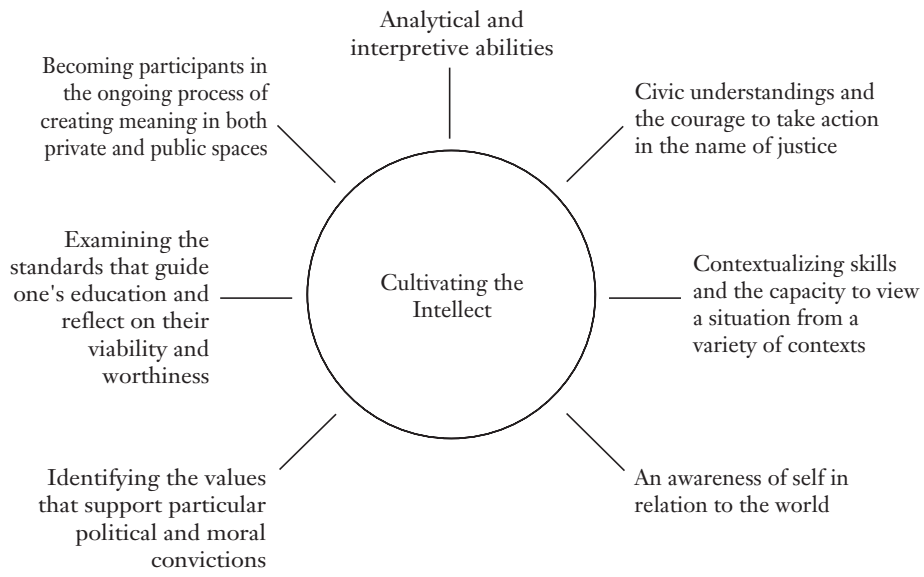
dards must be relying on the appeal of the big lie, for it is proponents of socially just standards of complexity who understand the talents and kinetic cognitive possibilities of marginalized students. A psychology of complexity and postformalism are nothing if not dedicated to validating the cognitive capacities of such students and to overcoming the forces that subvert their efforts to assert their abilities. These concerns constitute the lifeblood of standards of complexity.

In addition, a psychology of complexity changes the standards debate and the quest for a high-quality education with its understanding that not only is cognitive ability expressed in diverse ways but it is learnable as well. Individuals of various ages, backgrounds, and IQ scores can learn conceptual systems that help them make meaning, that facilitate their understanding of and ability to negotiate the world around them. Given this realization, there is no reason for high standards to assume the failure of a large group of students. Indeed, in standards of complexity, a key goal would involve making sure that a far greater number of students performed better in school. One of the standards in this configuration would involve a greater percentage of high student achievement—especially students from low-socioeconomic and nonwhite backgrounds.

Teachers operating in a context shaped by standards of complexity and a psychology of complexity are empowered to help students gain the disposition to learn usable analytical skills in school. Teachers can guide such students in their attempts to focus their passions and direct their energies toward certain academic, social, and individual goals. Although such goals may not seem especially difficult—and they aren't—they are not considered in many traditional educational psychologies and in the technical standards they support. Great hope is generated by a psychology of complexity, as it rejects the cognitive hopelessness of rigid hereditarian psychologies. Not only is intelligence learnable, we contend, but also it can be taught in numerous places: the schools, workplaces, civic organizations, union halls, and any other place where people interact. Standards of complexity induce educators to make use of these places and to enter into collaborative educational relationships with people involved with them. Such understandings can revolutionize the concept and practice of education in this society.

A Psychology of Complexity Cultivates the Intellect and Imagines Higher Orders of Thinking

Our psychology of complexity and the standards it promotes seek not to mandate some minimal form of competence in reading and math but to cultivate the intellect. By the phrase *cultivating the intellect*, we do not mean to imply some feel-good notion of warmth and contentment with happy teachers and students walking hand in hand through fields of zinnias and daffodils. Although we have no problem with happy students and teachers and



Dimensions of Cultivating the Intellect in a Psychology of Complexity

flowers, our concern with intellect involves developing analytical and interpretive abilities, cultivating civic understandings and the courage to take action in the name of justice, teaching contextualizing skills and the capacity to view a situation from a variety of contexts, developing an awareness of self in relation to the world and the ability to identify the values that support particular political and moral convictions, creating the ability to examine the standards that guide one's education and reflect on their viability and worthiness, and helping students become participants in the ongoing process of creating meaning in both private and public spaces (Apple, 1993; Howley, Pendarvis, and Howley, 1993).

If teachers are to cultivate rigorous intellect in schools, then they must understand the concept of higher-order thinking and be able to engage in it. Proponents of standards of complexity must not only call for such abilities, but also model them for all parties involved and *provide assistance* for anyone who needs help developing them. This is necessary for school reform based on standards of complexity to work. Teachers and students in this framework develop their intellect by learning a variety of methods of analysis, interpretation, and research. Using experiences with quantitative and qualitative reasoning, teachers and students develop an intellect that is able to trace the forms of reasoning that produced particular knowledge. Such scholars are capable of discerning how evidence was weighed and arguments developed.

Equipped with such intellectual abilities, teachers and students are much better prepared to critique the information that bombards them. When history is presented to them via

a particular story (or narrative arrangement of events), such rigorous teachers and students will be able to examine the sources the historian used, explore those he or she did not include, expose the values behind particular interpretations of a historical event, analyze the purpose of writing the history in the first place, ask why the school system chose this historical work and not others, and propose other stories and interpretations to counterpose the ones provided. What a rigorous academic exercise and profound display of a democratic form of education this could be: an informed public discussion of the sociopolitical implications of the historical knowledge with which students are provided and a sophisticated analysis of the process that produced it.

In this rigorous context, knowledge would not be simply taken on faith in the printed word or because the textbook author said so, but analyzed by democratic teachers, students, and citizens taking their worldviews and destinies into their own hands. Modes of research and rules mandated by certain forms of analysis would be questioned, and the assumptions behind various rationalities of particular logics would be evaluated. Leaving far behind the low-level skill-and-drill pedagogies demanded by technical standards, a psychology of complexity would promote a higher-order, reflective form of thinking that would encourage teachers and students to monitor and expand their cognitive possibilities. Becoming not only researchers of the world but also researchers of themselves, teachers in this new rigor, new reflectivity, would move students into critical encounters with texts in a variety of domains (Fischer, 1998; Novick, 1996; Madison, 1988). One of the purposes of such textual encounters would involve a heightened self-understanding. William Pinar (1994) provided insight into this cognitive dynamic with his concept of *currere*—the Latin root of the word *curriculum*.

An important aspect of Pinar's *currere* involves the investigation of an individual's inner experience, especially in relation to a particular text. Thus, a teacher aware of *currere* would use the method to explore his or her own or a student's consciousness of the inner world of psychological experience. Thus, in standards of complexity, a teacher would gain the ability to create new pedagogical insights and approaches based on *currere*'s ability to bring to consciousness culturally constructed concepts of self, reality, and the role of education in one's life. Gaining insights to portions of their own and their students' "selves" previously obscured, rigorous teachers would better understand the relation of their teaching to their students' identity formation. In this way, the impact of students' exposure to particular knowledge and their unconscious absorption of certain epistemologies could be assessed.

A cognizance of the ways that power produces identity and self-concept (academic self-concept in particular) provides teachers with part of the information necessary to making in-

formed pedagogical decisions that lead to both a new academic rigor and an extension of such learning to a far broader group of students. In this context of teacher research, educators can gain specific insights into, for example, the way real obstacles such as unequal power, status, and wealth affect students' ways of thinking about their education. These types of understandings are the types of teaching skills that a psychology of complexity and the standards that accompany it advocate. The path to educational improvement—the new rigor, higher-order thinking, and a democratic education where self-directed learners take control of their learning—is constructed by these types of teacher abilities (Zeno, 1998).

Teachers, like students, are capable of so much more than technical standards give them credit for. When teachers are not encouraged to be self-directed learners who can model and teach higher-order thinking, they, like many students, get extremely bored and restless. In my own experience as a public school teacher, I felt tremendous frustrations when my efforts to "go further," to push myself and my students to new levels of human possibility, were viewed as dangerous activities necessitating punishment. Eventually, I left for higher education, where I had a better chance to pursue new ways of thinking, teaching, and being human. I was not alone; academically talented teachers are far more likely to resign elementary and high school positions than the less academically inclined. Academically talented teachers often find their talents punished and their efforts economically unrewarded. Frequently, these "best and brightest" report their inability to cope professionally and emotionally with the anti-intellectual culture of the schools (Howley, Pendarvis, and Howley, 1993).

A psychology of complexity and standards of complexity take on even more importance in this talent-draining context. Such new approaches to education help the talented teachers previously mentioned, as well as all other teachers, gain insight into the assumptions and unexamined beliefs that shape such academically hostile, deskilled workplace cultures. These school climates do not develop accidentally; an entire set of tacit political, pedagogical, epistemological, and ontological assumptions shapes them in particular ways. Standards of complexity engage teachers in an exploration and understanding of the ways school climate is produced, so that the values and beliefs responsible for shaping it can be challenged (Davidovic, 1996).

Rigorous teachers in this context conduct research into the genesis of particular school organizations and climates. They trace the ways such an environment shapes expectations for teachers and students, models of staff development, curriculum, instruction, and assessment. Simply the act of teachers researching such matters changes the culture of the school. Teachers begin to realize that research is not an esoteric skill reserved only for the sequestered experts and that

they as practitioners have much to contribute to the educational conversation. Once teachers get a taste of the empowerment connected to a psychology of and standards of complexity, they cannot return to top-down technicism. The school climate becomes one that rewards and facilitates higher-order thinking for teachers and in turn for students. The cultivation of the intellect and the actions such a process demands become everyday features of the new rigorous school culture (Novick, 1996).

Postformalism Grounds Higher-Order Thinking in Standards of Complexity

It is important to lay out the specifics of postformalism as we address these issues of cognition and higher-order thinking and their relationship to the standards conversation. As delineated in this introduction and by several authors throughout the encyclopedia, postformalism provides a key foundation for standards of complexity. How we define thinking exerts a dramatic impact on both the nature of education and the shape of society. Indeed, as a higher-order form of cognition, postformal thinking can change the tenor of schools and the future of teaching. Self-reflection would become a priority with teachers and students, as postformal educators attend to the impact of school and society on the shaping of the self. In such a context, teaching and learning would be considered acts of meaning making that subvert the technicist view of teaching as the mastering of a body of unproblematized information.

Shaped by postformalism, teacher education could no longer separate technique from purpose, reducing teaching to a deskilled act of rule following and concern with methodological format. A school guided by empowered postformal thinkers would no longer privilege white male experience as the standard by which all other experiences are measured. Such realizations would point out a guiding concern with social justice and the way unequal power relations in school and society destroy the promise of democratic life. Postformal teachers would no longer passively accept the pronouncements of standardized-test and curriculum makers without examining the social contexts in which their students live and the ways those contexts help shape student performance. Lessons in every subject domain would be reconceptualized in light of a critical notion of student understanding. Postformal teachers would ask if their classroom experiences promote, as Howard Gardner (1991) puts it, the highest level of understanding that is possible. Postformal thinking involves:

1. *Etymology* (a study of origins, historicization)—the exploration of the forces that produce what the culture validates as knowledge. Individuals who think etymologically inquire into the sources of their intuitions and "gut feelings." Rarely do we come up with such feelings independently, for most thoughts and feelings are collective in

origin (Bohm and Edwards, 1991; Senge, 1990). Consider, for example, language—it is entirely collective. We may think that our assumptions are self-generated, but typically we get them from the core of culturally approved assumptions. The concept of "thinking for oneself" must be reconsidered in light of these concerns; indeed, without an awareness and understanding of etymology, women and men are incapable of understanding why they hold particular opinions or specific values. Without such appreciations, the ability for reflection and analysis is seriously undermined. It is not an exaggeration to maintain that the capacity for critical thought is grounded in the postformal concern with etymology.

A. *The Origins of Knowledge:* Postformalism induces us to ask what we know, how we come to know it, why we believe or reject it, and how we evaluate the credibility of the evidence. Where did the epistemological and cultural forms that undergird our knowledge originate and gain social certification?
B. *Thinking about Thinking*—the examination of the social construction of consciousness, of our own inner world of psychological experience.
C. *Asking Unique Questions and Problem Detection*—the transcendence of mere problem solving and the subsequent move to problem detection. Postformalists see problems where others see equilibrium and thus gain insight to aspects of the cosmos previously missed. With this understanding, social-studies educators can trace the etymology of what is and is not considered a problem in a cultural setting.

2. *Pattern*—the understanding of the connecting patterns and relationships that shape the lived world. Having in 1992 spent a harrowing night in a small bathroom with three of my children and three dogs seeking shelter from Hurricane Andrew, I am aware of the power of the cyclonic weather pattern that creates unfathomable power. High and low pressure centers developing in differing locations are part of the hurricane system, as they interact with prevailing wind patterns to direct the path of the storm. Each component of the pattern influences the others in a way that is typically hidden from view. One can comprehend the system of a hurricane only by thinking of it as a totality, not as independent, discrete parts. Knowledge of various types is also constructed by invisible patterns characterized by interlocking activities. From our vantage point in the middle of these patterns, they are extremely difficult to identify. Modernist science and education have typically focused on separate pieces of the patterns, many times missing the system itself. As a result, serious problems go unsolved, as mainstream "experts" focus on specific events. No matter how educated individuals become, if they cannot escape the confinements of

formal thinking, then they will be held hostage by unseen patterns. A central dimension of standards of complexity involves learning to discern patterns in the information with which one is confronted. Postformalists must be able to develop this ability in their efforts to sophisticate their abilities as knowledge workers.

A. *Exploring Deep Patterns and Structures*—uncovering the tacit forces, the hidden assumptions, that shape perceptions of the world and the forms that the world takes. Postformalists recognize patterns of exclusion or identify social or historical structures or both that are erased from the curriculum. Without such recognitions, a teacher or student would see a very different, even a reductionistic and fragmented, view of social reality.
B. *Seeing Relationships between Ostensibly Different Things*—developing a metaphoric form of cognition that involves the fusion of previously disparate concepts in unanticipated ways. The concept of mind itself may be thought of as a relationship; in postformalism the patterns of connection become more important than sets of fragmented parts.
C. *Uncovering Various Levels of Interconnection between Mind and Ecosystem*—revealing the larger patterns of life forces. Indeed, life itself may have less to do with the parts of a living thing than with patterns of information, the relations between or among the parts, and the interconnected dance of the living process. Such patterns of life make it virtually impossible to discern where living things end and nonliving things begin.

3. *Process*—the cultivation of new ways of reading and researching the world that attempt to make sense of both ourselves and contemporary society. The way modernist civilization has developed with its Cartesian-Newtonian logic and scientific reductionism has taken its toll on human creativity. All human beings naturally hold the potential for creative thinking processes, but through their acculturation and especially their education, many men and women have lost such a capacity. Many analysts argue that prehistoric peoples lived a more creative existence than we do now—a shock to our modern systems. They devised not only tools and useful objects but creative ornamental and spiritual articles as well. Unlike many workers and students today, they did not follow a mechanical routine. For prehistoric humans, every day was different, new, and possibly quite interesting and exciting. The postformal notion of process attempts to recapture that excitement and interest by devising new processes of perceiving the world, new methods of researching. The postformal process attempts to break the mold, to rethink thinking in a way that repositions men and women as active producers, not passive receivers of knowledge. Such a

notion of process understands that processes of analysis that understand that all information is "in process," a part of a larger process of development, need to be developed. The river that flows by an observer today is a different river from the one observed last year—it is at a different stage in its own process.

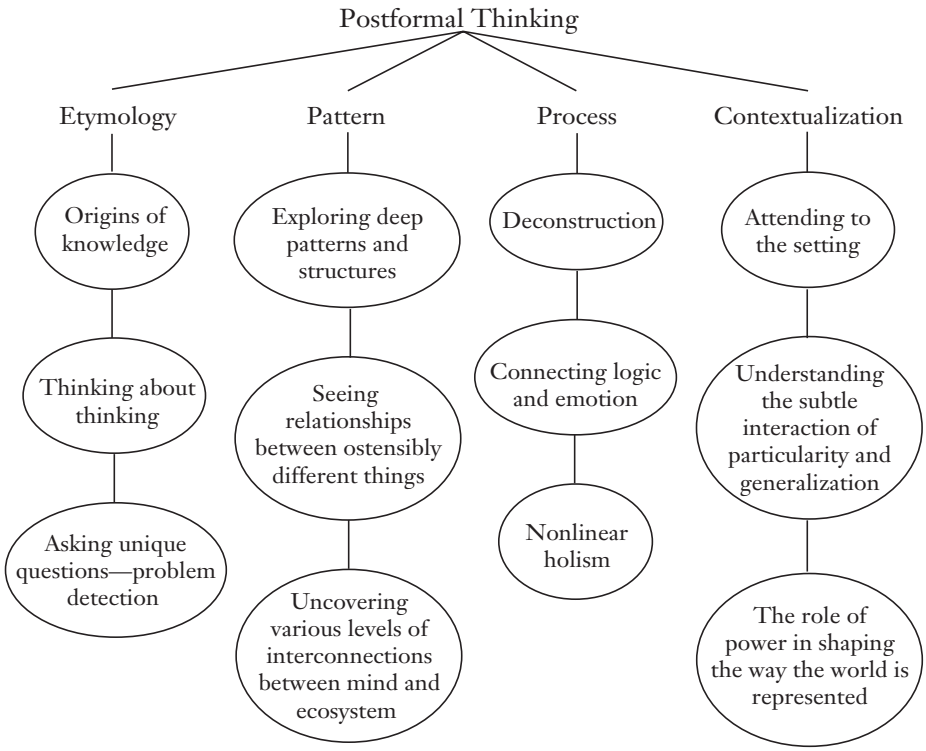
A. *Deconstruction*—seeing the world as a text to be read. Deconstruction can be defined in many ways—as a method of reading, an interpretive process, or a philosophical orientation. Postformalists use all three of these definitions, as they view the world as full of texts to be deconstructed, to be explored for unintended meanings. Scholars who understand this dynamic engage in an active process of discerning the multiple meanings embedded in the various aspects of the world and the impossibility of coming to a final understanding.
B. *Connecting Logic and Emotion*—engaging in a creative process that stretches the boundaries of consciousness. Such a process sees the unity of logic and emotion and the synergistic possibilities that such a connection implies. The process of postformal knowing, therefore, involves emotional as well as cognitive states of mind. As such, emotions are seen as powerful knowing processes that ground cognition.
C. *Nonlinear Holism*—transcending simplistic notions of the cause-effect process. Cartesian formalism accepts the notion of linear causality in the social world, whereas postformalism assumes a *complex* process of reciprocity and holism. Cause-effect rationality in this view may involve the modernist propensity for reductionism and its attendant decontextualization.

4. *Contextualization*—the appreciation that knowledge can never stand alone or be complete in and of itself. When one abstracts, one takes something away from its context. Of course, this is necessary in everyday life, because there is too much information out there to be understood in detail by the mind. If an object of thinking cannot be abstracted, it will be lost in a larger pattern. The postformal thinker is certainly capable of abstraction, but at the same time such a thinker refuses to lose sight of the conceptual field, the context that provides separate entities with meaning (Raizen and Colvin, 1991). For example, modernist schooling typically has concentrated on teaching students the "what" of school subjects. Life and job experiences have traditionally taught us "how" and "why." If deeper levels of understanding are desired, tasks must be learned in the context in which they fit. In light of such a pronouncement, we can begin to see that novice workers are people who possess no specific knowledge of a particular work setting, even though they may come to the situation with everyday knowledge and academic information.

Such "greenhorns" become seasoned veterans only after they gain familiarity with specific social, symbolic, encoded, technical, and other types of workplace resources—that is, the context of the workplace (Raizen, 1989). Thus, postformal researchers become researchers of contexts. As postformal researchers operate, their ability to focus their attention on the contexts in which a piece of data is found becomes second nature. Meaning making is possible only when information is contextualized.

A. *Attending to the Setting*—developing a context in which an observation can assume its full meaning. Information derives meaning only in the context created by other information. Cartesian formalism often fails in its reductionism to analyze setting. Extraneous circumstances so quickly dismissed by modernism often prove to be the keys to new insights that change our view of education, society, or the cosmos itself. John Dewey (1916) maintained that an individual is a sophisticated thinker to the degree he or she sees an event not as something isolated but in its relation to the larger experience of human beings.
B. *Understanding the Subtle Interaction of Particularity and Generalization*—contextualizing generalization in particularity and particularity in generalization. When thinking is captured by the Cartesian obsession with generalization, the nature of the particular is missed when it is treated as a sample of a species or type—it is not itself; it is a representative. At the same time, the life force, the visceral dynamic that makes the general worth knowing, is supplied by its contextualization by the particular.
C. *The Role of Power in Shaping the Way the World Is Represented:* Making sense of the world around us is not as much a product of our own ability to assimilate information as it is the result of the forces of power, discourse, ideology, and hegemony in the larger society. As dominant power insidiously blocks our ability to accommodate, our ability to recognize exceptions, it undermines our attempt to modify our socially constructed understandings of ourselves and the world. Thus, postformalism develops a power literacy that contributes to our conceptualization of how "what is" came to be.

Using these features of postformalism in standards of complexity, teachers can take education to its next frontier. A higher order of thinking that provides us new insights into the complex world that confronts us is a central goal of the democratic education promoted in this encyclopedia. Postformalism allows us to escape the malformations of the surface appearances, to get beyond what are labeled "the facts" so we can act boldly and justly. Here rests the challenging and excit-

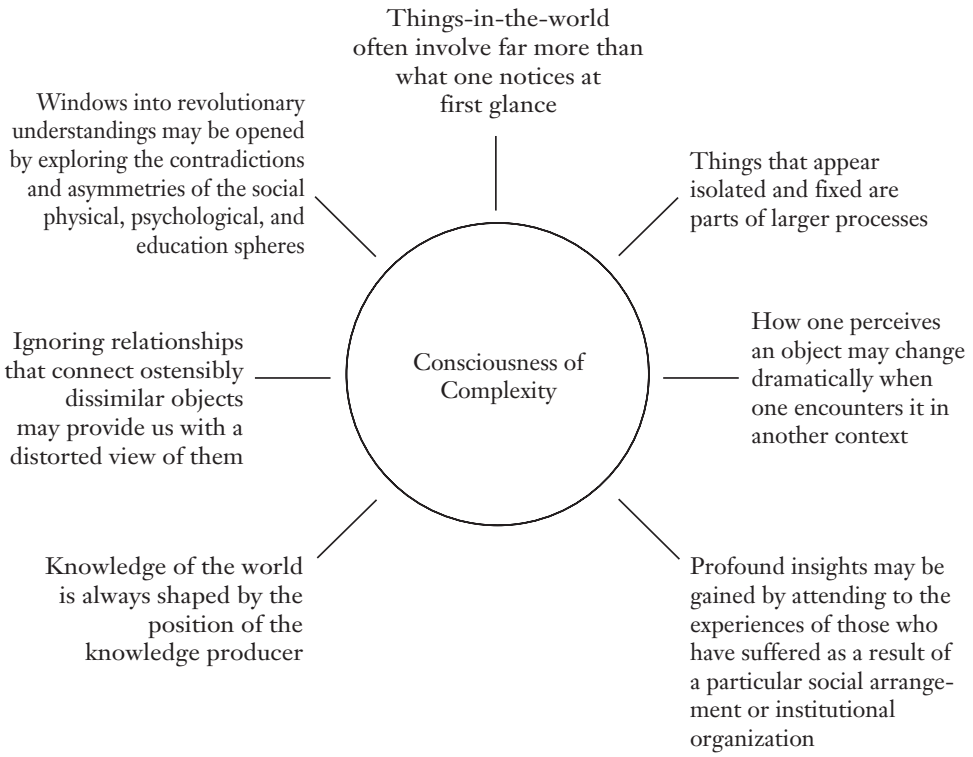


Postformal Thinking

ing future of an education shaped by standards of complexity—a new mode of cognition that empowers democratic thinking and democratic action. We can start to imagine what we can become.

Cultivating a Consciousness of Complexity in the Pursuit of School Reform

A consciousness of complexity involves gaining an understanding of the complexity of the world: that things-in-the-world often involve far more than what one notices at first glance; that things that appear isolated and fixed are parts of larger, ever changing processes; that how one perceives an object may change dramatically when one encounters it in another context; that knowledge of the world is always shaped by the position of the knowledge producer; that ignoring relationships that connect ostensibly dissimilar objects may provide us with a distorted view of them; that windows into revolutionary new understandings may be opened by exploring the contradictions and asymmetries of the social, physical, psychological, and educational spheres; that profound insights may be gained by attending to the experiences of those who have suffered as a result of a particular social arrangement or institutional organization. These features of a consciousness of complexity move us to a



Features of a Consciousness of Complexity

higher-order thinking, a new level of awareness.

Teachers, students, and educational leaders who develop such a consciousness in the struggle for standards of complexity can reshape their scholarly lives. In the process, they can take charge of their own learning and refuse to be passive recipients of knowledge produced within the culture of the technical expert. When teachers gain a consciousness of complexity, they are ready to not only model such a consciousness for students but also assess whether their school districts, schools, and classrooms are working toward such an appreciation of complexity. In this context, they can assess whether districts, schools, and individual teachers are getting the help they need to reach standards based on this complexity. In this, teachers with a consciousness of complexity can design rigorous and creative forms of assessment that go far beyond the grading system and standardized test–based school assessments now being used. Such teachers would view assessment as just one more topic to research. Using their sophisticated research abilities, teachers could ask a variety of questions about the workings of schools that would provide insights into school quality and, most important, practical understandings to be used in improving teaching in specific contexts (Zeno, 1998; Marzano and Kendall, 1999).

One of the most important features of higher-order cognition involves an awareness of and comfort with ambiguity and uncertainty. (See Weil's extension of this concept in his chapter on "Florida State Standards.") Part of a consciousness of complexity involves an awareness of the "complexity of self-production" or the multiple dimensions of our identities. This form of knowledge helps teachers understand where their views of educational purpose and teaching come from, and what sociocultural forces have made them who they are. (Prögler in "Social Studies" expands this theme, contending that the origins of educational purpose are mysterious to many individuals.) With such understandings, teachers and students can consciously decide who they want to be and how they themselves view the teaching, learning, and knowledge-producing processes. In relation to this self-awareness and the accompanying quest for self-direction, a consciousness of complexity involves the analysis of ethical questions of purpose. In this process, those seeking self-direction become focused on the effort to develop a moral compass to help guide their quest for empowerment. Such a compass does not always point in the same direction, as it is a path-finding device aware of ambiguity and the need for contextual awareness.

Thus, the direction it gives—much like the message from the gods that Hermes delivered to mortals—is always subject to interpretation. The actions in the world such interpretations suggest are never clear-cut and obvious. Again, a consciousness of complexity does not mean that we fall into an impotent relativism where courageous action in the world is subverted. Instead, our actions are informed by multiple perspectives and ways of seeing, insights that empower teachers, students, and educational leaders to act in thoughtful, reflective, moral, and just ways. With such a consciousness, teachers can make decisions and take actions that include all participants in the quest for a socially just, inclusive, rigorous, and useful education. The cognitive alienation inherent in viewing things-in-themselves, being directed to isolate objects of study from the larger contexts and processes of which they are a part, is challenged by a consciousness of complexity. The standards advocated here, of course, promote the cultivation of such a consciousness (Karunaratne, 1997).

Teachers and students deploying a consciousness of complexity learn logics of argumentation, modes of developing compelling interpretations, and other ways of thinking more clearly. As teachers work to cultivate such higher orders of cognition, they provide students with alternative modes of meaning making, new universes of choices in the effort to answer questions about the social and physical worlds. Such teaching can begin early in a child's schooling as early-childhood and elementary teachers engage in analytical activities similar to the types outlined in the philosophy for children's programs. Expert teachers operating in connection with standards of complexity using their research skills construct

such rigorous learning activities as a seamless part of the everyday life of their students. At their best, these expert teachers design higher-order academic lessons that are so natural to their students' lives, they don't even know they're learning (Newland, 1997; Reed and Johnson, 1999).

Learning proceeding in this context as a natural part of living sets the affective stage for problem detecting and problem solving, the acquisition of important content, and the exposure of limiting assumptions such as "that's just the way school is" or "there's nothing we can do about it." Operating in such a comfortable setting, students learn to be researchers as a normal part of their lives, and they learn to use abilities acquired in a previous context in a new domain. Contrast such pedagogies and forms of consciousness with those promoted by top-down technical standards. The atmosphere of the school changes, the disposition of students toward learning is revolutionized, the dignity of the profession of teaching is resuscitated, and the educational expectations for teachers and students are significantly raised (Newland, 1997). Schools transmogrify from punitive memory work to an exciting pursuit of a consciousness of complexity. Such a consciousness allows teachers and learners to analyze, understand, and act intelligently in new situations.

Ray Horn in his chapter "A Postformal Conversation about Standardization and Complexity," in the section on "Texas State Standards," does an excellent job of conceptualizing and expanding this notion of a consciousness of complexity. Arguing that teachers in standards of complexity must get beyond a "singular consciousness," he promotes the ability to see multiple realities. This capacity to discern multiple realities is central to a consciousness of complexity. Interpreting the meaning of postformalism in this context, Horn writes:

> The nature of postformal thinking is to broaden our understanding of complex situations by broadening our inquiry into the complex reality of that which we seek to understand. Unlike the myth of formal modernistic thinking, which claimed absolute truth could be discerned, postformal thinking understands that, due to the dynamic ever changing condition of reality, understanding is also an ongoing process.

Picking up on Horn's concern with the importance of perceiving multiple perspectives and multiple realities in a consciousness of complexity, Erik Malewski in "Queer Sexuality" describes one of his lessons on sexual preference and tolerance:

> To my amazement, the logic behind the role of two-spirit people does not, in my experience, placate the visceral reaction of teachers as they consider same-gender sexual activity. Whenever I tell this story, many teachers look at me with a blank face while others give me a look of disgust. My point here is not to make judgments about teachers, other ways of living, or our own sexual activities. My purpose is much more

> than to discuss any of these aspects alone since discussing all of these social practices and more will be required for a queer pedagogy that informs a standard of complexity. I want to suggest that in the structure of our ideas, officially sanctioned forms of thought have the ability to hide other ways of knowing that might lead us to a fuller and richer way of life. Instead of chastising that which we do not understand, I hope to illustrate how standards of complexity reveal the importance of pedagogical endeavors that search traditional forms of knowledge for hidden thought and alternative points of view. It is our job as educators and problem detectors to expose our students to multiple forms of knowing.

Using postformalism and this awareness of multiple realities and the ways of seeing that accompany them, advocates of standards of complexity can not only extend consciousness but also help uncover new, more intelligent, and more ethical ways of being human. As we gain insight into our self-production via a consciousness of complexity, we begin to understand that our present state of being is in part a social and historical construction. Just as such a state of being has been shaped by social action, it can be rethought and reshaped by social action. Advocates of standards of complexity want their consciousness of complexity to move teachers and students to more just and interconnected ways of being.

A key step in this evolutionary process involves freeing ourselves from the machine metaphors of modernist reductionism and technicalization. A consciousness of complexity recognizes the reductionism of viewing the universe as a well-oiled machine and the human mind as a computer. Such ways of seeing subvert an appreciation of the amazing life forces that inhabit both the universe and human beings. This machine cosmology positioned human beings as living in a dead world, a lifeless universe. Ontologically (the study of being), this Cartesian fragmentation separated individuals from their lifeless surroundings, undermining any organic interconnection of the person to the cosmos. The life-giving complexity of the inseparability of human and world was lost, and the social study of people was *abstracted*—removed from context. Such a removal has exerted disastrous ontological, psychological, and social effects. Human beings in a sense lost their belongingness to the world and people around them (O'Sullivan, 1999). A consciousness of complexity and the rigorous scholarship it demands move us back to a more connected state of being.

Applying the New Complexity: Teaching and Learning in Cyberspace

Because they couldn't adapt to a warming climate and the disappearance of their hunting prey, Neanderthals became extinct. Even though they were intelligent, their lack of a language undermined their ability to tell one another about solutions to the

problems caused by the changing climate. A solution found in one place could not be generalized to other places, and the Neanderthals slowly died. The new situation Homo sapiens face at the beginning of the twenty-first century involves a globalized society connected by an ever changing, computerized cyberspace. Mainstream schools have yet to adjust to changing knowledge forms brought about by television and other visual media. The development of a literacy of images or an analytical media literacy has made little headway in most school systems. Cyberspace produces yet another relationship between humans and knowledge.

In computerized cyberspace, knowledge is moved to a more continuous, interactive, and ever changing space. In such a changed context, virtual worlds connect to a wide diversity of human knowledge. Such knowledge would not move into cyberspace preformed but take on new meanings and organizations in light of the uses made of them by various members operating in the cyber-network. Standards of complexity insist that teachers and students be introduced to this new form of knowledge production. In this introduction, they need to understand a variety of communicative media and the impact they make on knowledge production. How do they change communication? Do they produce different forms of knowledge? Do they change who produces knowledge and who receives knowledge? Do the various media create communities—communities that share knowledge, that produce and transform knowledge? Do the different media connect and expand the intellectual powers of their users?

Such questions are central in our new notions of a rigorous education and its attempt to produce knowledge workers and connect schools to the pulse of world events and everyday life. Pierre Levy (1999) argues that virtual worlds of cyberspace with their new forms of knowledge production open new cognitive horizons with unprecedented possibilities for a "collective intelligence." Levy explores various contemporary technologies and knowledge forms and examines them in light of questions of language and cognition. In his analysis of video games, for example, he describes players interacting with simulated landscapes and imaginary universes. Although the games are pursued for their entertainment value, there is something cognitively profound occurring that holds interesting educational implications. The young videogame player is involved with possibly a new form of writing. It is language of interactive images and ideographs (pictures or diagrams suggesting a concept or object without actually naming it) that allows participants to communicate in exciting new ways.

Educational genius might involve the ability to see beyond the entertainment and violence of contemporary video games and to imagine the ways the video-game format might be used to promote rigorous forms of thinking. Using new linguistic and writing tools, educators and students can in-

vent forms of knowledge that expand the present alphabet and the boundaries of what it can conceptually accommodate. Standards of complexity promote this type of rigor and creativity, as they push educators into a new realm of complexity. Levy's notion of a new language—or, as he labels it, a superlanguage—emerging from videogame technology and connected to a worldwide cyberspace might open up new evolutionary possibilities for the human species. Instead of continuing to exist in fragmented, despiritualized, short-term, profit-at-any-cost institutions that devalue humanness, Levy imagines new forms of human connectedness made possible by a superlanguage of cyberspace. Using such ideas, teachers operating in rigorous schools might develop new and exciting ways to use technology.

Advocates of standards of complexity searching for new forms of human possibility are fascinated by thinkers such as Levy. Retaining our analytical and critical edge, we constantly raise questions about the unexpected negative consequences of such ideas. For example, is there too heavy a reliance on the salvation of technology? Is there uncritical relation to notions of progress and technological change? Is there an understanding that continued commercialization of the Internet could undermine the quest for new possibilities and simply perpetuate forms of social control? Nevertheless, it is fun and cognitively challenging to imagine new symbol and sign systems, the unique application of ideographs, new forms of human connection and social organization, and new ways to bring together diverse forms of human thought into a collective intelligence.

Human beings have made similar great leaps in the past—for example, the move from Homo habilis to Homo sapiens with the production of the amazing sign systems and constellations of significations that such a leap demanded. Schools based on technical standards are not facilitating such a move, as they seek to improve the memories of isolated individuals. Advocates of standards of complexity are zealous in their belief that an education—no matter how rigorous—that does not work diligently to connect all students to its benefits is a failure. Levy's notions of collective intelligence and his superlanguage become extremely important in this context. The goal delineated here involves the interlinking of peoples around the world and the resulting improvement of everyone's cognitive abilities caused by the interaction with difference. Intelligence in this context is democratized while being synergized by dialogue. Teachers who are knowledge workers need to consider such ideas in the process of constructing their pedagogies (Levy, 1999).

In this development of new curricula and new forms of education, rigorous teachers distinguish between technological forms that are industrial (for example, a machine such as an overhead projector that has a limited set of functions) and those that are intellectual. The functions of intellectual technologies are open to continual innovation by the people who use them.

For example, computer users exploring cyberspace can dream up uses for it never imagined by its inventors. Such an intellectual information technology used in unexpected ways can extend the intellects of not only its imaginative innovators but also those who come into contact with the new uses of the system. Rigorous teachers aware of complexity can help students develop new educational uses of cyberspace and video-game technologies; more often, however, they will listen to the creative uses that their students imagine. Cyber-relationships could be developed with schools, students, and educators around the world.

Endless possibilities emerge around language education; understanding cultural inscriptions on political, religious, musical, and other forms of human experience; geography; history; and other knowledge domains, as students and teachers develop connections with counterparts around the planet. In such a vision, schools are connected to other schools, social organizations, and information sources around the world. Imaginative educators can visualize the impact such a cyber-connectivity might have on the way schools are organized and managed, and the changes in teacher skills such a new organization might require. Obviously, the need for sophisticated knowledge work with its research skills, analytical abilities, familiarity with a wide range of information sources, and capacity to expose and evaluate the assumptions shaping information accessed would be greater than ever. Advocates of standards of complexity would cherish teachers with the ability to teach such skills to students from diverse backgrounds and interests and who could inspire them to take such students to new levels of complexity and new domains of application (Lee, 1997; Murphie, 1998; Kerckhove, 1995).

The Problems with Technical Standards

Learning and Curriculum	*Educational Politics in a Democracy*
Focus on isolated facts in the process, sacrificing broad understanding of larger concepts	Divert attention from issues of social justice
Acquisition of data takes precedence over significance of information	Do not promote a democratic public conversation about education
Devalue the complexities of meaning making and creative thinking	Advance a right-wing political agenda
Fail to explore the complexity of the social construction of student identity and its impact on learning	Dismiss concerns about academic and intellectual freedom
Dismiss the development of student knowledge production and research skills	Ignore concerns about local control of education

Disregard the relationship between the curriculum and current affairs	Do not provide alternatives to neoclassical theories of free-market economics
Unconcerned with the fragmentation of the curriculum	Support inculcation of interpretations and factual truth
Ignore need to cultivate student disposition to learning	Justify unequal power relations
View curriculum as merely a course of study, not a complex process of teaching and learning in diverse contexts with different needs	Discourage questions about the social, political, and cultural status quo
Not interested in teaching for understanding	Fail to educate active citizens and democratic agents
	Constitute an insidious form of governmental intervention and regulation of everyday life

Critical Thinking/Cognition	*Purposes of Education*
Employ a one-dimensional conception of intelligence based on memory and recall of isolated information	Questions of what is worth knowing seem out of place
Accept linear stages of learning and knowing conceived outside of any social, economic, or cultural context	Fail to ask what it means to be an educated person
Do not construct cognitive infrastructures where students can arrange data in a way that leads to interpretation and application	Focus on a single test score undermines attempts to raise questions about educational purpose
Uninterested in expanding the boundaries of human possibility	Perpetuate the same debates that have characterized education in the United States
View learners as passive receptacles, consumers of information	Erase historical analyses of the ways humans have viewed education in other times and places
Dismiss the variety of ways students learn	Protect students from different worldviews
Do not consider the unique intellectual qualities and cognitive abilities of highly accomplished people	Fail to ask questions of educational purpose in a democratic society
Disregard the importance of identifying and rewarding higher-order thinking on the part of students and teachers	Do not see the community surrounding the school as an object of study
Uncomfortable with ambiguity	Avoid analyzing the complex relationship between educational policy, democratic principles, and egalitarianism

Uninterested in moving students to new cognitive domains	Deny the influence of social and political perspectives on the construction of educational standards Shun analysis of how students might make use of school learning in lived situations Fall into a trap of hyperrationalization, standardization, and reductionism

Educational Quality	*Teachers and Teaching*
Lose sight of complex questions of student intellectual growth	Undermine professionalism of self-directed teachers
Fail to raise the quality of education, as reductionism actually dumbs down classroom activities	Subvert attempts to develop teachers as researchers and teachers as scholars
Destroy innovative, successful educational programs that don't reflect reductionistic views of education	Promote a public view of teachers as incompetent
Promote an anti-intellectualism that eschews skills of serious scholars	Reduce teaching to a deskilled act
Encourage simplistic answers to complex educational questions	Uninterested in the complexity of teacher education—view it as a process of adjusting teachers to schools and standards
Create an illusion of educational reform	Remove teachers from larger conversation about education Unaware of the need for different educational objectives and teaching methods in different sociocultural contexts Unconcerned with tendency of best and brightest teachers to leave the field

Evaluation	*Knowledge Work*
Confuse low student performance with low ability	Ignore the complex process of interpretation in the production of all knowledge
Allow evaluation methods to drive the curriculum instead of what is best for students driving evaluation	Exclude alternative points of view in disciplines of knowledge
Privilege test-score improvement over authentic learning	Promote a reductionistic view of educational research that produces final, singular, and universal truths

Dismiss value of multiple methods of evaluation
Do not question what standards tests actually measure and tell us about the schools and students in question
Have little to say about difficult-to-measure teacher and student skills and abilities

Fail to account for the ways values and paradigms shape knowledge production
Avoid problematizing information included in the curriculum

Shirk analysis of the skills needed to deal with the advent of cyberspace and the new demands it creates for knowledge work
Unconcerned with the politics of knowledge
Devalue the understanding of disciplinary discourses and their relation to knowledge production
Dismiss the importance of the global diversity of human knowledge

Social Justice

Do not appreciate the diversity of students in U.S. schools and the unique needs they bring to the educational process
Dismiss impact of racism, class bias, gender bias, and homophobia on school life
Support the interests of privileged students while undermining the struggle of marginalized students
View poor and marginalized students as test-score liabilities
Unconcerned with role of school as mechanism for social mobility for the poor and marginalized
Fail to appreciate the skills and abilities that disadvantaged students bring to school
Uninterested in understanding the cultural forces that shape students' relationship to schooling

In using this encyclopedia, it is important to connect the issues raised in the individual chapters to the themes developed in this introduction. In this way, readers will be better able to discern the connections among the themes that are developed. We sincerely hope that the ideas about education put forth here will help teachers, political leaders, educational leaders, parents, students, and concerned citizens understand that there are rigorous, democratic, egalitarian, creative, and challenging alternatives to the technical-standards reforms so dominant in the first decade of the twenty-first century.

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ADMINISTRATIVE LEADERSHIP AND PUBLIC CONSCIOUSNESS

Discourse Matters in the Struggle for New Standards of Complexity

Eric Malewski

Inability to commit oneself to or believe in anything that transcends one's private interests leads to a weakening of commitment in family and community and to the self-absorption that is sometimes called narcissism.

—William M. Sullivan

This essay is nothing short of a call for change in how we think and act as educational leaders. There is a need for a new discourse from school administrators that moves beyond the doors of the schoolhouse and outside district lines to initiate a politically effective and truthful public dialogue on the role of education in a participatory democracy. The impetus for this essay comes from the continuing debate over federal and state educational standards. The voices of school administrators rarely enter the discussion, although their positions within public education offer unique insight into institutional processes. Without these voices, the public is often left with too many questions and too few answers, and this remains a dangerous combination; in a democratic society, information should be varied and plentiful. Without a range of ideological viewpoints on standards that includes a discourse from administrators, parents, teachers, and scholars on the role educational institutions should play in our culture, there is an opportunity for those outside the education process to shape the debates with fundamentalist rhetoric that does little to flesh out the full range of issues.

As I listen to citizens, I realize they are bewildered by the discourse of educrats,[1] who offer affectively charged rhetoric on educational standards including phrases such as "quality in every school" and "excellence for all"

but offer little understanding of the underlying structure of their proposals and its impact on the democratic tendencies of educational institutions. The silence from administrators and teachers concerning these affronts to public education is daunting when one considers all that is at stake. Recently enacted reforms, offered in the form of technocratic standards, have a common thread that weaves a larger picture of future educational policy. They draw public education into the service of a capitalist economy with little attention to citizenship development while also separating educational design from the site of implementation.

The result of these reforms is that school administrators no longer work creatively as intellectual leaders and mentors, charged with the education of future civic leaders, but as middle-level managers responsible for implementing orders from distant authorities. If educational leaders do not join in the conversation over standards, the disconnect will continue to grow between the policy of state and federal officials and the desires of administrators, teachers, parents, and academics who work at the level of everyday practice. The concept of *standards of complexity* offers the possibility for a new discourse on educational practices that counters rhetoric that devalues the role of public education in developing actively engaged citizens.

I stress the importance of the voices of administrators in the debates over standards because their unique positions allow them to interact with many constituents, and this interaction can provide a link that fosters public discussion and collective action among citizens. Administrators are the people in our educational institutions who most often associate with teachers, parents, and academics, as well as regional and state officials. If this is the case—that principals and superintendents do hold a critical place in the circulation and distribution of information and, therefore, the production of social relations—then as educational leaders they play a critical role in developing a meaningful sphere for public education.

Attempting to develop a new discourse that is both rigorous and just is a particularly demanding task. It takes reflection, planning, forethought, and strategizing, and it will always contain the uncertainty that comes when one speaks passionately about one's vision. Because of the complexity of discourse, it can be helpful to look at how language has worked to counter technocratic standards in other movements. A discourse of care has become a powerful tool in the battle over health care, where reform and standards have been brought to the attention of the public. A survey of media suggests that doctors have been at the forefront of the discussion of the ways HMOs have altered medical practice, and they have been successful in sharing their apprehensions over insurance practices with the public.

The discourse of care set forth by physicians was built upon a historical image of doctors that remains strong in the hearts and minds of people. Central to this understanding is the

sanctity of a healthy doctor-patient relationship typically associated with general practitioners who take the time to get to know their patients on an individual basis. This conception of health care lies in stark contrast to some of the practices of HMOs, and doctors have developed a discourse for sharing insurance procedures with the public and voicing concern that the doctor-patient relationship is becoming progressively less relevant to patient care. Through a discourse of care that conveys the inviolability of the doctor-patient relationship, the entrance of insurance companies into the doctor-patient relationship has been framed as an unacceptable intrusion into the nation's health care system.

This discourse of care might provide lessons for educational leaders attempting to redirect public education. Doctors have had some success largely because they have conveyed to the public that they are the experts in health care and have as their primary interest the health and well-being of the public. Through a discourse of care, insurance companies are becoming outsiders; citizens are horrified by the thought of an unyielding bureaucracy denying health care recommended by their doctor. The public has been left with an image of health provider specialists, trained by insurance companies in cost-containment strategies, searching for ways to deny doctor-recommended treatment to their clients. This discourse indicates that administrative leaders will need to be more adept at conveying their educational expertise to the public as grounds for authority in the debate on standards. If the discourse doctors used was founded on the sanctity of the doctor-patient relationship, educational leaders must find a discourse that conveys their role as guardians, charged with the protection of teachers and students from those who would provide divisive education.

What I am suggesting is that administrators must illustrate to the public that they have the needs of their children at heart as they lead the schools and districts and that they are trustworthy because of their dedication to the local community. To do so they will need to establish expertise and engage in the struggle over the direction of public education within a historical context that allows the articulation of their concerns. We must be able to pull ideas from the past to develop a meaningful public discourse while also remembering that meaningful public education will always strive for participatory democratic practices. With this framework in mind, the following section offers some insight into the traditional discourse on education and explores the work of two key visionaries in political thought and public education: C. Wright Mills and Thomas Jefferson.

The Traditional Discourse: Emancipatory Humanism

As soon as someone says of the state—
What does it matter to me?—then the state must be reckoned lost.

—Jean-Jacques Rousseau

As the title of this essay suggests, discourse matters. The narratives we use to explain our work give insight into our thoughts on education and the relationships we will have with society. Jean-Francois Lyotard (1984) discussed the importance of these changing narratives for their ability to illuminate the philosophical frameworks that undergird public education and the knowledge it produces. The first narrative model, the emancipatory humanist perspective, provides a traditional understanding of the role of education. In this framework, humans are thought to control their own destiny, and education is seen as offering the possibility of developing the mental capacity to take up a healthy life path. The pursuit of truth is believed to be the key to social progress, so that educators become central to the welfare of society. Teachers and administrators in this model are believed to be visionaries for the general population, responsible for upholding the belief that education plays a central role in removing the weight of ignorance from the public.

The concept of emancipatory humanism is present in vast amounts of political and educational philosophy, and a few writers have well-developed visions for public education within an emancipatory humanistic framework. C. Wright Mills (1959) focused on the role of communication as the foundation for the development of social collectives that could influence government in positive ways. His primary concern was that people were not developing public spaces where individuals with different backgrounds and ideologies could gather and interact to develop an understanding across differences. Education, he believed, was an extant public space where it was possible to counter this trend toward insularity. His vision for education was that people would gather from various communities to learn and discuss new thought and that this context would provide the possibility for communication across difference.

It was also the role of education to refine people's cognitive ability to discuss social issues; this was to be done primarily through the study of history and politics. As people deliberated the benefits and drawbacks of different viewpoints and the consequences of certain actions, Mills felt that well-thought-out opinions would form and some sense of collective understanding would be achieved. It was his understanding that the educational process set the context for democratic action. The key role of education in this process developed by Mills was to help people conceive of themselves as lifelong learners and active public citizens, "capable of turning 'personal troubles and concerns into social issues' which can be publicly examined" (Sehr, 1997, p. 63). Mills understood education as the social force that illuminates the connection between personal troubles and both their causes and their resolutions as they reside in the public sphere.

Almost two hundred years earlier Thomas Jefferson (1787) offered a similar vision of education and felt its main role was to help citizens keep a

watchful eye on government. He felt that education should train people to contemplate current events and government process and this would allow people to monitor government, thereby minimizing infringement on people's liberties. If one was able to reason regarding political issues, one might understand the conditions that created one's own life experience. In order for a democracy to be successful, Jefferson felt the public must be able to reason, precisely because the ability to reason enabled one to understand the importance of public affairs in maintaining a strong nation.

It is interesting that Jefferson's biggest concern, one that he would write about in numerous documents, was that people would pursue private interests at the expense of active involvement in government and decisions that impact the public good. Education was thought of as countering selfishness by developing mass awareness of the importance of monitoring government representatives and engaging in public affairs. Without the understandings of citizenship brought forth in public education, Jefferson was apprehensive that the Republic would be at risk of tyrannical passions based on individual greed and vice. The key to maintaining a strong democracy was to teach people to balance private interests and the pursuit of material goods with their involvement in public functions. Should this balance be disrupted and tilt in the direction of private pursuits, there was the possibility people could become absorbed with their own advancement at the expense of an interest in others, resulting in the inability to become involved in collective activity. Without groups that form in support of democratic processes, Jefferson suspected there would be few avenues for demanding respect for the rights of all people.

Emancipatory humanist discourses, such as those of C. Wright Mills and Thomas Jefferson, offer particular visions of public or mass education. Their bodies of work suggest a profound belief in the ability of people to play a role in government and to reason and debate current societal events. While their philosophical and political frameworks were far from conclusive, they did provide the foundation for public democracy and emphasized the participatory obligations of citizenship. Interestingly, both writers were profoundly concerned with selfish temptations. Mills expressed his concern through his emphasis on the need to communicate, and Jefferson through an unbalanced focus on private property. Both believed mass education had the potential to be the most significant public sphere since it offered a space for both convergence and the development of reason.

The words of these writers remain prophetic in current times. I wonder how either of them would respond to the current state of the nation, in which spending on advertising rivals expenditures for the public education system, and all of higher education has less funding than do corporate trainers and must compete with the growing federal prison system for financial

support. Standards of complexity are a constant reminder to educational leaders that there is a need for public awareness of discourse that plunders support for institutions of the public sphere.

The Encroaching Discourse: The Rising Principle of Performance

Nothing but universal education can counter the notion of this tendency to the domination of capital and the servility of labor. If one class possesses all of the wealth and the education, while the residue of society is ignorant and poor . . . the latter in fact and truth, will be the servile dependents and subjects of the former.

—Horace Mann

Since 1979, the percentage of young workers (age 18–24) earning less than the poverty level has more than doubled, from 23 percent in 1979 to 47 percent in 1992.

—Jason DeParle

To the extent that Lyotard's report on knowledge is correct, narratives that support a fundamentally different approach to education have displaced emancipatory discourse. The performativity model suggests that the emphasis has shifted from truth seeking and the belief that education serves its own ends to an emphasis on optimizing educational performance through technological innovation. The fact that this sounds *natural* to educational leaders only proves how thoroughly this logic has infiltrated our conceptions of educational practice. Lyotard's report suggests the problem with such discourse is that efficiency[2] becomes the rule by which we measure and assign value and that it displaces other considerations that are imperative for education in a democracy.

Performativity is founded in systems theory logic, where the primary concern is increasing the efficiency of the educational arrangement, often resulting in a neglect of the value of the processes and outcomes (Mourad, 1997, p. 121). As Illich illustrated, "all too often a diploma is taken as a sign of competence and fluency as a sign someone has the ability to say something new" (1970, p. 1). When questions of value are disconnected from process, it is believed that if one enters an educational organization and follows procedures, he or she will be able to reason. If we can find ways, educrats tell us, to test children's ability to regurgitate information, we can measure outcomes and the success of our educational institutions. This definition is too narrow, however, because it leaves out important questions regarding what youths do with knowledge and our ability to help them foster new visions for the future.

What we find often among educrats is the assumption that any procedure that allows for optimization is assumed to have a positive impact on schools. This process devalues consideration for the quality of human life, and the performance of the educational system becomes a primary concern, above the effects of organizational change on people. For example, within the discourse on educational standards and the increasing testing of

children for their "achievement," few accountability advocates consider how this competitive process affects the self-esteem and identity development of youths who are at critical points in their maturation. It is not accountability but a particular type of accountability that educrats support as they advocate for technocratic standards.

In a system of accountability founded on efficiency, children who are the most underresourced with many barriers to educational attainment are told they must compete directly with those who come from positions of privilege. Even with ample evidence that high levels of competition can be harmful to the well-being of children—countries that have high-stakes testing continually have to cope with suicidal and maladjusted youth—we do little to question the demoralizing effect of technological forms of standardization. Standards of complexity recognize these effects and demand we expand the notion of accountability to address ethical and moral concerns regarding children who suffer under the current formation of standards. Advocates of standards of complexity ask who will be accountable for the impact of high-stakes testing on our youths and society? How will standards revalue knowledge and cognition among those branded "at-risk" youth?

It seems evident that with increased emphasis on technological standards there comes a shift in the narratives we use to explain public education. Technological standards accept a curriculum in which the emphasis is not on the formation of new ideas and critical thinking as much as on short-sighted problem solving and developing the ability to reorganize preexisting data. Within this framework, educational administrators are no longer valued for their role at the center of institutional life but for their endorsement of curriculums that raise test scores without increased resources. The narratives that circulate on educational leadership reposition administrators as conduits for transmitting prepackaged curriculums and predesigned, failproof pedagogies from government officials to local teachers. As this transformation occurs, the role of educational leaders as visionaries is devalued.

If we are to influence the development of standards and accountability and continue to exercise control over the ways in which we work, administrators must develop new narratives for understanding educational leadership and find ways to share this discourse with the public. If emancipatory humanist narratives have become insignificant in our system of public education, administrators and teachers who understand their role in educating citizens for a public democracy will not be able to address a public concerned with accountability and workforce skill building in the language of a truth seeker. The concept of standards of complexity provides a foundation for developing a new discourse that addresses questions of educational performance and efficiency while attempting to change the assumptions of the discourse.

A Time for New Discourse, New Values

Much of the discourse educational leaders have offered to the public has been within the framework termed by Lyotard (1984, p. 16) "reactionary countermoves." When taxpayers question the work of administrators, we respond with narratives from principals and superintendents who are overworked, overstressed, and underappreciated. We provide reports that illustrate the amount of time administrators spend planning meetings, strategizing discussions, responding to parental inquiries, reviewing policies, and addressing teacher issues. If the state legislature questions our ability, we supply credentials and note the tremendous amount of leadership development we have undergone.

These responses do counter many of the myths regarding our work as educational administrators, but they are constrained by the focus on efficiency. They often accept the terms of the performativity model without offering new narratives that change the assumptions of the discourse. It is questionable whether these intransigent strategies are effective in the long term, since a discourse that accepts the value-laden language of another community does little more than reinforce those values (Pratt, 1995, p. 38). Engaged in a reactionary discourse, educational administrators let those in opposition to public education set the terms of the discussion and do little to further their own ideas. Standards of complexity urge that as visionary people we overcome reactionary tendencies and develop initiatives that address the public in a discourse concerned with, but outside of, the logic of efficiency.

One of the most common and also most dangerous strategies for describing the value of public education has been adoption of the logic of the business world. Public education is seen as valuable because it teaches children discipline; educational institutions employ people and support the local economy; composition courses prepare students to write for the business world; science and technology courses train students to enter a technologically advanced workforce; and foreign language courses are important for communication in a global economy. We understand these as important aspects of instruction, but they are too limited to protect the role of education in advancing a public democracy. Once we employ business metaphors to describe the function of public education, courses that help students develop their own definitions of a meaningful life or help them understand the material conditions of their own existence are expendable; curriculums that do not develop skills directly applicable to the job market are seen as no longer relevant to education.

The danger lies in the assumptions behind the discourse. When educational leaders assume the discourse of the business world, they open their institutions to the functional logic of corporations: workload efficiency and job-frequency testing; downsizing of personnel and staff restructuring;

teaching more students with fewer teachers; replacing teacher-student contact with computerized instruction; and the development of misleading management programs with titles like Continuous Quality Improvement that pressure educational institutions to increase performance on existing resources.

When efficiency becomes the measure by which we judge the value of public education, the entire reasoning behind institutional processes takes a decidedly corporate bent. Within this model it becomes logical to track students into particular types of educational programs based on who is deemed by performance advocates as worth the educational investment. We might find it perfectly acceptable to send certain students to courses on automotive repair, hair care, and typing, while other students are trained in politics, organizational management, and global business, simply because it is cost-effective. While some might see these as extreme examples, within the performativity model and under the pretense of limited resources, this type of education hierarchy already exists. High schools currently offer college-preparatory tracks that remove college-bound students from the rest of their peer group. We witness attempts to differentiate school curriculums based on student's "choice" of career path. While few would denounce the need for curricular experimentation, this system of choice masks the tier-based hierarchy that resides in most school systems; differentiation of school curriculums within the institution preserves the illusion of democratic education by unlinking fundamental elements of democratic learning and teaching from particular educational programs located in the same structure.

As the preceding example illustrates, education shaped by technological standards endorses efficiency principles that also favor the privileged elite along lines of class and, as a result, race and ethnicity. Within efficiency discourse it will always be difficult to argue for access to and the importance of equity in education because it is often uneconomical. It is less costly to test children and channel them into different educational programs than to offer the best possible education to all students. It costs more to provide an array of courses and educational support services for all students based on student needs, regardless of their economic status or regional location. It is more difficult to perform and analyze location-specific research than to perform large-scale studies of the public education system.

The impact of technological standards and the push for efficiency reach beyond administration, affecting the data that educational leaders use to make policy decisions. Scholars who can minimize input (expenditures) in the process of developing output (production of knowledge within education) receive funding for their projects regardless of the value of their work, because the behavior is easily measurable and therefore there is evidence the study was carried out in an effi-

cient manner (Mourad, 1997). Educational research funding procedures endorse technocratic standards but do little to analyze and answer more difficult questions: How do we teach community ethics and individual values: through an open discussion of philosophy, policy, and politics, or through a denial that politics exists in schools (what has been termed the "hidden curriculum")? How do administrators respond to threats from conservative educrats like Lynne Cheney who suggest educators concerned with equity "put learning and teaching . . . into the service of politics" (1992, p. 6), as if education is not inherently political in every aspect, from policy to curriculum? How do we explain to children that education is far from equitable and that parental wealth and social standing are still the most significant factors determining children's success? How do we address access to education and provide scholarship that offers children an understanding of the ideologies and material practices that shape their lives?

Standards of complexity suggest that we must overcome reductionistic research procedures that attempt to generalize about youths while ignoring contextual specifics. Student needs vary drastically based on socioeconomic status of the family and community, the gender and ethnicity of the child, the cultural practices of the family, and the philosophical outlook of administrators and teachers. Standards of complexity demand that we address difference and context within the discourse of educational research.

It seems certain that business discourse has been endorsed by most citizens and politicians, but when administrators and teachers adopt the language of performance, they relinquish their own capacity to define public education and concede educational practices to the rule of the market; one finds the strength of business ideologies in the concept of school choice. While no one in his right mind would deny families educational options, "choice" obscures the reality that those who come from economically empowered families are most likely to be chosen by good schools. "As in the marketplace *writ largé*, what one can purchase depends on how much currency is brought to the transaction" (Lowe, 1993, p. 41). It is clear that there are consequences for adopting narratives that wholeheartedly endorse efficiency. If discourse matters, and there is evidence it does, then we need to be aware of the consequences of the language we use in dialogue with the public. Our words have implications of which we may not be aware. But the silence from administrators can offer hope: There is still an opportunity to enter the discussion, share our thoughts on the role of education in society, and position ourselves as educational leaders who want to make a positive impact on public education.

The Birth of the Educrat

I refer to "the birth of the educrat" not to deny that the discourse of efficiency resides in many localities but to

designate a relatively new phenomenon that offers a tangible location on which to focus an exploration of technocratic standards. In the last thirty years we saw an unprecedented concern for public education along with the birth of educrats, individuals with for-profit ideologies who continually attempt to privatize education and remove the elements that make it a public good rather than restore its place as the center of citizenship education for a vital public democracy. For example, Chris Whittle developed Channel One, a marketing program that guarantees a free satellite, VCRs, and monitors to schools that agree to show ten minutes of programming and two minutes of commercials, almost every day, to more than 90 percent of their students. Then there are all the contradictory discourses of corporations that push relentlessly for tax breaks that strip our schools of their funding while also voicing concern over the lack of an educated workforce. The Bank of Boston, which offered to endow the Boston Plan for Public Schools, was the same bank that paid no taxes in 1987 despite earning a profit of $19.7 million (Molnar, 1996, p. 7). Senator Howard Metzenbaum noted that "it is our corporate CEOs who state than an educated, literate workforce is the key to American competitiveness. They pontificate on the importance of education. They point out their magnanimous corporate contributions to education in one breath, and then they pull the tax base out from under local schools in the next" (Taylor, 1992, p. 23).

Most educrats would rather people not know about the connection between their lobbying efforts and the virtual destruction of the tax base that supports public schools. They want people to believe their discourse of care and benevolence. Corporations would rather educational leaders not know that their total contributions during the 1990 fiscal year would run the nation's schools for less than two hours (Molnar, 1996). If the truth were known, many of the practices of educrats would not be characterized as altruism but as self-interested promotion. After the Valdez oil spill, Exxon developed a video, *Scientists and the Alaskan Oil Spill*, that suggested to the viewer that it "wasn't very harmful to the natural habitat of Prince William Sound" (Molnar, 1996, p. 28).

It is not too difficult to understand that educrats rarely have the interests of public education in mind. More often they demand extended management of educators and accountability to benchmarks not of the educators' creation. They commonly disregard intelligent self-limitation and direction at the local level and create a new industry out of a continual threat of educational crisis that is used to justify expenditures for curricular and management programs by for-profit corporations. Educrats declare the new corporations and their products as indispensable to the crisis and promise to prevent the degeneration of public education through increased curricular engineering, more centralized planning, and more detailed standards for administration.

The technical standards educrats develop assume that local administrators and teachers are inept at understanding that the education of our children can be managed and controlled and that cognitive development can be a predictable, measurable experience. Educrats claim children can be produced at even higher limits if schools would just adopt industrial notions of optimization. But this corporate rhetoric falls short, even when it is evaluated on its own terms. In 1992, Whittle began the Edison Project and attempted to develop a nationwide chain of for-profit schools. The corporation had such faith in the ability of businesses to run efficiently that it promised to run school districts with the same amount of money already allocated while also turning a profit for investors. It failed within two years.

The call by educrats for increasingly detailed and expansive technical standards entails costs to our social system that include inefficiency from an industrial perspective. The costs of keeping testing services and curricular and pedagogical industries afloat, let alone our educational system, will demand the invention of new crises and a significant increase in the surveillance and regulation of school systems to ensure their use of and compliance with the dictates of educrats. This process has already begun in many states that now mandate that schools purchase expensive computer programs if they are to receive additional funding support, regardless of whether the programs have proven beneficial to the teachers. But compliance is promoted in much more subtle ways, for example, when President Clinton, then governor of Arkansas, wrote a letter to school administrators endorsing the "Apple for the Students" promotion or when Ronald McDonald joined Mayor John Norquist in a program for Milwaukee schools on fire prevention (Molnar, 1996). There is a certain irony in the discourse of educrats who at one moment demand efficiency from educational institutions but soon change their position to endorse corporate involvement that draws students and teachers away from the curriculum and toward projects that reinforce the importance of consumerism.

Standards of complexity remind us that as educational leaders we must always assess the ethical implications of our actions. Are we really building a rigorous educational system when teachers and students spend hours and hours involved in promotional programs such as "Apple for the Students" that return less than one cent of every dollar to the school? Is it really ethically appropriate to offer free McDonald's hamburgers to children who join in a fire prevention program when the nutritional value of this product is so low that it would not be served in a school cafeteria? But how else can diversity of thought and opinion be brought into line with the narrow mandates of technical standards?

I realize I have shared only an element of the agenda since it is not only regulation that educrats use to streamline and industrialize public education. Indeed, it is a combination of

bureaucratic tools that in their totality represent attacks on public education for democracy, including market incentives that devalue aspects of education not salable in the economy, strict legislation that removes discretionary aspects of education from the community and people interested in citizenship education, and the elimination of remedial programs that focus on individual needs over standardized education.

Whatever the standard, the aim seems to be not deregulation but reregulation of education that privatizes its democratic elements and fragments a space that was once heralded as the one public location where diverse people in terms of race, class, gender, and spirituality came together to learn from and teach about one another. Since educrats avoid questioning industrial standards and make no effort to revitalize the democratic aspects of education, they leave little room for thought that does not somehow attempt to bring education in line with the market economy. The real challenge, then, is to address educational needs in terms other than those of the educrat.

Standards of Complexity and New Discourses for Administrators

Democracy Depends on Localism: the local areas are where the people live. Democracy doesn't mean putting power some place other than where the people are.

—Douglas Lummis

If educational leaders agree that the discourse of efficiency is too limited for the full needs of the children in public education, an alternative discourse will need to be developed that offers a new set of assumptions. Based on standards of complexity, alternative discourses will move away from assumptions that decontextualize knowledge and suggest that authority should rest within the hands of a few government officials whose policies rarely parallel their rhetoric. Standards of complexity will focus on new processes for developing community standards for education based on local needs. Administrators who endorse the call for a new set of assumptions will need to develop a discourse that conveys the needs of educational institutions attempting to retain their democratic processes amidst the rise of technocracy. This discourse will have to maintain a delicate balance between issues of efficiency and quality while shifting the assumptions that guide the discussion. This process will not be easy since many constituents have embraced the logic of efficiency without an understanding of its implications, and this acceptance will continue unless the logic is moderated by other discourses and perspectives.

Following are four standards for developing a new administrative discourse based on the notion of complexity. The first standard addresses the need to have contextualized educational standards while also noting the need for a loosely coupled coalition that allows for more unified responses to attempts to lure education into the

service of the economy. The second standard recognizes that expertise is a tool that can be used to promote multiple ideological viewpoints that might help or hinder education that encourages democratic understanding. To moderate the effects of professional thought, people at the local level must develop their own knowledge of educational and political theory based on their own experiences as well as book knowledge. From my teaching experience, it is fascinating to consider that the more formal education people have, the less likely they are to address concerns outside of their own attempts to become successful.

Standards of complexity remind administrators that education has historically had many colonizing characteristics and scrutinized any aberrations from what was deemed normal. It was not many years ago that left-handed children were forced to use their right hands while at school. While this is just one example among many, it illustrates that educators' responses to difference have often been to contain it and attempt to redirect or change it. New discourses will shed light on our need to unlearn old curriculums and pedagogies in addition to attempts to relearn less technical and fundamental approaches to our educational roles.

The third standard of complexity challenges administrators to alter our conceptions of cognition and learning. The great philosopher Vygotsky's understanding of intelligence and learning has important implications for practice. If learning does not take place in the mind in the traditional sense, but in the actions that take place in the environment, then social contexts become critical for understanding the educational process. Standards of complexity remind us that these are the spaces of mediation where there are diverse interpretive strategies and forms of intelligence.

The final standard of complexity builds on the shortcomings of emancipatory humanist discourse and offers new frameworks for understanding a viable public sphere. Liberal theoretical understandings of the public sphere as a singular, comprehensive site where individuals set aside elements of themselves that make them unique are misleading and fail to recognize the way democratic activity functions in a stratified society. Nancy Fraser (1997) suggested we reconsider evidence that those who have been excluded from dominative public spheres develop their own counterpublics so that *the* Public described by Jefferson and Mills was never the Public at all, but one of many publics, although probably a more expansive one.

Standards of complexity call on administrators to recognize that public spheres, such as education, are always undergoing change. Where historically domestic violence was considered a private concern, it was the discursive contestation and the expansion of new feminist discourse that came from women's counterpublics that brought a shift in understanding. Domestic violence went from being a private issue between a woman and her husband to a systemic problem of patriarchal societies (Fraser, 1997).

Standards of Complexity

Complexity Standard No. 1: Remember Local Cosmopolitanism

Many educrats argue that too much local control of schools will result in a certain parochialism or fundamentalist thought. State and federal educational proposals are inherently parochial, however, because they express the vision of a small group of people even if they claim their efforts are in the best interests of citizens. If there is agreement that standards reflect the educational vision that makes up every region and culture, then standards of complexity are unique because, from a global perspective, they account for a sense of place and local understanding. Those who develop standards for a specific locality are less likely to be egotistical in their thoughts and self-centered in their efforts because there is humility in not pretending to know what is good for everyone.

There is a legitimate concern that claims to standards are also claims for transcendent truth, but this conceptualization can be countered with an understanding of how the realities that reside within different educational communities might also link in support of differing visions of education. It is my belief that simultaneous efforts to oppose technocratic standards can act as an affirmation of local perceptions of education and reaffirm local control. Common concern over efforts to draw education into the service of consumerism can weave cross-cultural agreements and allow for loosely coupled coalitions that retain a pluralistic framework that stops short of educational relativism. Standards of complexity remind us that connection can be made freely not only on a local basis, but through a discourse of difference across local communities, regional coalitions might be enacted at moments of shared opposition to the pressure of educrats. For educational administrators, connection with the needs of local people is crucial to an understanding of heterogeneous communities.

Complexity Standard No. 2: Recollect and Remember

The discourse of efficiency places little value on recollecting and remembering the past, but as the discourse of emancipatory humanism illustrates, there is a historical context for the struggle over public education and the development of democratic practices in citizens. Standards of complexity incorporate the importance of organic memory, or finding value in what we know and understand of our local community. An exercise I use in my undergraduate courses supports this point.

During the beginning of my courses, I hand a note card to all the students and ask them to answer a simple question: Where do you see yourself in five years? Students ponder my inquiry for a couple of minutes and then provide a written answer. I say nothing and collect the cards. At the next class session, I again hand out note cards and ask the students to an-

swer another question: You find you have only a few days left to live, what do you do? A few students laugh and share a comment about traveling to a distant country or going to see a national landmark before providing an answer to my second question.

The responses I receive are amazing. Students who come from working-class backgrounds more often than not answer the first question with a vision of a future family and discuss the importance of their parents, sisters, brothers, and lifelong friends. For example, a working-class African American male who was a first-generation college student wrote: "I just got off the phone with my mother, she is baking pies again. My sister has finally got her act together and went back to school. I have my arm around my wife, she is sleeping on my shoulder. I just heard something. It was our little girl. She is asleep upstairs and has a cold. I have finally done it, I am in graduate school and working on my thesis." Students from upper-class families or families with higher education often provide a different answer. There is little discussion of family or friends, especially among male students. Instead, they offer a summary of their resume. They talk about the positions they will hold or the influences they will have on other people once they obtain the right credentials. An upper-class Caucasian female explains: "I will be in management somewhere and have a staff of over sixty people. I live in a large city and hopefully marry a successful doctor or lawyer."

Yet when the students respond to my second question, they all write about going to see their families and spending time with friends. The emphasis is not on careers or earnings but on surrounding themselves with those who know them well during their last days. During the third class, I ask students to reconcile the differences between their five-year and three-day goals. What is interesting about the discussion is that students who typically feel disadvantaged in society are the ones who hold the privileged positions within the conversation. Most often, their everyday discourse includes emphasis on and recollection of their childhood and the ethics and morals they learned as children. Students from privileged backgrounds more often have incongruent long- and short-term values.

As we debrief from this exercise, I offer a Foucaultian interpretation of socialization and power. We discuss why students from families with more education often experience more incongruence between their values for the immediate and for the distant future. We often find through discussion that there is a certain investment in the formation of self in ways that are viewed as successful by others. Because of these principles that represent success, people actively invoke and constrain certain behaviors that are seen as successful, even if these behaviors remove them from the environmental context that includes the people they care about the most. If I ask students where they learned this notion of suc-

cess, they suggest it is everywhere, and that does seem the case.

The success discourse students use in my course is linked closely with the discourse of efficiency. There is a narrow focus on education as a gateway into the upper tiers of the workforce, but there is little discussion of citizenship and public affairs. I share with students that to the extent they believe and support such discourse and self-monitoring, they have given power over their lives to truths they have neither developed nor adopted after critical reflection. But these truths are never total, and students who offer a different interpretation of their long- and short-term goals suggest that what we value is often found in a process of recollecting and remembering.

Standards of complexity suggest that administrators must broaden the notion of curriculum to include our living memories and revalue these aspects of children. These include stories about family, friends, and neighbors that integrate aspects of both the future and the past. Far from irrelevant, these stories constitute the roots of identity and community. In contrast, technological standards offer a different understanding of memory, one that invokes thoughts of students taking exams to prove their worth, the ticket to the next level of education and the possibility of upward mobility. This is the memory that my upper-class students value in my exercise. They have been taught to liberate themselves from any notion of community and pursue all that progress has to offer. The problem is that in pursuit of mobility and the chance to choose their own communities, these students find they have no community at all. My working-class and first-generation students, for the most part, while believing in the value of education, have not let the performativity principle completely direct their values.

Complexity Standard No. 3: Realize Interdependence

Vygotsky recognized that people do not develop autonomously but through a series of interconnections that situate cognition among a weblike pattern of social interactions (Kincheloe, Steinberg, & Villaverde, 1999). This perspective on cognition has dramatic implications for standards of complexity and commands a new outlook on learning. If we accept that youths develop through their social relations and that learning does not take place where we have traditionally assumed —in the individual dynamics of the mind—then we can begin to understand the role environment plays in the development of consciousness. One of the benefits of such a framework is that it allows administrators and teachers to consider learning as it relates to interpretive activities. Student learning is not understood as the process of building mental structures inside the mind; learning is constructed in relation to outside actions. Administrators must begin not only to understand the culture of their schools

and local communities, but also to engage the relation of their own discourse to the construction of meaning that might conflict or agree with their students' understandings based on their backgrounds.

Technocratic standards eschew theories of cognition that attempt to account for social relations and educational environments, since it is much easier to explain failure to achieve on the basis of the lack of an individual's ability, whether it be the teacher's or the student's, than it is to engage in a study of the cultural context that is created by the standards themselves. Thus, technocratic standards do little to foster an environment where collaboration and self-reflection are important components of the curriculum. Standards of complexity suggest it will be important for educational administrators to engage what theorists who have developed the work of Vygotsky have termed "situated cognition." They must become researchers of their constituents and understand themselves in relation to the people they claim to represent. If social environments are taken seriously, a discourse on standards will have to include a conversation on the implications of standards on environments.

Complexity Standard No. 4: Retain and Rework the Public Sphere

This standard includes many different dimensions, including the need to have multiple public spheres as sites for discussion and debate over public issues. I suggest we need multiple public spheres because most, if not all, of emancipatory humanist theory has suggested that a public sphere should be open to everyone, with the belief that we can come together and learn through our differences. This has not been a fruitful perspective on democratic practice, however, as social inequality will always be an element of singular conceptions of the public sphere. As Jane Mansbridge argued:

> The transformation of "I" into "we" brought about through political deliberation can easily mask subtle forms of control. Even the language people use as they reason together usually favors one way of seeing things and discourages others. Subordinate groups sometimes cannot find the right voice or words to express their thoughts, and when they do, they discover they are not heard. [They] are silenced, encouraged to keep their wants inchoate, and heard to say "yes" when what they have said is "no." (Mansbridge in Fraser, 1997, p. 78)

Fraser (1997) argued that emancipatory humanist conceptions of the public sphere are misleading as they do not account for parallel areas where members of subordinate groups gather and debate issues on their own terms. These alternative arenas allow subordinated peoples to develop their own counterdiscourses that permit oppositional interpretations of their identities, needs, and interests.

Standards of complexity call on administrators to recognize that communities that have been historically

subjugated, in terms of race, class, gender, sexual orientation, spirituality, or other social-identity categories, will need to convene to develop their own understandings of self and their relation to others. For example, gay-straight alliances have been created in high schools across the country to address the particular needs of students who are attempting to understand their own sexuality. These "counterpublics" have typically provided a space to withdraw from the dominant public sphere and regroup and refocus the thoughts of its members.

These groups, however, attempt to address more than issues of social support. They become training grounds for directing new discourses toward wider publics. In the case of gay-straight alliances, the discourse has suggested that sexual orientation is more complicated than a singular heterosexual identity, and those complexities must be addressed in accordance with the rights of the dominant groups. Educational administrators need to understand that as long as people are excluded from dominant publics, counterpublics will develop to force the expansion of social issues through contestation and new discourses. Standards of complexity recognize that in a stratified public education system there will never be a singular public sphere where students, teachers, parents, community members, and administrators gather on equal grounds. As long as there are differences in ability to wield power, public schools are more appropriately conceived of as the material sites where cultural, ideological, and material contestation takes place among a variety of publics.

Notes

1. An educrat is an official with a for-profit ideology who attempts to privatize education and remove the elements that make it a public good rather than restore its place as the center of citizenship education for a vital public democracy.

2. I interchange the terms *efficiency* and *performance* throughout this essay. The former is used to refer to organizations and the latter to both individuals and organizations.

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EDUCATIONAL STANDARDS

Using the Lens of Postmodern Thinking to Examine the Role of the School Administrator

Linda Wesson and John Weaver

Today, it is increasingly rare for a human to get first look at data about the world. Even our telescopes are often operated remotely with computer sensors . . . [Perception]

—James Bailey (1996, p. 137)

The struggle is over who gets to count as a rational actor, as well as an author of knowledge . . . The power to define what counts as technical or as political is very much at the heart . . . [Voice]

—Donna Haraway (1997, p. 89)

The more chaotic a system is, the more information it produces. This perception is at the heart of the transvaluation of chaos, for it enables chaos to be conceived as an inexhaustible ocean of information rather than as a void signifying absence . . . [Dynamic systems]

—N. Katherine Hayles (1990a, p. 8).

As searchers on a journey that is guided, not determined, by our perceptions within dynamic and chaotic systems of this world, we will discuss some of the postmodern interpretations of society and education, explain what we mean by visionary postmodernity, and offer some insights into the ways in which postmodernity, and especially the application of dynamic systems theory, reconfigures our notions of educational leadership. Since the spirit of postmodernity is to construct reality by crossing borders using multiple disciplines and perspectives, we have taken an eclectic approach to the subject by drawing on the perspectives of postmodernity as they are embodied in quantum philosophy, dynamic systems, chaos theory, and information technology.

As you may already know or believe, each of these disciplines contains numerous interpretations and definitions of what the term *postmod-*

ern means. Each discipline constructs its own course, reading events and inventing meaning according to its own definitions. This creates an uncertainty of meaning, which for some only confirms that postmodernity is nothing more than an elitist continental philosophy, indecipherable for and inapplicable to our schools today. However, we, along with other postmodernists, think that the lack of any definition for postmodernity is a direct reaction to modernist attempts to systematize knowledge and experiences in order to construct the illusion that there could or should be only one possible meaning to an event or phenomenon. For postmodernists, this systematization of knowledge leads to stagnation and decay, while the absence of uniformity and agreement on meaning creates spaces for dynamic growth and possibilities. Postmodernists accept ambiguity as the nature of nature and think that many modernists try to deny uncertainty by disguising their voice and concepts behind notions of objectivity, nature, truth, and neutrality; nowhere have these notions manifested themselves more patently than in the standards movement in this country.

Visionary Postmodernity

Postmodernists have used numerous approaches to explain problems and developments in our contemporary worlds, and different traditions have emerged from the purposely elusive term *postmodern*. In this chapter, we focus on the perspectives of those we call *visionary postmodernists*. Our choice and treatment of this group undoubtedly tell more about our protocols of interpretation and reading than do the authors we cite and co-opt for our purposes.

Included in this group that we call visionary postmodernists are curriculum theorists like William Doll (1993) and Patrick Slattery (1995); literary critics such as Katherine Hayles (1990a) and Barbara Herrnstein-Smith (Hernnstein-Smith & Platnitsky, 1997); cultural critics like Donna Haraway (1997) and John Fiske (1993); feminists such as Wendy Brown (1995) and bell hooks (1989); physicists like Ilya Prigogine (1996); computer scientists like James Bailey (1996); organizational theorists such as Margaret Wheatley (1992); and historians like Mark Poster (1995, 1997). We focus on these scholars and attempt to extend their ideas into the area of educational leadership. Although each theorist is in the process of constructing visions of a postmodern world, these visions do not situate themselves as grand illusions that rival those of early laissez-faire capitalists like Adam Smith and utopian socialists like Karl Marx. Instead, they offer perspectives and alternative messages as frameworks for constructing a future. Visionary postmodernists see these alternative perspectives as hopeful ways to address the deep crisis of modernity. Although they share some of the skepticism of more critical and, sometimes, pessimistic postmodernists such as Frederic Jameson (1994), Jean Baudrillard (1994), Peter Mc-

Laren (1995), and Henry Giroux (1994), they think it is possible to create alternatives to modernity that allow us to rethink our relationships not only with each other but with the environment, religion, science, economics, and culture.

Visionary postmodernists challenge the elitism that is embedded in the modernist hierarchical construct of aesthetics that attempts to label art "high" and "low." They see this labeling as a construct that ignores the power and privilege that is hidden when an individual or group speaks for all and labels what is artistic. As Usher and Edwards (1994) note, postmodernity is not confined to "elite 'high' culture" but is based on the "blurring of boundaries between 'high' and 'low' or popular culture." Moreover, "the pursuit of new experience is not confined to the real of 'good' taste but is part of the constant making and remaking of a 'lifestyle' where transcendental standards of good taste and aesthetic judgment no longer possess the power they held in modernity" (p. 10). Visionary postmodernity implies that watching MTV, studying body piercing, and reading comic books are learning experiences comparable to cruising an art museum, reading *Hamlet* through *Cliff Notes*, or studying sculpturing. For adherents to this philosophy, learning is a more inclusive act, which disrupts our notions of what is appropriate to learn and how/when learning takes place. Instead of inferring that students waste their time playing video games, skateboarding, or just hanging out, we have to ask what and how they are learning and what we can learn from their experiences. This position opens fields of study that were once closed by adult arrogance and elitism. Postmodernity, in this sense, is a pathway to democratic notions of knowledge formation.

This challenge to knowledge formation calls into question the modernist notion that knowledge is a fixed, timeless, and universal commodity. Modernity has created a resolute and symmetrical ideal of what knowledge is, how people learn, and how teachers should teach. As Paulo Freire (1995) posited, modernity sees schooling as a banking model in which knowledge is deposited in the brains of students and recalled when a withdrawal in the form of a test is made. In other words, under modernist assumptions learning and teaching can be done by following a recipe or a formula, and all students learn in the same way, at the same pace. Visionary postmodernists such as cultural critic Robin Roberts (1996) imply that knowledge, like life, is not symmetrical but asymmetrical, fragmented, contradictory, ambiguous, ironic, and boundless. Therefore, learning is ironic; just when we think a teacher is not teaching or a student is not learning, we discover students are learning in unexpected ways.

This asymmetrical approach to learning and knowledge offers students, teachers, and administrators the opportunity to disrupt what is taken as "natural and hence unquestioned" (Roberts, 1996, p. 15). This approach suggests that knowledge exists on

many planes of meaning and that these meanings often contradict each other. Instead of there being one true answer, meaning has multiple possibilities. Instead of knowledge being limited and fixed by preordained universal laws, the postmodernist perspective contends that knowledge has many possibilities, limited only by one's imagination and creativity.

Visionary postmodernism emerges also within the thinking of scholars interested in the impact of information technology on our world. In fact, it is not too much of a generalization or overstatement when we state the belief that information technology more than any other phenomenon in the world today announces the presence of postmodernism. For instance, virtual reality has made it, virtually, impossible to recognize the difference between an original and a copy. In some cases information technology has made it possible to ignore or eliminate the original. What we have in mind here of course is Donna Haraway's (1991, p. 216) dictum concerning the Human Genome Project: "In the beginning was the copy." What she is implying here is that a copy of DNA has been created to enable an understanding, so the geneticists hope, of numerous human concerns and developments such as the genetic dimension of diseases. However, the epistemological importance of the Human Genome Project is that there is no original. The Project is no one's DNA but everyone's. The copy has eliminated the need for an original. Without a doubt, this undermining of the Western tradition of valuing originals over copies would never have been possible if it were not for information technology.

Information technology has impinged on our lives and beliefs in other ways as well. The philosopher Don Ihde contends that information technology has altered our condition in at least two fundamental ways: the perceptual and what he calls the pluricultural. First, with regard to perception, Ihde suggests that in the postmodern world we are witnessing a transforming of how we see and read. He explains: "With reading there is always perception, but a particularly structured perception." This is the case for both modernity and postmodernity. What has changed, however, is "the rise of 'image technologies' which, while still viewed from a usually fixed position, now begin to vary the 'text' with that which 'moves' . . . This multiplicity of positionality . . . is the emergence of the polymorphic seeing which begins to characterize the postmodern" (1993, p. 86). This shift in perception and the rise of multiple reading positions can explain the pessimism many modernists express in their concerns about changes in our contemporary world. Modernists have been accustomed to a fixed position for perception and reading. That is, reality never changed: What one person saw, another saw too, unless one was impaired by an ideology. With regard to reading, the text was always there; it and the author's intentions never changed. In our contemporary age, reality, texts,

and authors constantly change without any respect for modernists' concerns for authorial intent, fixed reality, or universal meaning.

Along with this shift of perception is a move toward what Ihde refers to as the pluricultural. Ihde argues that traditionally the notion of intellectual and economic growth has been associated with scientific developments. In other words, progress has been associated with, linked to, and described as Western knowledge. However, there is another way to interpret the dramatic changes that the world is experiencing with regard to information technology. Ihde (1993, p. 62) posits that "innovative periods in the history of technology correspond more to high periods of crosscultural trade and exchange than to high periods of philosophical or scientific theory. . . . " He states that "this association with technological innovation and cross-culturality hints at the very phenomenon I wish to forefront—the rise of pluriculture." The pluricultural is a shift in perception from seeing change brought about through and by Western scientific developments to seeing change as a result of cross-cultural relationships that are enhanced and made possible by information technology. This shift from a centric way of seeing to a pluricultural mode brings about dramatic changes in our foundational beliefs about reality and self. As Ihde (1993, p. 63) notes, "contemporary pluriculture . . . is more virulent and chaotic." Pluriculturality is more virulent and chaotic because it promotes a "multiplicity of images;" is supportive of a "fragmentation into 'bits' or 'culture fragments;'" encourages "a certain fluidity as they move into and out of presence, and thus" develops "an overall 'bricolage' character" (Ihde, 1993, p. 64).

In a fear-based reaction to these kinds of unpredictable and unexpected changes that have accelerated during the last thirty years, the education standards movement has gained momentum; "multiple-choice measurement by numbers, severe sanctions for poor numbers, and more attractive rewards for ever higher numbers" (Sacks, 2000, p. 238) are promoted as the "modern" tools for educational accountability and reform in the United States.

Scientific Rationalism and Schools

In order to create alternatives to modernity within schools, visionary postmodernists have challenged and critiqued the dominant ideology of schools: scientific rationalism. We agree with Sharon Traweek (1992) that scientific rationalism is the "culture of no culture," since it is a culture that pretends an objective world exists, a world that is pure and innocent, uncorrupted by the subjective touch of human beings, and disembodied yet articulated by the (white, male) scientist's voice. In this culture the scientist is apolitical, value neutral, and the mere chronicler, as opposed to the creator, of nature. The concept of "reason" that reigns supreme is a specific form that in the words of William

Pinar (1997) regulates and demarcates, "divides and subtracts, . . . creates and destroys" as it defines what matters and what is silenced (p. 99).

School administrators generally accept the assumptions of scientific rationalism, assumptions that presume that standardized tests are value neutral and true indicators of what students know and of how well teachers teach and administrators lead. These assumptions create the illusion that learning and teaching can be measured and quantified, when we know that learning and teaching usually escape our quantification attempts and, in fact, can be limited by an emphasis on measuring goals. For those who have a passion for learning but have multiple perspectives on the how, why, and what of learning, these assumptions exact a terrible penalty. While privileging those who suggest that knowledge is fixed and universal and, therefore, beyond human values and cultural influences, scientific-rational assumptions penalize those who know that these expectations are not congruent with their lived experiences (Tomkins, 1991).

Accepting these assumptions distorts reality in education. Arkady Plotnitsky (1994), for instance, shows that Bohr, in particular, but also Heisenberg, proved that we cannot know an objective world beyond the lens through which we try to see it. We see and distort the world through the lens of our assumptions. We cannot "speak of reality as existing by itself . . . independently of interpretation" (p. 149). Interpretation, then, is all we have; distort is all we can do. So if we choose to understand how students learn using standardized tests to measure learning, how teachers teach using "objective" evaluations, and how administrators lead by applying principles of accountability, we will construct students who learn in order to take tests, teachers who teach to a test, and administrators who define their leadership skills according to how well their school ranks in comparison with other schools on the statewide battery of tests. However, anyone who uses these criteria to determine the "success" or "failure" of students, teachers, or administrators is doing so based on untenable assumptions that exist for political and disingenuous reasons. Because students pass (or fail) standardized tests does not mean students are (or are not) learning, teachers are (or are not) teaching, and administrators are (or are not) leading. Standardized tests are only one method of interpretation in the world of education and are not a good method for understanding what is actually going on in schools. For the postmodern visionary, standardized tests are merely a symbol of a modernist way of thinking that privileges a detached perspective and assumes homogeneity in student populations.

Although these assumptions come from scientific rationalism, visionary postmodernists realize that there is not a single form of rationalism but plural rationalities that have often been misunderstood (Haraway, 1991; hooks, 1989, 1994; Popewitz, cited in Cornbleth, 1986). Our attempt is not to construct an antiscience or antira-

tionalist approach to education, but we contest the ways in which the modernist notion of scientific rationalism has manifested itself in society and schools as the only form of being. The task of educational leaders is to acknowledge plural rationalities and allow various forms of rationality to compete with each other as teachers seek the best ways for individual students to learn. For example, scientific rationalism assumes that one statewide curriculum can be used for all school districts within a state. Visionary postmodernity recognizes the need for curriculum frameworks that allow schools to decide on a curriculum that evolves and emerges depending on the needs of teachers and students. A postmodern administrator in this case would value teachers who invent their own curriculum and would morally and politically support them in their creative and imaginative efforts to meet the needs of students.

In contrast to administrators in schools that have been sanitized by scientific rationalism, visionary postmodernists promote the return of passion and emotion to public schools. As Donna Haraway (1997) states, scientific rationalism has privileged detachment and called for the teacher, student, and administrator to speak only of unadorned facts, "adding nothing from his mere opinions, from his biasing embodiment" (p. 24). But for visionary postmodernists, a return to passion also means that error, emotion, and ambiguity will play a role as each individual finds the best way to teach, learn, and lead.

Schools as Closed Systems

Scientific rationalism conceptualizes schools as closed systems. The idea of organizations as closed systems originates in the mechanistic science of the seventeenth century, developed by Newton, Galileo, Descartes, and their contemporaries. According to the "rules" of a closed system, universal laws govern all physical phenomena, and faithful followers can replicate specific universal laws if they efficiently and diligently apply the language of mathematics (and now, statistics) to their experiments. Administrators and school boards, for instance, seek out "lighthouse" schools, which are schools that have been successful in their endeavors to educate children, promote a positive atmosphere for teachers, and remain within budget. Administrators assume that other schools can replicate the successes of these schools if a recipe is faithfully followed. Like the Newtonian world of physics, in a closed system good administration transcends any unique characteristics of a public school, such as disparities in public funding, quality of teaching, parental involvement, preparation of students, and condition of facilities. In a closed system these issues tend to be seen merely as excuses for school leaders who are failing. Emphasis is placed on structure and parts so that "responsibilities have been organized into functions. People have been organized into roles. . . . Knowledge is broken into disciplines and subjects" (Wheatley, 1992, p. 27).

Voucher systems are an example of schools operating as closed systems. The assumption is that private schools are inherently better than public schools and that if public schools want to improve, they will have to model the private schools. Therefore, all students should be supported in their choice to go to private schools, where staff should just "work harder" to make schools function well. Modernity tells us that the differences between good and failing schools are found in the innovativeness of administrators, dedication of teachers, and benevolence of market principles. These assumptions ignore the unique characteristics of public schools, however, such as the diversity of school populations, the issue of teacher "burnout," and the other side of "free" market capitalism (e.g., deceptive advertising and selective admission policies that are the prerogative of private schools).

Schools as Dynamic Systems in a Postmodern World

Visionary postmodernists view public schools, the economy, and culture, as well as the universe itself, as dynamic systems. In contrast to schools viewed as closed systems, in which the "rules" of the past are the "rules of the day," we postulate that viewing schools as dynamic systems demands that human dynamics of the school site change drastically. Specifically, this view requires that we change the ways we relate to each other, not only within the school, as teacher to student and teacher to administrator, but also as we interact with the environment, the economy, and the culture. Since we view schools as dynamic systems, their viability depends on their capacity to be inventive, eclectic, open, adaptable, and resilient. In this section we discuss dynamic systems theory and the implications of this theory for education. We give particular attention to characteristics of dynamic systems that explicitly affect public education.

We start this section with a warning: In all dynamic systems, whether a school, business, living organism, or weather pattern, there are capacities for unlimited growth and destruction through decisions that are made or natural forces that influence the system. The future direction of any dynamic system cannot be known or predicted. For instance, a school may set a course for dynamic revitalization in order to improve student learning, teacher performance, and administrative leadership, but because of insufficient funding, student dropouts, teacher attrition, administrative turnover, or some unforeseen influence, the course may lead to a stagnant school that becomes less productive in its performance. Such an outcome cannot be predicted in a school based on either postmodern or modern principles. The difference, however, is that visionary postmodernity recognizes that the potential for stagnation is as great as the potential for dynamic growth, while modernity carries the assumptions that stagnation can be wished away by adherence to universal laws of administration, statewide cur-

riculum guides, and student performance testing.

Since dynamic systems are open systems, taking information from all sources, we have intentionally drawn from a wide range of disciplines to present our understanding of postmodernity and dynamic systems. This procedure is in contrast to that of a closed modernist system, where the tradition is to become a specialist within a discipline while rarely crossing sacred boundaries that separate one's expertise from that of a physicist, computer scientist, or literary critic. In the modern paradigm, if we cross into another discipline, we announce that we are entering and we are amateurs. In postmodernity, traditional academic boundaries are exposed as mere constructs that limit our ability to understand the world.

Our notion of dynamic systems is influenced heuristically by work done in the fields of computer science, evolution biology, quantum physics, and organizational theory. We begin with an assumption: A dynamic system, such as an organization, organism, weather pattern, profitable business, ant colony, or school, is dependent on the free flow of information. This concept of dependency is a necessary and sufficient condition of a dynamic system, and it implies that a dynamic system, unlike a closed system, is not self-sustainable. Instead, a dynamic system is dependent on using the unlimited amount of information that enters the system. Since this information enters the system without any attachment of significance, blueprint, or meaning, it is up to the dynamic system to make meaning out of the information so that the system will not spiral out of control, become stagnant, or self-destruct.

Drawing from information technology, let us look at how parallel computers function as dynamic systems. Marketing companies use parallel computers when they want to recognize patterns for data analysis. For instance, a marketing company interested in selling accessories to new car owners uses parallel computers to target consumers who may be interested in their product. The computer is presented with an unlimited database of the consumption habits of all Americans. The task of the computer is to sort out consumers who have recently purchased an automobile. All other information, although possibly important at a later date, is ignored. The marketing company then takes the list the computer has generated and sends out fliers or makes telemarketing calls to targeted consumers who have recently purchased an automobile. With its ability to disaggregate (in multiple ways) an immense amount of information, the computer makes the company more efficient and potentially more sustainable.

Let us look at the marketing analogy another way. In physics, chaos theory suggests that the nature of nature is chaos. That is to say there is a great deal of information in the universe, and there is not an absence of meaning but that meaning is too complex for us to comprehend completely. The initial database used by the mar-

keting company represents a chaotic state in which order is not the natural state but rather something that emerges or results from the ability to sort and organize data. The marketing company used computers to target certain buyers, creating a self-organizing database that emerged from the initial database. Order emerged out of the initial chaotic database, giving the company a more specific list of people to contact who might be interested in car accessories.

For a system to be dynamic, then, it needs an unlimited flow of information from which meanings or patterns can emerge, become organized, and in turn influence the course of the system. When information is not allowed to flow freely or is not easily discernible or focused, the ability of the organization to sustain and improve itself is interrupted (Wheatley, 1992). Let us return to the marketing example. If the computer effectively runs its program, the company will get the desired result (a list of people who recently purchased an automobile), which could lead to efficiency and sustainability; this type of approach may lead to expansion into other markets and the creation of new jobs. One small cause (the desired list) can generate consequences. Suppose, however, there is a program error, and the computer interprets the word *automobile* to mean *home*, generating a list of the names of people who recently purchased a new home. As a result of this simple and small program error, the company goes bankrupt, people lose their jobs, families are harmed, and the regional economy takes a hit—ad infinitum. A small cause initiates large consequences.

Place this metaphor of parallel distributive processing into school life. Let us take the example of standardized tests. Forty-seven out of fifty states have reacted to apocalyptic reports such as the *Nation at Risk* by creating statewide standardized testing. This small act has led to dramatic changes in public schooling. Public schools are now working under new, but still modernist, rules of accountability, redefined notions of what public schools should do, and reprogrammed concepts of what teachers ought to be doing. The introduction of standardized tests (small cause) has restructured the schools in multiple ways (large consequences).

The notion that small causes lead to large consequences is called the Butterfly Effect, so named because a butterfly can flap its wings in Beijing, resulting in a thunderstorm in New York City (Hayles, 1990b; Wheatley, 1992). In closed Newtonian systems, life is made simple when one cause leads to one proportional effect. Not so in dynamic systems theory; the Butterfly Effect demonstrates that long-term prediction is almost impossible and that unpredictability is the order of nature and life. The marketing company cannot know beforehand whether its newly created list will generate profits, lead to bankruptcy, or have no effect at all. For public schools, this kind of unpredictability also has great implications. Since test results can be influenced by so many variables, stan-

dardized tests are just a means to make public claims about learning rather than a method for accessing what students know. A score on a test can be influenced by an unlimited number of small causes, ranging from student illness to questions corresponding (or not) to the students' way of thinking; from the test being representative of white, middle-class values, to the conditions in the room.

To better illustrate the connection between education and dynamic systems theory, we now discuss three characteristics of systems theory that explicitly affect public education and the standards debate: adaptability, competitiveness, and diversity.

Adaptability

To explain how adaptability works in dynamic systems, we refer to recent developments in neurophysiology, cognitive psychology, and computer science. In recent decades neurophysiologists have made steady progress in understanding the neural networks of the brain and its ability to adapt to its environment. In order to perform everyday, complex functions, the brain has at its disposal millions if not billions of neurons (Gazzaniga, 1995). Each neuron has the capability and flexibility to perform numerous functions, but each one has a predisposition toward one function. For instance, a neuron may be predisposed to function in a pattern for hearing but can be part of a pattern that makes sight possible. In this sense, neurons are both predisposed and adaptable.

Howard Gardner (1991) and Paul Churchland (1996) are using these advances in neurophysiology to rethink theories of learning in cognitive psychology. Like neurophysiologists, cognitive psychologists believe we are adaptive in our learning abilities because our brain has the capacity to be simultaneously predisposed and adaptive. The best possible education, then, would not focus primarily on the numerical and logical (i.e., scientific rationalism) ways of learning, as most schools presently do, but would focus on our multiple ways of knowing, including the spatial, musical, and naturalistic, to name a few.

Adaptability plays an important role in computer science. The first computers were devices that could perform some functions better than humans (e.g., adding numbers or calculating the trajectory of an artillery shell). Today, computer scientists and leaders in artificial intelligence are creating computers that are able to adapt to their environment and perform functions that were not a part of their original program. With a smaller memory than previous computers, yet capable of learning and storing experiences into memory for future use, these computers can recognize patterns and perform functions that would take humans hundreds, if not thousands, of years to perform. As Kevin Kelly writes: "Investing machines with the ability to adapt on their own, to evolve in their own direction, and grow without human oversight is the next great advance in technology. Giving machines freedom

is the only way we can have intelligent control" (Kelly, cited in Bailey, 1996, p. 217).

In schools, this kind of "control" means letting teachers have the freedom to teach as they see fit yet be held accountable for facilitating learning in their classroom. It means if a teacher comes to an administrator with a passion for knowing and says that he wants to use films (see Weaver & Grindall, 1998), rap music (see Weaver & Daspit, 2000), or comic books (see Gough, 1993) to teach a science class, the administrator should see this as an opportunity for the teacher to have "intelligent control."

By understanding the notion of adaptability as gain rather than loss, the administrator can see the unlimited potential available for effective leadership. There is no longer one best way—no metanarrative for students, teachers, and administrators—to achieve goals. So an administrator cannot assume that she can replicate what other administrators have achieved in their schools but can assume that successful programming depends on the ability of the administrator to build a school culture centered around trust, inquiry, open communication, data gathering, and consensus building. It is in this kind of culture that students, teachers, parents, and administrators take responsibility for their actions and make decisions adapted to their particular school site. In this kind of school culture, people act out of their commitment and values and not out of prescribed roles to which they have been assigned.

Competition

As well as being adaptive, dynamic systems are competitive. First, we must caution that when we say competitive we are not referring to the traditional free-market capitalism model in which there are winners or losers and individuals compete with each other for scarce resources. Instead, competition in dynamic systems thinking means that the environment holds a richness of possibilities and opportunities that are bidding for our attention and time. Let us look at information technology for an analogy. The parallel computer described earlier is effective only when it is inundated with information. As information is fed into the computer, it seeks the best path to achieve its goals. The paths that promise the best results are used, while those that are not as promising are disregarded. Another illustration of this type of competition can be seen in a wired classroom. Students learning to use the Internet have access to an infinite amount of information with this resource. They must decide which list services, bulletin boards, or databases will help them achieve their goals. The source of information that enables students to achieve their goals becomes the best route for specific learning. If students select databases that lead them down an unproductive trail, they merely select another route. There is a lot of competition for their energies, but using their own knowledge and intuition, they learn to choose the best route to accomplish their goals.

Extending the concept into leadership, competition means that the administrator accepts in a neutral fashion as much information as possible from the abundance available to use in balancing, weighing, analyzing, and synthesizing so that combinations of information will emerge that provide the best route to achieve goals. This information-gathering skill also means that if goals change or if the chosen route begins to appear unworkable, the administrator initiates the process again to find new routes that may better address the issue at hand.

Diversity

Another characteristic of dynamic systems is that they value and thrive on sustained diversity. In fact, we are discovering that chaos and diversity are the nature of nature (Briggs & Peat, 2000; Friedman & Wolf, 1998; Prigogine & Stengers, 1984; Wheatley, 1992). Using information technology as a metaphor, Bailey (1996) reminds us that in the world of neural and parallel computers and intermaths, diversity is the key for a successfully evolving computer system: "Instead of groups all converging on the same optimal goal, or populations all melting together into the same dominant and homogeneous culture, there is sustained diversity. Sustained diversity is the seed corn of evolution" (pp. 174–175). In all dynamic systems, diversity is the seed corn for dynamic growth. Ecologically, each species adds to the mosaic of life and creates the possibility for continued growth in the world. However, as a type of plant, animal, or microorganism disappears, the ability of the earth to sustain life is reduced and threatened. We are not suggesting that the effects of the extinction of species on the rest of the earth are constant. Ecologists now believe that there are cornerstone species (such as the Wildebeast in the Serengeti) whose extinction would have a greater impact on the vitality of the earth than if other species became extinct. In dynamic systems diversity is life, and the reduction of that diversity leads to stagnation and possible destruction.

Diversity as a part of dynamic systems can also be found in the works of cultural and literary critics. In these fields of study, diversity comes in the form of "voice," with an emphasis on the importance of voice as a way to understand a variety of perspectives. In the closed system of modernity, especially in scientific rationalism, voice is not important because one voice can speak for all within an ideal of norms, uniformity, and universality. Michel Serres (cited in Pinar, 1997) reminds us that scientific rationalism is a form of violence or an exercise of power in which "knowledge is a hunt . . . the reason of the strongest is reason by itself" and "western man is a wolf of science" (p. 91). But the nature of dynamic systems thinking is to value multiple voices for the sustainability of a free society and to see homogeneity as a form of dictatorial rule.

This valuing of multiple voices has resulted in an explosion of works within the fields of cultural and literary criticism that are postcolonial, femi-

nist, ethnocentric, poststructural, and neo-Marxist. These voices focus on the variety of ways groups or individuals read a specific event. In cultural studies, Robin Roberts (1996), just to take one example, studies how feminist music videos are "texts" constructed by multiple "authors," including the director, performer, and video viewer. The idea that there are multiple readings of a video reveals that "reality itself is fragmented and contradictory" and dependent on the interpretation of the "author" (p. 12). Roberts suggests that for academics to abandon the illusion of one standard of taste and one best interpretation of reality, we must put our elitism up for adoption and accept that knowledge is not just found in scholarly sources, but in any text, including music videos. Literary critic Andrew Ross (1991) delves into the ways in which cyberpunk serves as an outlet for individuals stifled by the discourse of scientific rationalism. In the medium of cyberpunk, people can dream, nurture their imaginations, and subvert, to some extent, the stifling ideology of scientific objectivity and value neutrality.

From a leadership perspective, multiple voices are necessary to sustain dynamic systems, so to seek uniformity because of a need to control is deadly. The administrator's role is to seek to understand not only the voice of the proverbial student leader but also the voices of the teen hacker, roller blader, punk rocker, rap artist, drug user, and introvert. In hearing marginalized voices, administrators can discover that these students' ideas are not improper or distasteful, but rather give voice to a world seen through a different lens, station, and position in life, a voice that is based on different notions of propriety, taste, purity, and efficiency.

It is helpful for administrators also to be aware of the vision of what Plotnitsky (1994) calls "excesses of energy." Plotnitsky posits that in any exercise, whether it is atomic interactions, writing, or economic exchanges, excesses of energy "are produced, which by definition, cannot be utilized" (p. 2). These "excesses of energy" may represent "the improper, the distasteful, the impure, the wasteful, the perverse" (p. 28), but administrators need to acknowledge that such energy is a vital part of a school culture.

Visionary Postmodern Administrators

With these ideas about dynamic systems theory in mind, we use the remainder of this chapter to express some preliminary thoughts on educational leadership shaped by dynamic systems thinking. We do not present our vision as a blueprint for the reader to copy. Instead, we hope readers will try the ideas appropriate to their situations and see if they take root in the university, school, or classroom.

Information Technology

Visionary postmodern administrators will commit themselves to the devel-

opment of information technology within their schools. For visionary postmodern leaders, information technology is a way to promote the development of multiple voices and transform the learning processes in schools. In his work *The Second Media Age*, Mark Poster (1995) distinguishes between what he calls the first wave of information technology (e.g., radio and television) and the second wave, which includes the Internet and virtual reality. According to Poster, the first wave promotes passivity; the producers and directors of radio and television programs dictate what information is significant and how this information should be interpreted. The second wave, however, is different. The Internet and virtual reality, like the telephone, promote decentralized power relations in which the ability to interpret the world and construct meaning is potentially open to everyone. Poster suggests that users of the second wave of technology "may have decentralized, distributed, direct control over when, what, why, and with whom they exchange information. That is the Internet model today, and it seems to breed critical thinking, activism, democracy, and quality" (p. 28). In this sense, information technology promotes the development of multiple voices and limits censorship.

We believe that information technology has the same potential in schools. Its tendency to promote decentralization, democracy, activism, and critical thinking offers an opportunity to transform schools. For instance, the traditional classroom where the teacher is the sole expositor of knowledge becomes an environment where teachers interact with students as they use technology to enhance learning. The visionary administrator's role is to be a pioneer in the technology revolution. We think that in the near future access to technology will be a major determinant of success and the sine qua non for equality; in fact, we see that, particularly in schools, equality will be defined in terms of access. Therefore, it is the administrator's job to facilitate access and understand the implication of information technology in the teaching-learning process. Administrators need to have a theoretical understanding of information technology and see its purpose as different from the traditional "drill and kill" approach that remains prominent in modernist classrooms. As a pioneer, the visionary postmodern administrator is able to see technology as a comprehensive part of teaching and learning and will provide teachers with the opportunities to develop skills that meet the demands of the technology revolution.

Academic Work

We believe that visionary postmodern administrators need to reconceptualize academic work and oppose the standards movement that seeks to sort and rank students based on their skills to recall out-of-context data. Traditionally, academic work has been influenced by the static notion of scien-

tific rationalism, in which the scientist is objective, neutral, and apolitical. This work is also limited by methodological approaches that do not open new worlds but call for fixed views. In schools and universities today, academic work stresses a modern worldview that is more interested in isolating and replicating the world than in understanding the people and institutions that populate the world.

From a visionary postmodern perspective, academic work has to be redefined so teachers and students can see the interconnectedness of traditional disciplines and the value in all the possible ways there are to understand the world. In dynamic systems, multidisciplinarity is important. The task of the administrator is to envision academic work as adaptive to new ideas that are engendered by conversations when teachers and students cross traditional academic boundaries, seek out new ways of thinking about learning and teaching, and introduce these ideas in the classroom. Not all ideas will succeed; postmodernity supports learning by trial and error. In dynamic systems, all possible ideas need an opportunity to grow so we can discover which ideas can assist us in learning and teaching.

Visionary postmodern administrators need to construct space for teachers and students to learn from error, distortion, and misinterpretation. They also need to make teachers, students, and community members aware of new "standards of complexity" and use complexity standards as the foundation for learning experiences. To begin this process, they will become involved in conversations about the nature of knowledge and knowledge production. They question whether the scientific method is the only way for learning to take place, the "only one way to have fun with our minds" (Traweek, 1996, p. 148). As Bailey (1996) points out, Johannes Kepler did not use the scientific method to give meaning to Tycho Brahe's and Galileo's ideas on planetary motion. He used chance and error, and even believed in the validity of astrology. In other words, Kepler was "totally uninhibited" in his endeavors to explain planetary motion. The visionary postmodern administrator has expectations for these kinds of conversations to become the norm so that new knowledge about learning and academic work is constructed only to be reconstructed as other knowledge and experiences are acquired.

Accountability

Visionary postmodern administrators will consider accountability differently. In modern theory, technocratic accountability is used "to maintain control and maximize 'efficiency' by constraining the individual production function" (McKinney & Garrison, 1994, p. 82). Under this notion of accountability, administrators and teachers too often are held accountable for events beyond their control.

In a dynamic system, the administrator or teacher would not be solely accountable for falling test scores, teacher motivation, parental involve-

ment, and student dropouts. In fact, given that a dynamic system is a complex, multidimensional system in which small causes can lead to large consequences, it is patently unfair to expect any leader or teacher to be held accountable for all events that pertain to a particular issue. What each educator is accountable for are his or her contributions to the creation of a context in which dynamic growth and sustainability are possible.

The role of the administrator would center on sustaining a viable system in which the institutional collective life is vital and creative (Wexler, 1995). Administrators would be accountable for negotiating the tensions of multiple border crossings within the system (Hutcheon, 1989) by using dialogue as a means to explore meaning with others to deepen understanding (Lambert et al., 1995), by deciphering the "social conditions, cognitive assumptions, and power relations" that contribute to the context of each school site (Kincheloe, 1993, p. 150), and by interacting with disruptions, challenges, and changes to or in the system itself.

Evaluation

A postmodern administrator understands that the complexity of education calls for the use of multiple means to determine what is valuable and how it can best be measured. William Doll (1993) believes our current evaluation systems are deficit driven (artificial), norm based, and competitive (in the old sense of the word) by separating "winners" from "losers." These characteristics drive the current push for standardized state and nationwide testing, a push that has become more virulent as the public reacts in fear to the accelerated pace of change in our society by demanding more accountability and control, and politicians respond by using education for the purpose of building their own political agendas. Seeking easy answers to complex problems and trying to maintain control of the status quo, the public and the politicians seem willing to use test scores for their own purposes even though the negative effects of this kind of standardized testing have been well documented (Berliner, Bruce, & Bell, 1996; Hoover, 2000; Sacks, 2000).

A visionary postmodern administrator engages in critical inquiry to uncover the fundamental contradictions in high-stakes testing while promoting the invention of alternative forms of evaluation, which are internally driven and measure individual growth. These alternatives should be geared toward the experiences of the students and should present students with the opportunity to demonstrate what they know. That is, if students and teachers believe that a standardized test provides the best way to capture what the students have learned, they should be afforded the opportunity to use that medium. However, if painting, drawing, writing, singing, dancing, or talking is the best evaluative means, this alternative should be available. The key is to be able to invent alternative forms of evaluation that honor rigorous standards of

learning as well the insights of students and teachers about the nature of that learning. With this kind of evaluation, the goal is not the efficiency found in notions of competition, norms, or deficits, but to assess individual achievement through multiple means.

A New Role for the "Successful" Administrator

If administrators understand schools as dynamic systems, they are able to surrender to the transitoriness of events and are prepared to replace events and let them be replaced by events that are better adapted to the environment. Understanding that events disintegrate and build again, leaders can recognize that systems are reproducing themselves by means of continuous disintegration and reproduction (Hayles, 1990a, 1990b). Using dynamic systems thinking, leaders learn to appreciate chaos for the part it plays in moving a structure toward more complexity and more differentiation (Prigogine, 1996).

A postmodern visionary administrator understands order and disorder as part of a turbulent flow of everyday school life in which order centers on clear points of self-referencing (Lachmann, 1999; Wheatley, 1992) and emerges from the daily interactions of communities, administrators, teachers, and students. This is not a utopian vision. Utopian visions are products of modern enlightened thinking in which truth transcends power and politics. In the postmodern condition, truth does not transcend experiences but is constructed by and through experiences. Postmodern visionary administrators expect power and politics to play an integral part in transforming schools; they do not try to control the turbulence that develops as diverse ideologies vie for power, but they are open to all information and develop great focus and concentration in order to understand the multiple realities that are evolving out of the experiences of a multifaceted society. In this culture, standardized testing is seen as a challenge that emerges from various assumptions including the assumption that states: "You test them, and they will learn" (Sacks, 2000). The administrator's role is to understand the challenges and opportunities posed by these kinds of assumptions and respond by questioning these assumptions and exploring more complex ways to address the questions of accountability and educational reform (Morgan, 1997).

Since the role of a "successful" administrator in a dynamic system changes as the system changes, flexible goals will be charted, only to shift before they are implemented. Teacher and student expectations will be established only to change as the expectations take on more concrete meaning and new circumstances present themselves. The role of a visionary postmodern administrator will be to help keep the system viable and "multicentered" while ensuring that teachers and students have opportunities to develop individual and collective meanings. From this perspective, the "suc-

cess" of administrators is seen over the lifetimes of everyone in the system as they are more open to the possibilities inherent in chaos and understand that in these possibilities are patterns unifying each one of us.

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NEW STANDARDS FOR ART EDUCATION

Disassembling the Canon

Roymieco A. Carter and Leila E. Villaverde

At the heart of reconceptualizing standards in education for the twenty-first century, there is a need to examine not only the subjects that are central in our schools, but also the subjects that are marginal to the curriculum. In other words, it is necessary to focus on what *is* there, but more critically on what *is not*. Art too often is considered a childhood memory, fading from classrooms as students transition out of elementary school. We believe engaging in the arts throughout the pre-K to 12 schooling experience is crucial to redefining what education is and can be. Throughout this chapter we attempt to centralize art in the curriculum, making it a bridge for other disciplines to use to solidify interdisciplinary connections, as well as providing a space for students and teachers to exercise their creativity and knowledge production.[1]

In this chapter, we first situate the educational purpose of art in school reform. Second, we delineate standards for a more informed, challenging, and rigorous development of the artist/public intellectual in each student.[2] And third, we engage teachers to redefine their roles in educating, preparing, and providing transformative experiences in the study, critique, research, and production of art. These standards are redefining education not only for students of art, but also for teachers of art who must be prepared to deal with and facilitate such a curriculum. We propose the following components and subsets in the art class, which we will explain in detail throughout the chapter:

1. An understanding of and exposure to art history and contemporary forms of art production
2. Use and experimentation of various media
3. Development of sophisticated and informed technical, presentation, and exhibition skills
4. Understanding of aesthetic criti-

cism, visual language, analysis, and interpretation
5. Redefinition and exploitation of creative and problem-solving skills
6. Understanding and application of social discourse concepts (e.g., identity politics; critical consciousness; cultural, political, and economic inequality; power and literacy)
7. Command of pedagogical content in students' work (writing, research, communication skills, learning as a lifelong endeavor)
8. Collaborative works, exhibitions, and publications
9. Internships
10. Complete theorizing of practice and practice of theory

These components are generated from a deep commitment to maximizing the knowledge found, internalized, and expressed so that education in the arts and the production of art are recognized and experienced in relation to other disciplines and the lived world. This type of education—of art class—demands a different priority of standards for both teacher and students as they struggle with knowledge production and consciousness construction through the private and public ramifications of being critical and aware of self, world, history, the present, and the future. These standards are complex in numerous ways as they allow for exercise, redefinition, and unlearning of the indoctrination of mind and spirit in the visual, textual, and experiential narratives of education. Through these necessary components, a contextual awareness and understanding of art fosters the exploration of uncontested territories for both student and teacher. These standards better equip students to negotiate their identities in the twenty-first century in ways more comprehensive of both a specialization and a generality of art and its relation and centrality to living productively.

The aforementioned components and subsets are explained in greater detail in the following sections.

An Understanding of and Exposure to Art History and Contemporary Forms of Art Production

One of the elements missing from art classrooms today is the appreciation of art in its historical and contemporary sense. Art history is unfortunately presented through slide show after slide show with no connection to the students' lived experience or their work. If presented at all, it either is peripheral eye candy for rote memorization or provides templates for simulation. Art history often is presented void of philosophy and social or political theoretical constructs, yet religious, psychological, and egalitarian motivations are quite explicit. Art is set up, therefore, as a means to promote one's religious affiliations, to work out one's psychological problems, or to dominate, censor, or appropriate. Artworks are canonized, and individuals, mostly European males, are made geniuses. There is no doubt about the skill, tal-

ent, and pedagogical content of the artists memorialized in art history books; our point of contention concerns how art history is taught—its relevance and frequency. When the focus of the lesson is the elusiveness of the act of creation, reserving the right of creation for the white, heroic male, the stage is set for emulation, alienation, and fear. The phrases "I can't do that" and "I'm not an artist" become manufactured through teaching.

Artists within a studio course—a class concentrating in the production of art—should present, discuss, and research artists pertinent to the projects assigned or current events. The artists should not be used as models or exemplars, but as a mode of inquiry into styles, media, intentions, composition, theoretical frameworks, social and political statements, and so on. This method presents art history with more substance, accessibility, and purpose; it also makes art history useful, pliable, and tangible. Students as well as teachers study both historical and contemporary art by questioning, analyzing, challenging what was thought and created, and discussing why it was revered or rejected. Both students and teachers must be informed and articulate in the discipline's past, in order to make better use of the present and future possibilities. We propose a framing of art history through multiple sociopolitical, aesthetic, psychological, kinesthetic, and intellectual lenses in the inquiry of art. Art history positioned in this manner is the foundation and resource for a reconceptualized art classroom, student, and teacher.

Use and Experimentation of Various Media

Regardless of available resources for purchasing different media, there are a variety of ways to acquire a well-stocked classroom. Of course this implies that a classroom exists as the strictly designated and designed art classroom. Teachers traveling from classroom to classroom with an "art cart" once a week or every two weeks for 30 minutes or longer are not conducive to the critically emancipating pedagogical experiences that art can afford a student and teacher.[3] Rolling-cart art education is completely unacceptable in any century, but especially as we enter the twenty-first century. Art teachers can search for businesses willing to donate discarded or unusable materials, and students can search their homes for potential materials and found objects. Garage sales and fund raising for special projects are possibilities. Another, more involved avenue for the acquisition of materials, funds, or program initiatives is the grant. Numerous institutions—local, state, and national—offer monies. National associations of art and education are also wonderful resources for grant opportunities.

Grant writing can be a shared experience among teachers, students, parents, and community members. Not only is it a great experience for both teacher and student, but it can lead to a multiplicity of other shared projects such as conference presentations, publications, and community work.

Besides gathering materials for the

classroom, the teacher and student have to be aware of unexplored materials or combinations of familiar media; an openness must exist in the classroom that nurtures and exercises creativity. In other words, both teacher and student must generate projects that require exposure and use of various media. This process will augment problem-solving skills, aesthetic sensibilities, skills, fluency, and resourcefulness. The student also has the opportunity to see and experience art in its multiplicity, without defining its practice and culture in narrow, popular ways. Exploring media decenters the canons that art history and the art world sustain, redefines the learning and production of art, and energizes the pedagogy of art.

Development of Sophisticated and Informed Technical, Presentation, and Exhibition Skills

Here the necessity is to develop skills and abilities for and attention to the complete execution of the work. Students and teachers often don't spend enough time deciding how their work would be best displayed, mounted, positioned, or enacted; therefore, craftsmanship is overlooked, which only increases the probability that the work also will be overlooked. When students are able to carry their creativity into the final stages, they develop another dimension to their work. It's not only about the idea, skills and talents, and presentation, but about the combination of all three. Having the student think about the end decisions can also facilitate initial problem solving. For example, students should stretch their own canvases; cut their own mattes; spray mount, measure, hang, and display their work; make their own paper; shoot their own slides; scan their images into programs like illustrator, photoshop, or quark; make digital portfolios; and add music and sound. These are only a few of the skills necessary to develop a sense of the requirements for completion of a work. If the work is not going to be displayed immediately, the student and teacher should develop ways to archive and preserve the work so that the student can present it with versatility, depending on audience, place, and intent. Crucial to this process is the creation of new ways to display the work to continue to rupture how the public interacts with art and what they will take way with them. The components described here are intended not only to reconceptualize the art classroom, teaching, and learning, but also to redefine the place of art in this society: Who has access to it? Why? Who does it? Why? For whom? These issues should be present throughout all the stages of art instruction, conceptualization, and production.

Understanding of Aesthetic Criticism, Visual Language, Analysis, and Interpretation

The curriculum must have several cornerstones to enhance the students' understanding of what they are doing. The four processes listed in the head-

ing offer another dimension to the formation of ideas, understanding of the languages within the art form, critique, and appreciation. First, students and teachers must have the terminology to appreciate and critique the aesthetic forms they study and produce. Aesthetic criticism is not about superficially dealing with form and content or about agreeing or disagreeing with contemporary critics; it is about deconstruction of the piece for what is seen and implied with the acknowledgment of the times and context in which it was produced, the ability to create asynchronous associations, and the artist or artists that are responsible for the work. It is crucial that students and teachers develop the ability to critique others' artwork as well as their own with fluency in visual language, which may differ depending on the art form or medium.

By visual language we refer to the way in which signs, signifiers, and signified work allow for the understanding of complexity.[4] The sign is best described as any entity, a configuration of both signifier (the symbolic referent) and signified (the meaning). In other words, the sign is the code, the elements or factors, the parts to the whole; for example, individual letters in a word, when put together, create something that a social group might recognize. Signs are elements of a larger language that allows for communication in a specific area of society. Signifiers are what the signs refer to. Here we begin to see a picture of what is being said or communicated; we can relate a mental image to the communication, perhaps just our own or one that is shared with many. The signified becomes the experiential or intellectual manifestation, what the sign stands for, its meaning or content. Through this framework, students and teachers can deconstruct the artwork and begin to analyze and critique the components of the work in order to understand its existence better. Engaging in this critique creates a refusal to simplify one's world, while inviting complexity through the recognition of analogies, metaphors, symbolism, and multiple uses of languages and senses. Engaging in this type of interpretation and analysis is crucial for helping students to develop as citizens; they gain fluency in the language of visual representation: its form, content, and purpose. As students develop their art form, they must become comfortable in articulating what informs their work, what it's about, and why they made certain decisions. In other words, they will feel confident in how they understand and ground their work. This process also allows them greater freedom as they reconfigure the language and develop their identity as artists and intellectuals, both public and private.

Redefinition and Exploitation of Creative and Problem-Solving Skills

We've discussed creativity and problem solving to some extent earlier in the chapter, but we want to stress several aspects. First, creativity must be

defined and redefined to allow for greater flexibility in the conceptualization and execution of ideas. We believe creativity should offer multiple ways of perceiving and experiencing. Creativity affords inverted perspectives, allowing for reconfiguration of the familiar for greater understanding and for the establishment of the unfamiliar. Creativity is a loaded concept because it has been ascribed to a selected few, those with alleged "innate" capabilities. We stress that creativity is a learned phenomenon, a way of thinking about the world and self, allowing for greater possibilities both quantitatively and qualitatively. Creativity also increases negotiation and problem-solving abilities, which are needed constantly in the production of art. We deem it a skill, or ability, that is learned and socially constructed, which orders cognition so that imagination is productively utilized.

Creativity in this fashion allows for multiple perspectives, instills a discourse of hope and possibility, and solidifies a sense of purpose. We consider creativity a way of thinking that expands ways of being, citizenship, and agency, as well as challenging preordained methods of learning and producing art. In other words, creativity increases pedagogical freedom so that existent problem-solving skills can be used, redefined, and tested. This component is central to the infinite possibilities that may exist in the art classroom for both teacher and student. Creativity needs to be redefined and reconstructed for the twenty-first century art classroom and pedagogy.

Understanding and Application of Social Discourse Concepts

The concepts we refer to here include identity politics; critical consciousness; cultural, political, and economic inequality; and power and literacy. Students and teachers must acquire and maintain a sociopolitical awareness about their identity; position in society; and the structural systems of power, class, race, gender, ethnicity, culture, sexual orientation, language, ability, and so on. They must understand this matrix as they critique, discuss, research, and produce art. These lenses augment the nature of the critique, the engagement with artwork and artists, and the deeper understanding of self in the world. Art making then becomes an agent of the individual. The comprehension of the discourse changes the individual and how he or she functions in a diverse, competitive society. Theoretical readings and discussions are at the core of our proposed standards, because we believe theory enhances practice and vice versa. Often theory is absent and resisted in the art classroom, which limits what is made possible, what the student dares to venture. The theoretical foundation that social discourse offers demands a different type of pedagogy—a different type of student and teacher. The pedagogical parameters of the class increase multifold as the world slides under the microscope and students begin to understand behind-the-scenes decisions and regulations. Social discourse also requires the development of a consciousness

that is not only acutely critical, but also political as it refuses to tolerate injustice in the guise of unconditional acceptance. The politics of difference are explored in the United States and abroad to create a world consciousness as well. The student is challenged and engaged by this type of education. Teachers rise to the occasion as they appreciate how many issues relate and are central to the ontological construction of art in this society and worldwide. The interdisciplinary issues inherent to art are made evident as the classroom becomes a site of inquiry.

The larger objective is for students to recognize how social issues affect the stratification of daily life. The intent is for both teachers and students to feel comfortable analyzing and discussing issues of race, class, gender, culture, power, language, access, sexual orientation, and ability as they relate to the ways art is defined, displayed, praised, or rejected, as well as the purpose of art and its position in society. Students and teachers must be able to comprehend the factors that contribute to the myriad of ideologies of the world they live in and the lives they lead. The classroom must lend itself to the development of a literacy of power, allowing a critical understanding of hegemony, ideology, positionality, and hierarchy within community, societal, national, and global systems. Students need to be fluent in the area of systemic oppression, subjugation, and domination, including its beginnings, practices, and culture. The arts are not absolved from these issues, and whether a student will work in the art world or not is irrelevant; students still need to understand and deal with these issues to maximize the negotiation of their identity wherever they are, whether in private or expanding public spaces. As we see art as a part of our everyday life, we translate this vision into ideas for use in the classroom to form a different type of student, teacher, and pedagogy. Exposing students to the realities of life through critical art pedagogy allows both students and teacher to think for themselves and with others in mind. We are speaking of the freedom to think and to be aware, challenged, questioned, provoked, and incited—the freedom to deal with complexity as one redefines learning, education, teaching, and art and, most important, the pre-K to 12 curriculum.

Command of Pedagogical Content in Students' Work

Pedagogical content may include writing, research, communication skills, and appreciating learning as a lifelong endeavor. Through this component the learning that takes place in an art classroom is diversified, expanded to encompass venues beyond the classroom. In addition the work accomplished in class is maximized as each student is required to research topics and issues pertinent to projects and to write and communicate their ideas, visions, and intentions. At this juncture the art student becomes scholar and artist simultaneously, learning to increase his or her ability

to seek and cross-reference information; articulate ideas, emotions, and perspectives; and see learning everywhere far surpassing any institutionalized containment of cultural capital. This requires that students turn in documentation of research done for projects and writing assignments related to the issues presented in class or to projects that are individually or teacher generated. These skills are necessary in any walk of life, but we bring particular attention to them in the art classroom, because traditionally the art classroom has not been a place for this form of scholarship, certainly not for all students. This component also contributes to the reconceptualization of art pedagogy as it allows for the development of different types of artists who can raise public awareness on multiple issues and who can also continue to be agents of change.

Collaborative Works, Exhibitions, and Publications

As stated earlier, making one's ideas and work public is a crucial step in the pedagogy of art; the point of these standards is not to create geniuses, but to create critically conscious public artists/intellectuals who can appreciate and engage in art within a sociopolitical, historical, psychological, and kinesthetic context. Students should have ample opportunities to work collaboratively as well as individually. In working collaboratively, students must divide the labor and discuss needs, purpose, resources, and parameters. They learn how to negotiate their ideas within and for the interpersonal needs of the larger whole.

Students should actively show their work. Teachers should facilitate this as much as possible, yet students should develop autonomy in making gallery spaces where there are none, redesigning public space for the appreciation and engagement of the arts. The expansion of public space offers the individual who understands how to negotiate this space a larger platform and a greater voice. In addition to producing and exhibiting art both individually and collectively, students should write, research, and publish. We expect teachers to be active researchers as well. There are multiple venues where students can begin to publish outside of local newspapers and magazines, such as scholarly journals, edited books, and national magazines. The development of voice in the written and spoken word is extremely important to the development of students' visual, aesthetic, and sociopolitical language. Publications by students and teachers redefine the scholarly/academic and public landscape, reconfiguring power hierarchies concerning who has access to these spaces and whose voice is heard.

Internships

Internships to artists' studios, galleries, museums, art fairs, marketplaces, offices, theaters, playhouses, designers' workplaces, agencies, or

publishers should be organized through the school or community by the teacher and student. The internships should last from four weeks to half a year depending on the site and student. The objective is to expose the student to the workings of different spaces in the art world, as well as to different artists and processes. Students by no means should become gofers for the sites in which they intern; they are there to gain as much knowledge as possible. These internships should be treated as apprenticeships when possible. The purpose of the internship is to expose the student to types of learning that occur outside the classroom, to maximize the understanding of how art works in the "real" world. Internships not only complicate the safety of the classroom but also provide multifaceted challenges to students' perceptions of process, possibility, recognition, demand, and commitment to ideas or intent. These experiences offer a different understanding of time and space related to the production, exhibition, or selling of art. As students continue their learning outside the classroom, it inevitably affects the learning that takes place in the classroom, where students learn from others' experiences. The networking possibilities for students and teachers are prime as the settings for internships increase, creating great contacts for future employment. We want both teachers and students—and others working in the art world—to commit to a greater community of artists.

Complete Theorizing of Practice and Practice of Theory

This component alludes to an integration and application of what is read and done through ample discussion, including how students are interpreting the information they are exposed to and how they apply it to their work. We believe that problem-solving and communication skills will be developed through rigorous exercising of these skills. This component is more of a reminder that through the execution of the other nine components there is a consistency between theory and practice. Students should see a connection between the research or readings they are asked to complete and the projects in which they participate. Students must also have the space to experiment with different ideas, media, formats, and genres. Engagement of students into the discourse will create an interactive relationship between personal and social being. Firsthand knowledge is the knowledge of doing. In support of "doing" are secondhand knowledge production components: seeing, interpreting, and listening. These skills will increase self-reliance in the face of complexity. Public artist/intellectuals have a responsibility to the society or community in which they live to be sensitive and aware to the issues that affect its members. Without this "conscientization," Freire (1995) states there is no practical access to a democratic way of living. The wedding, or merging, of theory and practice only

enhances the students' capacity to make sense of their world and ideas. Theory is often considered alienating, yet we can't imagine any other way to expand the scope of pedagogical space immediately without using theory. Theory opens windows of possibility, clarifying the otherwise unexplainable, whereas practice concretizes the ideas, philosophizing behind the scenes, so to speak. The practical element is essential in that it allows for a firsthand realization of one's capacity or ability, as well as a chance to relate an experience with similar ones. Theory and practice complement and enhance the potential each offers; their merging allows a greater understanding of any phenomenon, ultimately empowering and equipping students and teachers with more tools to use in negotiating their identity.

Characteristics of the New Standards

Recognition of the necessity for new or revised standards in art pedagogy for pre-K to 12 classrooms is long overdue. We can no longer hide behind superficial standards that give youths an incomplete picture of the arts in our society. Standards are necessary as guidelines for our practice, as frameworks for pedagogy and learning, not as scripts or methods of accountability and surveillance. The arts in schools have been kept at the margins at the expense of students, teachers, and all other disciplines. It is offensive to reduce the arts to holiday crafts, worksheets, or playtime, while rendering sound bites of history, purpose, and motivation. We believe strongly in a critical arts pedagogy that engages the whole individual, not limited to what is convenient in the classroom. Through these standards we propose to change the rituals of art pedagogy, as well as student and teacher experiences of art. We expect to redesign its instruction, development, and experience so that the arts, in all their multiplicity, are accessible to the whole student body. Through these standards, claims to truths about art in our lives and the world will be questioned, scrutinized, and demystified in order to make the arts central to the process of knowledge production. These standards also challenge a system of education that devalues and silences teacher and student voices, narratives, and works. This chapter proposes that students and teachers not only produce art, but exhibit, publish, research, and partake in a greater community of artists. The established parameters of education will be dismantled, leaving plenty of open spaces for innovative pedagogy.

The proposed standards may seem idealistic, perhaps impossible for some, yet they implore readers to take risks in redefining education in ways that unleash realistic democratic possibilities. If we don't take any risks, we cannot truly test our capacities and who we are as educators and artists, nor can we challenge the institutions that systematically prohibit access to the promises of our so-called democracy. If teachers and students don't take these risks, and if support isn't

given to accomplish these goals, the connection of theory to practice—that is, the relevance of schooling— will be lost. Intelligence, ability, and potential have to be redefined in order to reconstruct a society that presently is debilitated by stratifications of power, class, and assumptions of superiority that limit the progress of all its members. These standards not only reformulate arts education but have substantial implications for the preparation of teachers and the development of society. At the risk of sounding grandiose, we can state with certainty that these standards engender transformation. However, we understand the commitment adherence to these standards would require, the hard work entailed, and the potential for both success and failure. No matter how they are taken up or what modifications occur to suit the population and personalities involved, these standards force thought and, most important, a reevaluation of what is necessary to learn in ways that are life changing, empowering, and inspiring. We don't suggest their implementation is an easy task, yet out of struggle and tension pedagogy and insight result. Out of growth, pain and discomfort (in the form of awareness) surge, yet without these we may almost forget we are alive.

These standards also complicate issues of quality in viewing, interpreting, and creating art, so that "good" art does not equate to "pretty" or "aesthetically pleasing." These standards expose elitist definitions of art, with their designations of talent, genius, and creativity. Even though we share some of the components of the Disciplined-Based Art Education and ARTS PROPEL programs,[5] we differ in important ways: We are working to invert power hierarchies and open the gates of the art world as opposed to reifying the canon of art history, criticism, aesthetics, and production; we do not wish to dictate procedure of art classrooms around the nation. We propose to expose both students and teachers to various art forms ranging from the traditional painting, sculpture, textiles, and photography to graffiti, video, performance, digital, conceptual, and mixed media, as well as forms not yet imagined. Resistance to the unjust and close-minded, that is, counterhegemonic practices, must be central to the development of a new arts education. Exposure to varied schools of thought in relation to the arts is crucial to the growth of the student as individual and social being. These standards challenge the student and teacher; they allow us to trust the potential that is untapped in the generic positions of student and teacher. Our standards value and respect the knowledge both teacher and student bring to the classroom, viewing teaching and learning as a multidirectional highway where knowledge is found at every turn. These standards don't privilege one type of knowledge over another, but work hard to encompass a multiplicity of resources for maximizing the pedagogical content, as well as its diversity and significance.

We don't prescribe set activities or projects; that would be antithetical to

the ideas we have proposed. We want our standards to be flexible enough for use in any classroom across grade and region. We also believe in the benefit of students and teachers working collectively to create curriculums. This does not mean that we condone teachers' relinquishing their responsibilities in the classroom as they misinterpret democratic practices. Constructing curriculum collectively requires that the teacher have a general outline of the themes to be addressed in any given course and space be given for projects that are relevant to the student and level of the course. Different priorities may be present as the age, ability, and identity of the students change.

We have deliberately omitted a discussion of standards for evaluation in our desire to "push the envelope" regarding how art classes are conceived. We see evaluation as an inherent necessity as one engages in critique, analysis, research, interpretation, writing, and the production of art. The teacher and student must be active in both analysis of and reflection on their art and the learning-teaching process. Evaluation is not something that occurs after the fact, nor at the end of some event or experience; it happens simultaneously, every step of the way, and more publicly as critiques are enacted and portfolios submitted. Both critiques and portfolios must be designed according to the parameters of the class and projects assigned, with attention to whether the portfolios or selected pieces will be submitted, exhibited, or presented elsewhere. All of these factors change the scope of the critique and portfolio.

The larger purpose of these proposed standards is to offer a different course of action in arts education: to reinsert confidence in art teachers and possibility in students of art. This chapter is only one piece of the larger project proposed by this book: to inscribe a new type of rigor, reform, and quality of education that supports the needs of the twenty-first century. We invite all concerned to invest in the arts as a space for public and private debate on the issues raised in this chapter.

Notes

1. As the chapter unfolds, creativity is addressed in further detail. Suffice it to say at this point that we see creativity as a learned skill, not an innate gift. What we mean by knowledge production is the active, critically aware learning we develop when allowed to make sense of the lived world.

2. Artist/public intellectuals are individuals who understand their public/social responsibility. They often take this understanding as the core of their work as they critique institutions and systemic oppression and subjugation. These individuals are committed to addressing issues of social justice, freedom, democracy, and access. They have developed a critical consciousness of the world around them and their identity, however complex it may be. An intellectual is redefined as someone working for the people, willing to fight systems of oppression for the larger good. Gramsci used the term *organic intellectuals* to refer to those exercis-

ing counterhegemonic practices, teaching people to think. More on this subject can be found in *The Prison Notebooks*, by Gramsci and Buttigieg (Columbia University Press, 1996). Other theorists to consult for further reading are Henry Giroux and Carol Becker.

3. For further reading, see L. Villaverde (2000) "Arts Education" in D. Gabbard's (Ed.) *Knowledge and Power in the Global Economy* (Erlbaum, 1999).

4. The idea of the sign, signifier, and signified was developed by Ferdinand de Saussure in his book *Course in General Linguistics* (Open Court Publishing, 1988). Discussions of his work can be found in any book on literary theory. We suggest Terry Eagleton's introductory book.

5. For further reading about these two programs, refer to R. Cary's *Critical Art Pedagogy* (Garland Publishing, 1996).

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THE STANDARDS MOVEMENT

Issues, Problems, and Possibilities

Valerie J. Janesick

Some set great value on method, while others pride themselves on dispensing with method. To be without method is deplorable, but to depend on method entirely is worse. You must first learn to observe the rules faithfully; afterward, modify them according to your intelligence and capacity. The end of all method is to seem to have no method.

—Lu Ch'ai, *The Tao of Painting*, 1701

Although the words of the epigraph were meant for students studying painting, they resonate with the current interest in standards in education. With apologies to the Chinese master painter, Lu Ch'ai, I begin this discussion with the notion that we are at the point of "depending on method." Let me explain by looking back at the history of the standards movement, often linked to the educational reform movement sparked by the report *A Nation at Risk* (National Commission, 1983). Of course one can easily claim that educational reform has been a pastime for over a century. However, more recently individual educators and professional organizations have demanded standards as a remedy to almost every educational problem. While school reform might be operationally defined as "anything you can get away with," the bulk of reforms in the United States seem to exhibit eight general characteristics. Consider these points regarding school reform movements recently elucidated by Orlich (2000):

1. The reforms are politically inspired and coerced by state governments.
2. The stress on higher student achievement is based on standards-based reports that were prepared by professional associations, not by local school boards.
3. Content standards tend to be collections of outcomes or stu-

dent behaviors, assembled in a nonsystematic manner and without content hierarchies clearly shown.
4. Cost-benefit analyses are lacking in the reports on state school reforms.
5. Control of education has shifted to the national and state levels and away from localities.
6. The reform agendas, though fragmentary, are broad in scale and encompass most of the fifty states.
7. The education reform movement is theoretical; its basic premises are grounded not in empirically sound studies but rather in political enthusiasms and intuitions.
8. Implied within these reforms is the conclusion that, as a consequence of standards and high-stakes state testing and assessment programs, there will be a dramatic increase in student achievement.

The time has come to challenge the premise that massive funding, written standards, and a firm resolve to create reform will cause students to achieve at higher levels. However, there are developmental limits to student achievement. Other writers have argued that the notion of setting high standards for all students is hard to resist. It is difficult to argue against high standards. Yet if we look deeply into the complex issues related to standards, this house of cards may easily crumble.

Problems with the Standards Movement

Keeping in mind the aforementioned eight characteristics of educational reform movements, think about the standards movement framed with the following questions:

Who benefits from setting standards?
Whose voice is taken into account when the standards are formulated?
Are we creating new inequalities by advocating standards?

Gratz (2000) correctly argues that reforms, especially the standards reforms, present us with the problem of overpromising and underdelivering. In addition, he points out that even if a new idea is tested in one setting, it may never be suitable for widespread implementation. Gratz reminds us that educational accountability is in its infancy and most often relies on the single measure of test scores. The extremely high monetary cost of the tests themselves and the upkeep of all the preparatory materials illustrate the high cost of testing. Clearly, the testing industry benefits from encouraging testing. In addition, testing is often handled questionably. Some educational leaders have suggested that the teacher actually teach for the test alone, thereby casting teaching as test preparation. In fact, the standards movement was initiated with grandiose aims such as world-class high standards. Yet in actual cases, like that

of the state of Texas, the standards movement has become distorted by politics and expedience. Let's look more closely at what happened in Texas, for it illustrates the political and economic consequences of the push for standards.

The Texas School Reform Case

Spoon feeding in the long run teaches us
Nothing but the shape of the spoon.

—E. M. Forster

Linda McNeil (2000a) performed a thorough analysis of the contradictions of school reform. In her book on this subject, she examines the reform movement in Texas from the mid-1980s to the present time. In her first study, she documented and tracked standardized reforms from their beginnings in the state legislature to their effects on the curriculum in schools, including teacher reactions and subsequently student achievement. The "reform" in Texas, begun by Ross Perot, took local control of schools away from the public and professional teachers and put it into the arms of business-controlled external management and accountability systems. This major shift from public to private is a key underlying and barely examined reality. The accountability system in Texas, called the Texas Assessment of Academic Skills (TAAS), is promoted for the following reasons:

- It has shaped up the schools
- Teachers and principals are held accountable for test scores
- "Performance contracts" are used for evaluating principals on the basis of test scores
- Test results are used for decisions about school practice

Mr. Perot was articulate about how to improve schools through testing, arguing that "if it's good enough for business, it's good enough for schools." The injection of a business orientation as well as a political one complicated matters even further. But McNeil (2000a) looked closely at the evidence and pointed out the flaws in this simplistic approach to education. First, she raised the issues of historical inequities in funding of schools, staff allocation, investment in materials, and support from the broader community. In fact, many writers have pointed out that what drives the standards movement in general can be distilled into two assumptions, both based on fear:

1. Our nation is losing its competitive edge so we must demand more from all students. We are falling behind other countries, and in order to compete in the global marketplace, we must push students to learn more and faster. We can do this by raising standards.

2. If we raise standards for all students, we automatically address the disparity between high and low achievers. Minority students will benefit, since they are generally found in urban schools with low achievement records.

Oddly enough, John Dewey argued for a child-centered rather than test-

centered curriculum in the attempt to address some of the key points of the issue of inequality. In the present day, in contrast, test makers argue for more tests as the way to resolve the serious complexities of standards. By raising standards and using an appropriate test to measure achievement, it is argued, we automatically improve education and our place in a competitive global economy. If only it were that simple. McNeil (2000a) reported on teachers' reactions and changed behaviors when a mandated curriculum driven by testing was put in place. Teachers explained that the TAAS preparatory component of curriculum totally recast the teachers' and principals' roles. Both teachers and principals were silenced and marginalized. They had little voice in the matter.

Where is the space for the "public" in "public schools?" As we increase standardization, will we eliminate the voices of parents, teachers, and other community members? Who benefits most from the noise about raising standards? In the highly politicized milieu of an election year, politicians love the opportunity to get tough with standards. In fact, recently in the state of Florida, Governor Jeb Bush announced on numerous occasions that poor-achieving, poor-performance schools will be punished. Not only will the schools who "fail" to meet standards be announced in public newspapers, but they will also be punished by receiving less in terms of resources. Does that make any sense?

Mandatory tests will be used as the means for implementing state standards. Gratz (2000) argued that accountability systems designed to help students and schools almost always downplay cross-school comparisons. However, another problem emerges when test scores are aggregated: The reality of disparities within and between schools is masked. For example, a suburban school may do well in preparing college-bound students but poorly in preparing non-college-bound students. Yet by aggregating all the scores, someone looking at the test data may see the school as excellent. Thus, the way data are reported may have political, racial, and economic overtones.

A Curriculum or a Noncurriculum

In Texas, McNeil (2000b) reported that in many of the schools she studied, large amounts of time were used practicing for tests. Students practiced "bubbling in" answers, learning to recognize that test makers never have the same letter choice for a correct answer three times in a row. In fact, to help students remember this fact, a catchy phrase was repeated: "Three in a row, no, no, no." What are we to make of this? In addition, principals who participated in the study reported using the lion's share of the budget to purchase expensive study materials. McNeil's book (2000a) contains more extensive examples of the problems involved in standards and testing.

Texas is not the only state preoccupied with standards. Research done in California and Nebraska on this issue

shows that some schools can improve but most do not have the financial support to do so (Mohrman & Wohlstetter, 2000). The authors offer networking and partnerships as a solution to offset the heavy cost of school improvement and reform. At the same time, they stress the enormous cost of what needs to be done in schools if we are to improve achievement authentically for all students. Schools must have an infrastructure to accommodate and support the host of reforms, requirements, and ongoing demands of the curriculum. In a climate of few or shrinking resources, there is little hope for the success of any reform.

A Major Contradiction: The New Discrimination

The most distressing aspect of centralized, standardized testing is that it masks ongoing inequality. McNeil (2000a) and others have pointed out that minority-group students, who may be disadvantaged to begin with, are now thrown into the pool of the entire school. As the curriculum narrows to a focus on test preparation, a new kind of discrimination emerges. Instead of outright tracking and stratification, the new discrimination uses the *appearance of sameness* to cover up inequalities. The "back to basics" movement is historically rooted primarily in the mistaken notion that sameness produces equity. Nothing could be further from the truth. One would have to look far and wide to find evidence that standardization brings up the bottom-scoring students. In McNeil's (2000a) text, she argues persuasively, based on the Texas case, that the TAAS system is actually harming students, teaching, curriculum development, and the public's faith and trust in public schooling. This makes sense given the almost unquestioned faith among many in the business model so prominent in states like Texas. McNeil (2000a) argued that replacing a rich curriculum in poor and minority-population schools with drill and repetition exercises is the new discrimination. Even if standardization and drill and repetition exercises raise scores in the present moment, children's learning is not often enhanced or enriched.

Currently, research is in progress to examine these issues in Texas. Haney, Madaus, and Lyons (1993) began questioning the trade-offs in standardized testing and are expected to have a published report on the Texas case in 2001. In an unpublished paper, Haney (1999) reported on a study of dropout rates before and after the TAAS system was implemented, encompassing the years from 1978 to the present, using data collected by the Texas Education Agency. McNeil (2000a) summarized Haney's disturbing preliminary results. In 1978, more than 60 percent of black students and nearly 60 percent of Latino students graduated from high school: 15 percent below the average for white students. Yet by 1990, four years after the inception of the Texas reforms, graduation rates for all three groups dropped. By 1990 fewer than 50 percent of all black and Latino ninth graders made it to gradu-

ation. The graduation rate for whites was 70 percent. Thus, the gap between minority-group students and whites actually grew! Even more problematic, Haney found that by 1999, the white student graduation rate grew back to about 75 percent, yet the rate for minority students remained at below 50 percent. How can this program have enhanced or enriched the curriculum or student learning? McNeil concluded that we are creating new inequalities and that we cannot avoid a serious reexamination of the problem. I return to the three questions mentioned earlier: Who benefits from standards? Whose voice is taken into account when standards are formulated? Are we creating new inequalities in advocating standards?

Easy Answers to Complex Questions: The Manufactured Crisis

Facts are stubborn things; and whatever may Be our wishes, our inclinations, or the dictates Of our passions, they cannot alter the state of Facts and evidence.

—John Adams

When faced with criticism of the public schools, many look for easy answers or quick fixes. Often arguments are weak, such as "American students don't work hard enough"; however, there is little compelling evidence to support such a claim. Will students work harder with drill and repetition or with cognitively and developmentally appropriate work? Berliner and Biddle (1995), warning against the rush to easy answers, conducted research over time trying to get at the public distrust in education and the myths, fraud, and outright attack on education. Their text is the most powerful repository of evidence arguing against the politicization of the issues of standards, testing, and school reform in general. These writers debunk the phony claims and false statistics used by newspapers, politicians, and others. With mounds of evidence, Berliner and Biddle demonstrate that in fact schools are performing amazingly well given that in a short span of thirty years or so, schools have widened their pool of students by including the disenfranchised in every so-called measure of accountability. For example, the authors counter, with evidence, politicians' claims that SAT scores are dropping, that private schools are better than public schools, and that privatization of schools somehow will fix all the problems. The data show that these kinds of claims are almost impossible to support. The authors refer to the myths as the "manufactured crisis"; dismantling one myth after another, they uncover some of the threads that relate directly to the standards movement and its endless problems. Following is a list of some of the myths the authors have pulverized:

1. Student achievement in American primary schools has declined.
2. The performance of American college students has declined.
3. Intellectual abilities and abstract-problem-solving skills have declined.

4. America's schools always come up short when compared with those of other nations.
5. America spends more money on schools than other nations.
6. Investing in schools has not brought success; money is not related to school performance.
7. The productivity of the American worker is down.
8. American teachers are not prepared to teach.
9. Private schools are better than public schools.

Berliner and Biddle show that these claims are utterly phony, manufactured not to help students or teachers succeed but to conceal the facts. The authors carefully follow, starting in the 1980s, the deliberate attack on schools and relate it to the change in the political milieu at that time. At that time, the business and industry model took the place of the social services and learning model. The authors show that these myths are not only foolish but harmful as well. The harm comes in preventing students of all groups from learning, and additional harm is found in the simplistic notion that all can be fixed with simple solutions. Berliner and Biddle's book (1995) provides a context for understanding how the standards movement and testing as the easy answer can be framed. In addition, the authors correctly state that if we are to have effective school reforms of any type, adequate funding and a structure for reform should be the first goal. In short, simple answers can never address the complexity of the issues involved; in particular, the idea that setting standards and testing will in some way automatically ensure high achievement simple does not make sense. Of the many writers who echo these thoughts, the work of Grant Wiggins (1998) stands out.

Educative Assessment

People write the history of experiments on those born blind or wolf-children or those under hypnosis. But who will write the more general, more fluid, but also more determinant history of the examination—its rituals, its methods, its characters and their roles, its play of questions, and answers, its systems of marking and classification? For in this slender technique are to be found a whole domain of knowledge, a whole type of power.

—Michel Foucault

Standards make sense when the assessment system in place makes sense. Wiggins argues that there are equitable, fair, and authentic means of assessment. In offering a new way to look at standards and testing, he suggests these guidelines:

1. Assess the student's accomplishments and progress, not merely the total score that results from points subtracted from a collection of items. In other words, score longitudinally toward exemplary performance at exemplary tasks, not by subtraction from "perfection" on simplistic and isolated tests.
2. Devise a scheme that assigns degree-of-difficulty points to assignments and test questions,

thus distinguishing the quality of the performance from the degree of difficulty of the task.
3. Give all students the same demanding work but differently scaffolded assessments based on equitable expectations.
4. Devise a sliding grading system wherein the proportions of what is counted vary over time. Move toward increased emphasis on achievement with a weight for effort and progress.

In other words, Wiggins (1998) has suggested that there are ways to test students, maintain standards, and be fair and equitable in the process. His system of authentic assessment is based on the following premises:

1. Authentic tasks must be realistic. The task or tasks must mirror the abilities sought based on real-world engagement and discovery.
2. Authentic assessment requires students to use their judgment and imagination. The learner has to use knowledge, theory, and skills wisely and inventively to solve problems or pose problems.
3. Ask students to "do" rather than recite, memorize, replicate, or restate information. In other words, let students demonstrate what they have learned.
4. Authentic assessments are related to the real-world context in which adults are tested in the workplace. Typical tests are contextless (p. 24). Wiggins argues that students need to experience what it is like to do tasks in real-life situations.
5. Assess the learner's ability to use a repertoire of skills and knowledge efficiently and effectively to negotiate complex tasks.
6. Allow appropriate opportunities to rehearse, practice, consult resources, and get feedback on and refine performance and products.

In short, Wiggins asks us to imagine a new way to look at testing and assessment and a new way to help students learn and grow. If we follow his tenets, there is room to use information from authentic assessments in a way that is healthy, respectful, fair, and demanding for students, without reducing students' work to one, and only one, indicator.

Why *Standards* and *Testing* Are Important Words

Words are loaded pistols.

—Jean Paul Sartre

I have recounted some of the complexities of standards and testing; however, there remains a critical consideration that relates to language. If words are loaded pistols, as Sartre suggested, the words *standards* and *testing* are surely like bullets. I am speaking of the need to be careful with language, not just because of the political consequences of these words, as shown in the Texas case and others, but also because of the emotional con-

sequences of these words. If we are to take seriously proposals about setting standards and how to measure the standards, we need to be aware of the social and political effects of language. Recently, Patton (2000) argued for the importance of sensitivity to and skillful use of language while in the process of evaluating, assessing, setting standards, and measuring.

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SILENCED LIVES

The Case of Bilingual Children

Lourdes Diaz Soto

Linguistic relations are always relations of power.

—Pierre Bourdieu, 1991

This chapter examines issues of power related to the daily realities of bilingual children in the United States. How states view bilingual children's education varies tremendously, yet for the most part a deficit English-only agenda has been imposed on both children and families. This narrative views not only the standards issue but the intimate life of a bilingual child who struggled with an oppressive educational system and whose life reflects the need for educators to view the destinies of their students in the lives they teach.

Thich Nhat Hanh (1975) described a way to reach the level of wisdom of nondiscrimination, where there is no distinction between subject and object: "I have a pile of orphan applications on my desk. I translate a few each day. Before I begin to translate a sheet, *I look into the eyes of the child* in the photograph, and look at the child's expression and features closely. I feel a deep link between myself and the child, which allows me to enter into a special communion with them" (p. 57).

In discussing the relation between standards and bilingual children, it is clear that compassion and looking, really looking, into children's eyes is needed so that we can see the humanity in those eyes and so that bilingual children are not just demographic figures but human, breathing, living beings. We need to look deeply into those eyes until we can see our own reflection and how our reflection impacts children's future lives. In this chapter, I would like to introduce you to one bilingual child, George. I will relate the documents I found on standards to this child's life and, ultimately, reflect on how issues of power are linked to George's life, standards, and bilingual children's education.

George: Part 1

I hate school.
I don't want to go to school!

—Anyone's child

How often have parents heard children cry out their disdain for schooling? George was no exception. His aversion to school was common knowledge in our apartment building since the neighbors could hear his screaming most mornings. His white teacher was at a loss, because once inside the schoolhouse door George found it impossible to sit in the tiny desk in the straight rows where he was expected to spend much of his day. He had better ideas about how to spend his time. He dreamt about a life of creativity, about a life of performance, dance, and imagination. He thought his day schedule should include movement, projects, paint, magic, singing, Spanish poetry, and celebrations. Instead, he was relegated to the fourth row, fourth seat, where rote memorization, straight line reading (not even round robin), and copying from the blackboard were the norm. There were times when his body could not stand having to sit with his hands folded on top of his desk, and he would jump and prance, becoming the favored class clown, much to his teacher's dismay.

"Tell your parents that George has to learn to stay in his seat. He must speak only English at home and at school. He has to learn to fly straight or he will never make it to fourth grade." I never could understand what "flying straight" had to do with classroom behavior. As the older sister I took it upon myself to monitor George as often as possible. I'm sure my teacher thought I had some physical ailment since I jumped for the hall pass as often as possible. I would walk past his classroom and give him that older sister look that brought immediate attention. One day I found him jumping over desks, and when he saw me standing by the door he immediately dove (or perhaps flew) into his desk and folded his hands. I will never forget that huge smile and twinkle in his rebellious eyes.

It wasn't just the rigid classroom that George fought; it was also his desire to speak his home language and to be a nonconformist. In our south Bronx neighborhood, boys just were not into the arts, and speaking your home language was really "for the *abuelitas*." The teasing and the taunting were incessant. It did not help that George's vivacious personality implored him to exaggerate the way he talked, the way he walked, his colorful attire, his code-switching capacities, and his constant laughter. His long lanky legs and arms were too graceful for the likes of Enrique and Patricio. When he came home with a bloody nose or a black eye from the school yard, he would wave it away and immerse himself in his own world of creative performance and dance. The teacher also involved herself in these matters, warning my parents about George's insistence on speaking Spanish and his unconventional behavior. My father was particularly mortified

by the teacher's words and announced in our home we were to "speaka only in da Ingliss." This posed a problem since our *abuelita* only spoke Spanish. We learned to get around this since Dad worked a day job and a night job, but when he was home Abuelita had to rely in the few English words that she knew: yes, no, whadiyusay? thank you, please, and I love you.

I read from basal readers in the colonized English-only classroom of Puerto Rico. I was fascinated by words like *pocket* and wondered about the idyllic life that Jane, Dick, and Spot led. There were no palm trees in these books, and the idea of snow was completely new to me. When George came upon the basal readers, we were living in the mainland. It was at this time that he entered his stage of "basal dreaming." He would ask, "What do you think it's like to be white? Do you think all the white kids are that happy? Where do they get those ugly clothes anyway?" It was clear to him from the monocultural/monolingual sanitized basals that there was an advantage to being like Dick and Jane, that their lives were somehow happier and privileged. These white kids had everything: a house, a backyard, a bike, a sandbox, a wagon, a mother, a father, a dog, nice (albeit ugly) clothes, lots of food, a nice school, and to top it off, lots of fun.

As the years progressed George learned to act, walk, dress, and talk in ways that seemed more acceptable to the grownups. His resistance to learning English was forgotten, but unfortunately, so was his home language. In middle school he won an award for good attendance and for excellence as a crossing guard. He always maintained his sense of humor with those he loved, but he lost the twinkle, the dream, and the excitement about his career. He came to terms with learning other ways of expressing his gifts and talents. He joined the local marching band. He was never a sterling student, he still hated school, but he learned to play the school game of composure, English-only, silence, and acceptable behavior. In his senior high school play, he was the lead dancer for one of the numbers, "Fernando's Hideaway," and to this day I wonder if that was one of the highlights of his life. But I digress, since it is "standards" I am to speak about.

Standards for Bilingual Children

Standards, you ask? How states view bilingual children's education varies tremendously, yet for the most part a deficit English-only agenda has been imposed on both children and families. Children are objectified as nameless groups of ethnic children who are deficient and at risk. The gifts and talents children bring to the schoolhouse door are left by the wayside.

The Council of Chief State School Officers (CCSSO) and the Stanford Working Group (1996) released the most complete report that I could find on standards, entitled "Systematic Reform and Limited English Proficient Students." The purpose of the survey was to collect baseline data from the

state education agencies in the United States about their efforts to address the needs of Limited English Proficient (LEP) students. For most states, the writers indicate that LEP is defined as "a student whose native language is not English and whose difficulty in speaking, reading, writing, or understanding English is an obstacle to successful learning in a classroom where English is the only language of instruction" (p. 1).

Ninety percent of the states (n = 43) responded. Six states explicitly mentioned LEP students for inclusion in the "student content standards": Connecticut, Florida, New Jersey, Rhode Island, and Texas. Examples of how these six states address the needs of LEP students are as follows: In Louisiana standards are reflected in English language arts, science, and social studies; in Montana the standards include English as a second language; Rhode Island recognizes the length of time required to learn and use academic language; and Texas relies on "essential elements" standards to address bilingual and English as a second language (ESL) achievement.

In the report, twenty-five states noted that even though LEP students were not specifically mentioned in their state plans, "planning committees included parents or persons knowledgeable of LEP students." Of the eight states that explicitly mention LEP students in their "systematic plans," Arizona requires districts to show how students are included in their plans; Florida's "Blueprint 2000" specifically mentions LEP students as part of the whole student body; Hawaii's systematic plan makes specific reference to LEP students; Texas outlines strategies that give special attention to "at-risk"[1] students including LEP children. Nine states explicitly mention LEP students for meeting "performance/benchmark standards." Florida and Louisiana indicate English language arts for English language learners. The report also indicates that responses to given questions were not always clear or that respondents did not answer specific questions.

Assessing home-language speakers in their native language is essential in order to afford children the opportunity to demonstrate literacy, content knowledge, and multiple talents. Yet only eleven states (Alaska, Arizona, Connecticut, Delaware, Hawaii, Illinois, New Jersey, New Mexico, New York, Texas, and Utah) and the District of Columbia provide assessments in languages other than English. This brings up the question of how children are expected to demonstrate their knowledge when they are being assessed in all the other states in a language other than their home language. Is this legal? How much emphasis is placed on testing, assessment, and standards will determine much of what happens to children during their years of schooling. How much of a bearing does this have on the overrepresentation of bilingual children in special education (Ortiz & Yates, 1983) and the underrepresentation of

bilingual children in gifted programs (O. Diaz, personal communication, 1999)?

Regarding the "opportunity to learn" (OTL), which the CCSSO defined as the "circumstance and conditions provided to assure that each student has the quality of personnel, courses, curriculum, materials, technologies, instructional time, working space, financing, procedures for placement, and provision for special aid necessary to achieve content and student performance standards," four states noted that OTL standards apply to LEP students. For one of the states (Florida), this was a consequence of a consent decree; the other states include Alaska, Louisiana, and Massachusetts. The OTL standards are also expected to consider the unique needs of a population, and in the case of LEP students that means provision for first- and second-language instruction, the availability of trained ESL and bilingual teachers, and instructional materials that are linguistically appropriate. The OTL standards serve as a yardstick in determining the availability of basic resources.

The schools' and school districts' obligations with regard to home-language speakers are directly related to children's civil rights. Schools that simply provide access to the schools' English language programs are not guaranteeing equal education opportunities for LEP students. In the United States, the *Lau v. Nichols* 414 U.S. 563 Supreme Court decision of 1974 states that "under these state imposed *standards* there is no equality of treatment merely by providing students with the same facilities, textbooks, teachers and curriculum; for students who do not understand English are effectively foreclosed from any meaningful education." Justice O. Douglas referred to California education code 8573: "The standards of proficiency in English as well as other prescribed subjects," and to code 71, allowing school districts to decide "when and under what circumstances instruction may be given bilingually."

If children do not understand the language of the school, they are not benefiting from the instruction. Schools are expected to "take affirmative steps to rectify the language deficiency in order to open instructional programs to these students" (U.S. Department of Education, Office for Civil Rights, May 25th, 1970, memorandum).

Schools are also expected to design intervention strategies to ensure effective participation of LEP students; otherwise children's opportunity to learn is being denied. It is the responsibility of the state and federal government that school districts be made aware of these civil rights but also that schools comply and provide the most appropriate set of instructional services. Thirty-seven states indicated that they provide the local educational agencies with guidelines demonstrating the district's obligation regarding Title VI of the Civil Rights Act of 1964 and the Equal Education Opportunity Act (EEOA).

Teachers' educational background, life experiences, preservice, and in-service preparation can enhance their ability to meet the needs of home-language speakers. According to McKnight and Antunez (1999), in a response to a task order from the Department of Education for a state survey of *legislative* requirements for educating LEP students, nineteen states offer bilingual/dual language teacher certification or endorsement, and twenty-three states have legislative provisions for ESL teacher certification or endorsement.

When states were asked by the CCSSO to identify the obstacles faced by teachers in serving LEP students, few states responded, but some states did address a "needs" question where the responses included the following: lack of or inadequate training of teachers, lack of university courses to prepare teachers, lack of funding for training and materials, and limited supply of teachers in rural areas. Previous reports have documented these needs (e.g., August, Hakuta, & Pompa, 1994; Minicucci & Olsen, 1993).

A shortage of bilingual teachers can occur in states with the largest enrollment of LEP students. In California, for example, Gold's (1995) report documented over one million LEP students and a shortage of 18,000 bilingual teachers and 17,000 English language development (ELD) teachers. The total public school enrollment is expected to increase by 200,000 per year, reaching 7.2 million by the year 2005, with Latino and Asian enrollments accounting for 53 percent.

Gold notes that:

> The shortage of qualified bilingual and ELD teachers is the most important factor that inhibits improvement of instructional programs for LEP students. Without a teacher trained in language acquisition approaches, who has both general and specific cultural knowledge, and who can communicate effectively with LEP students, these students remain disconnected from the core curriculum of our schools. They are, in effect, enrolled in a track where instruction is incomprehensible. They do not have access to the same rigorous content taught to English speaking students. (1995, p. 3)

In addition, Gold indicates that colleges and universities nationwide have not responded to the demand for bilingual teachers. The available national data do not even inspire confidence that institutions of higher learning will provide future teachers who will resolve the shortage of bilingual teachers.

In spite of the fact that teacher education programs have failed to respond to this very need (which would afford their graduates' employment), there is clear understanding among professional organizations, teachers, administrators, and school board members that there is support for expanded training in order to meet the needs of teachers (with language and cultural knowledge) and the needs of

the increasing numbers of linguistically diverse learners. Gold feels that the situation can be remedied with concerted efforts by concerned agencies as a "number one priority."

A subsequent report depicting state-by-state financing of bilingual and ESL programs in America (Education Commission of the States [ECS], 2000) reveals how states allocate monies for second-language-learning children. For the most part, funding is included with compensatory (at-risk) education programs or special education programs. (States with no funding at all include Alabama, Arkansas, Delaware, Indiana, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nevada, New Hampshire, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, West Virginia, and Wyoming.) The states that do provide financial assistance to school districts vary in their support. For example, Colorado allocates less than 1.0 percent of its school aid funds to bilingual programs, while Minnesota assists school districts with one full-time-employed (FTE) teacher for each forty LEP students, and one-half an FTE teacher for twenty or fewer LEP students.

The case of bilingual/bicultural children presents a challenge to schools in the United States. Bilingual education itself is regarded as dangerous, and perhaps the children themselves are seen as "dangerous minds." The powerful arm of the right-wing bilingual education abolitionists has invaded the lives of families, the classroom, the courtroom, and institutions of higher learning, silencing children and dimming the light of hope for even initiating an intelligent dialogue about standards.

Issues of Power

The question of standards is submerged in the mood of conservative policy makers who continue to eliminate bilingual education altogether. Politicians demand standards as a part of their platform, and selected school superintendents see it as their mission.

Republican presidential candidate Governor George W. Bush's education platform (*New York Times*, 2000) stated:

> Another sign of our unity is the role of *English* as our common language. It has enabled people from every corner of the world to come together to build this nation. For newcomers, it has always been the fastest route to the mainstream of American life. English empowers. That is why fluency in English must be the goal of bilingual education programs. We support the recognition of English as the nation's common language. At the same time, mastery of other languages is important for America's competitive world market. We advocate *foreign language training* in our schools and the fostering of respect for other languages and cultures. (p. 22)

The verdict is in, and our Republican governors provided the

> key testimony: strong parental involvement, excellent teachers, safe and orderly classrooms, high academic *standards* and a commitment to teaching the basics—from an early start in phonics to mastery of computer technology. (p. 17)

In an article on colonialism and the English-only movement, Macedo (2000) notes the irony in dismantling bilingual education while encouraging foreign-language education:

> While conservative educators have been very vocal in their attempt to *abolish bilingual education*, due to, according to them, its lack of academic success, these same educators have conspicuously remained silent about the well documented failure of *foreign language education*. In spite of the general failure of foreign language education in the United States, no one is advocating closing down foreign language departments in schools. Paradoxically, the same educators who propose the dismantling of bilingual education programs, which have higher probability of producing bilingual speakers, reiterate their support for foreign language education with the aim of developing bilingualism even though the failure rate of becoming fully bilingual through foreign language education is exponentially greater than in bilingual programs. (p. 2)

One school superintendent from Pennsylvania traveled the country intent on converting schools and aiding schools, calling himself a "bilingual education abolitionist." Mr. Doluisio's role in dismantling a bilingual education program was lauded by the *Wall Street Journal* (Miller, 1996): "Bethlehem, PA, provides a stirring example of how other school districts can challenge the bilingual education orthodoxy—and win." Teachers at the school have indicated that there is an overrepresentation of bilingual children in special education classes and an underrepresentation in gifted programs. In addition, teachers seeking sabbaticals from this district must delete those "dangerous" bilingual education courses from their plan of study in order to obtain approval.

The work of the right-wing "bilingual education abolitionists" and the English-only proponents has been deliberate, insidious, and without the least regard for children's linguistic human rights, civil rights, and rights to an equitable, just, and excellent education. Rarely are children's linguistic human rights (see Soto & Quesada, in press) or civil rights the focus of the debate.

Children have the linguistic human right (LHR) to learn their home language or mother tongue and at least one of the official languages of the nation. LHRs also include (a) the right to establish and maintain schools that include home language, home culture, and second language learning; (b) the guarantees of representation in political affairs, and (c) autonomy with regard to issues of culture, religion, education, information, and social affairs.

Often individuals and groups are

treated unjustly and suppressed by means of language. People who are deprived of LHRs may thereby be prevented from enjoying other human rights, including fair political representation, a fair trial, access to education, access to information, freedom of speech, and maintenance of a cultural heritage (Skutnabb-Kangas & Phillipson, 1995).

The forced inclusion into a monolingual and somewhat monocultural system has meant that children throughout the world have been punished for speaking their home language. In fact, formal education through the medium of majority languages has often forced minority children to assimilate and change identity. We are reminded of the definition of *cultural genocide*—"this transfer can, of course, be either physical or psychological or both" (Skutnabb-Kangas & Phillipson, 1995, pp. 72-73).

Is there concern that perhaps bilingual/bicultural children's "dangerous minds" might actually ring out with democratic ideals or perhaps that the dangerous minds might outperform their counterparts? Ramirez, Yuen, and Ramey (1991), for example, indicated that late-exit bilingual models (greater time spent with the home language) accelerated children's achievement over time, so that the students almost caught up with English speakers, and the San Francisco and San Jose school districts demonstrated that bilingual graduates can outperform English speakers (*San Diego Union Tribune*, 1998).

California's proposition 227, eliminating most native-language instruction in a state with 40 percent of the country's LEP students, stands as an example of how politically motivated nonexperts are deciding the fate of linguistically and culturally diverse children. James Crawford (personal communication, 1998) wonders if "one might as well ask the electorate to mandate a treatment for AIDS or to select the design of the next space station" (p. 7).

It appears to be only when the needs of mainstream, monolingual learners are of concern that we see a proliferation of programs involving bilingualism (e.g., the two-way bilingual programs). The notion that dual-language programs are politically acceptable reflects the self-serving and individualistic notions of contemporary Americans. Rather than protecting children's linguistic human rights, these programs ensure that there is a benefit for the majority culture. The bandwagon race for the two-way programs is seen as a win-win strategy, but are bilingual children truly benefiting from these program? Valdes (1997) cites the Oyster School, in Washington, DC, as a dual-language program in which English speakers are singled out and rewarded for learning Spanish, yet Spanish speakers are not lauded for learning English. Freire (1985) indicated that "it would be extremely naive to expect the dominant classes to develop a type of education that would enable subordinate classes to perceive social injustices critically" (p. 102).

Schools in America continue to impose an ideology that totally disregards and disrespects linguistic human rights. The expectation is for total (dis)assimilation of home language and bicultural citizens. For children, and especially for young children, issues of language and culture are intertwined, complex, and directly related to the formation of a healthy identity as members of a family and a nation. Issues of linguistic human rights are directly related to child-rearing practices and the family's ability to actively engage in intergenerational family communication. How will children deprived of their home language (a) maintain their family's cultural practices, (b) have access to information, (c) participate in the politics of a nation, and (d) have equal access to education? One privileged colleague (from Texas) was alarmed when some of us suggested that our professional organization boycott California when the Unz amendment was being considered. Her rationale: "We can't create hostility with the companies who have done so much for us. We will hurt our own people. . . . After all *they* are the maids in those hotels." I thought about Freire's words: "Ultimately the oppressed instead of striving for liberation, tend themselves to become the oppressors . . . the very structure of their thought has been conditioned by contradictions of the concrete, existential situation by which they were shaped . . . this phenomenon derives from the fact that the oppressed, at a certain moment in their experience, adopt an attitude of adhesion to the oppressor . . . the oppressed find the oppressor their model" (Freire, 1970, pp. 29–30).

Are we relegating bilingual children to continued oppressive positions in America? Bilingual/bicultural children face daunting challenges in educational settings that disregard not only their home language and culture but the wisdom of previous generations. How do children make sense of existing educational and cultural practices? How can educators provide for the educational needs of children in ways that can make a difference in their lives? In spite of draconian conservative stances against bilingual education, educators and classroom teachers are still faced with providing for the needs of bilingual/bicultural children on a daily basis.

George: Part 2

How children perceive themselves as bilingual/bicultural subjects is complex but ultimately related to sociopolitical, sociohistorical, and power relations. Freire (1970) pointed out that "for cultural invasion to succeed, it is essential that those invaded become convinced of their intrinsic inferiority. . . . The more invasion is accentuated and those invaded are alienated from the spirit of their own culture and from themselves, the more the latter want to be like the invaders: to walk like them, dress like them, talk like them" (p. 151).

George ultimately forgot his home

language, for the most part, except for an occasional sprinkling of colorful Spanish words and code switching with his family. He did learn to please his teachers, but he lost much of his dream and creativity, and that special gleam in his eye.

When I helped to care for George on his deathbed—he died of AIDS—I wondered a great deal about the role of education in children's lives. How differently would teachers act if they could imagine children's destiny? What would really be important in the classroom if teachers considered our lives within a larger framework? Would discrete, measurable, memorizable bits of information be as important as friendship, peace, social justice, happiness? George called us his "practicing angels."

I looked deep into George's eyes and promised not to forget his journey and to connect it with my work. His life was special and unique, but if his teachers had known, would they have acted differently? What would the standards have looked like? Would the curriculum have varied? Would the school activities have been less restrictive and more creative? Would the arts have been emphasized more? Would his home language and culture have been more respected? Would the teacher have tried to look, really look, deep into George's eyes? It wasn't until he was sick that he took up painting, but then he wasn't in school.

Colonized children in the United States have been systematically stripped of their integrity, independence, freedom, and voice. This form of educational violence and slaying of the soul has functioned to perpetuate social control. Children have been stripped of their ability to participate in school and community life; their voices are silenced, and they are unable to enter into dialogue and reflect on their daily realities and lived experiences. Ultimately, this marginalization leads to multiple and complex issues for children, including issues of identity. As the privileged assert their superiority, bicultural children continue to lead an oppressed existence while continually reaching out to the "other" with love and compassion. The movement regarding standards, curriculum, and education needs to be toward an understanding of the cultural dimensions that permeate our students' lives.

The hope lies in Kincheloe's description in the introductin to this volume of "highly skilled, scholarly *teachers* [who] research their students and their communities and analyze the curricular topics they are expected to cover. In light of such inquiry these teachers develop a course of study that understands subject matter and academic skills in relation to where their students come from and the needs they bring to school" (p. 23).

If George's teachers had thought about his needs, would his life on earth have been happier? Could he have followed his dream of pursuing the arts? Would his journey have been lighter during his years of schooling? Remember the sacred call of Thich

Nhat Hanh: "Look at all beings with compassion" (1975, p. 59).

Notes

1. Designating children as LEP has been used by state and national funding agencies. Alternate terminology includes speakers of other languages (SOL), English language learners (ELLs), linguistically and culturally diverse, bilingual/bicultural, home-language speakers, language minority, native language speakers, limited English speaking (LES), and English language development (ELD). The LEP designation continues to encourage a deficit perspective by not acknowledging the gifts home-language speakers bring to the classroom. The term *at risk* also contributes to a deficit perspective since it continues to propose what is "wrong" with children rather than emphasizing children's talents and abilities.

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REASONING READINESS

Elementary School Standards and Critical Thinking as a Developmental Necessity

Danny Weil

Much of the argument against what is termed "high-stakes testing," or assessing students based on state standardized tests, has rightly focused on such issues as the pernicious effect of these tests on minority students and the irrationality of overreliance on test scores. Many educators, students, teachers, community activists, and progressive policy makers have bravely and eloquently stepped forward and spoken up regarding class inequality and racism in schools and how high-stakes testing further exacerbates educational problems while eviscerating true efforts at educational reform.

Although these issues are crucial in understanding the role of standardized tests, they are not the focus of this chapter. Instead, I want to concentrate on the claim that the standardized tests in and of themselves are inauthentic instruments of assessment and, as such, fail to service parents, teachers, students, or the communities within which they live. For purposes of this discussion, I will concentrate on standardized testing as it relates specifically to primary school. I argue that the debate over high-stakes testing has not focused on some of the crucial questions that need to be asked when looking to devise methods and calibration mechanisms to assess learning and teaching. These questions are as follows:

- What should we be teaching students in the elementary grades and what should they be learning?
- What are the roles of standards and assessment in the conception of an education, and how can we use evaluation and valid assessment to further authentic instruction?
- What should we be assessing and why?

- Should we be assessing emotional intelligence as well?
- How do we allow for multiple intelligences and testing?
- What does it mean to be intelligent, and how would this impact on how we teach and measure student performance?
- What is a problem-based curriculum, and how can we test skills wedded to thinking?
- Should we be relying solely on one test, or should we be developing methods and instruments of assessment on a weekly or monthly basis?

These important questions and countless others represent just part of the inquiry that should be undertaken in order to begin to think rationally about and consequently construct standards and assessment instruments that further the mission of education.

As a former bilingual kindergarten teacher, first-grade teacher, second-grade teacher, and teacher of junior high school and high school, I have unfortunately heard from colleagues and administrators alike that primary school students need first to be taught skills and information before they can engage in reasoning activities that call on them to develop their critical-thinking capacities. Thus, elementary standards, these colleagues contend, should be designed to see what students know and what skills they have acquired. In fact, when it comes to teaching students to think critically, I often hear the argument that children are not developmentally ready for critical thinking, that critical thinking in the early elementary grades is not developmentally appropriate.

The argument assumes that students need an information base before they can think critically and that elementary schools should be a place where this informational base is constructed and important skills acquired. The reasoning surreptitiously maintains that students really need to be taught *what to think*, not how to think. What's needed, the argument goes, is to concentrate on teaching students in the early primary grades the myriad skills associated with reading, writing, listening, mathematics, and so on; they'll have plenty of time to think critically in the higher grades. Other teachers have maintained that primary grades should be affective centers of learning where students play, learn to feel good about themselves, and socialize. Thinking critically, maintain some, can be uncomfortable, and students in early grades should be protected from it, not exposed to it.

Learning, then, becomes reduced to teaching skills and giving information, usually divorced from context, while knowing something is equated with having information about it. Protecting students from reasoning, as opposed to engaging them in it, becomes accepted as the norm. I believe that what we should be asking is: "Where do these ideas arise from? What assumptions underlie these perspectives regarding learning and teaching?"

For teachers interested in developing the critical capacities of their students, this theoretical conceptualization of education for primary students is unsound and unsuitable. Such teachers argue that knowledge is not equated with having a lot of information. Similarly, having students engage in activities simply to show what skills they are able to execute is not equated to having and executing specific skills in the interest of developing critical consciousness. The linear step-by-step process whereby disciplines are broken into fragments and skills into isolated subparts taught outside the context of thinking, is challenged (Aronowitz, 1993). Furthermore, although students obviously need information, it is the manner within which they uncover it, interpret it, as well as use it that is of interest to those who advocate critical instruction. Will they collect information based on a problem-posing curriculum that asks them to construct knowledge in the interest of inquiry and discovery? Or will they be forced to memorize and uncritically accept information without learning to categorize it, verify its sources, classify it, form it into patterns from which they might make plausible inferences, and otherwise use information critically? How students get the information they need, how they assemble and interpret it, and what they do with it are the real issues.

It is inarguable that students need to learn the specific skills called for in various elementary school curriculums. For example, not being able to regroup numbers would seriously affect a child's ability to understand and perform mathematical manipulations. What is arguable is how they learn these skills, how they orchestrate these skills in the interest of constructing knowledge, and how these skills are employed in a self-conscious, metacognitive manner.

While teachers of reductionist learning argue that elementary school skills can and often should be taught in rote isolation, advocates of critical thinking claim that the obsession with teaching skills isolated from thinking is actually the problem. The modernistic elementary school, with its necessity to teach fourteen disciplines, has created a factory orientation toward teaching and learning. Take your spelling book out, put your spelling book away. Take your math book out, put your math book away. Take your science book out, put your science book away. This obsession with systematically deconstructing disciplines into subparts represents an attempt to teach pieces of subjects in isolation with no interdisciplinary connections. It presents knowledge unsystematically, so it consequently and simultaneously teaches unsystematic, convergent thinking. For many students, the parts never fit into the whole; they learn "skills," but the skills cannot be harnessed to critical thinking.

Take the skill of reading, for example. Reading critically and reading uncritically are simply not the same process. To read critically implies

thinking critically, a process whereby the reader actively engages in a silent dialogue with the author as an attentive, questioning participant in the process of interpretation. To simply read without comprehension represents little more than the act of decoding, what Donaldo Macedo (1994) has aptly called "barking at print." Yet reading is usually broken up as a discipline and taught as phonics, comprehension, language, and so on. When doing phonics the student is not concerned with comprehension, and understanding vocabulary is divorced from both; lists of vocabulary words are constructed for memorization purposes. Spelling is taught as a separate subject, again, usually relying on assembled lists to be memorized.

By taking a subject like reading and breaking it down into component parts to be taught as separate entities, we never show students the interdisciplinary connections and processes necessary to comprehend what they read. They do not get a feel for how the parts make up the whole and the subjects and skills taught within them become so many beebees in a bag. The following story, which I have given students in the fifth grade, demonstrates the difference between fact and inference:

Is It Fact or Is It Inference?

Please read the following paragraph. Classify each of the following statements as either FACT or INFERENCE. A statement is a fact if it can be easily verified by checking its source. A statement is an inference if it is a statement about the unknown based on what is known.

A businessman had just turned off the lights in the store when a man appeared and demanded money. The owner opened a cash register. The contents of the cash register were scooped up and the man sped away. A member of the police force was notified promptly.

1. A man appeared after the owner had turned off his store lights.
2. The robber was a man.
3. A man demanded money.
4. The man who opened the cash register was the owner.
5. The store owner scooped up the contents of the cash register and ran away.
6. Someone opened a cash register.
7. After the man who demanded the money scooped up the contents of the cash register, he ran away.
8. While the cash register contained money, the story does NOT state HOW MUCH.
9. The robber demanded money of the owner.

The story concerns a series of events in which four persons are referred to:

The owner of the store
A businessman
A man who demanded money
A member of the police force

The following events in the story are true:

1. Someone demanded money.
2. A cash register was opened.
3. Its contents were scooped up.
4. A man dashed out of the store.

Students who could not read critically interpreted the story to mean that a robbery was taking place and that the business*man* was the owner and the owner the businessman. They brought their own assumptions to what they read, and as a result they bent the facts they were given to support their expectations. They argued that the cash register contained money and that the robber ran away. They assumed facts not in evidence and confused what they believed about the story with what they really knew. They made inferences that they concretized in their minds as fact, although no evidence in the story supported their contentions. In short, they didn't read the story critically; they misinterpreted it entirely.

On the other hand, students who critically read the passage realized that they were bringing their own assumptions to what they were reading. They interpreted the story through questioning, attempting to distinguish between what they knew and what they merely believed. They understood the role of inferences in thinking and did not concretize beliefs into facts. They paid copious attention to language and the assumptions inherent in vocabulary. They were able to offer evidence as to their reasoning concerning the story and why they determined something was a fact or inference. They realized that the process of reading critically is quite different from the process of reading uncritically. Yet both groups could "read."

What traditional notions of childhood education have done is to reduce early elementary school experiences, for both teachers and students, to the act of teaching and learning rudimentary skills so students can simply memorize and recite information. This form of "anorexic-bulimic" learning has depicted the content and borders for teaching and learning and left a ruinous educational legacy in its wake. Regrouping, decoding, sentence diagramming, grammatical certainty, spelling, memorizing, following formulas, and the like have all been equated with developmental appropriateness and being intelligent in elementary school. Not only has this attitude directed the methods of teaching, it has also provided a structural foundation, and upon this house of cards is built the multimillion dollar assessment, or standards, industry.

The debate continues unabated between those who believe "knowing" is a process of learning basic skills and using these skills for information gathering and retention, versus those who perceive of "knowing" as an interdisciplinary process of developing skills in the interest of constructing meaning out of a given situation or a given set of facts. Knowledge, according to the latter view, is socially constructed. This means that the knower is implicated in the act of knowing and brings to the interpretative knowledge

process her historical reality, class, gender, location, and race, as well as sets of values, personal assumptions, and experiences. Joe Kincheloe (1999) speaks to this point as he attempts to help us redefine intelligence:

> The point of intelligence, therefore, is not to just gather thoughts from memory but to find patterns in those ideas one has collected—i.e., to gather and choose apart. The process of pattern detection is not simple, however, as it involves the detection of multiple patterns depending on the context in which particular concepts are viewed. Thus the pattern that memory imposes on thoughts must be transcended, as the thinker gains the imaginative ability to see events in ways not necessarily his or her own. (p. 12)

Frankly stated, we don't memorize what we learn and we don't learn what we memorize. We see the logic of what we are attempting to understand, and through abstract, systematic thinking, we arrive at decisions, make inferences, come to conclusions, and detect solutions to problems. Committing something to memory, obviously a necessary ingredient in forming a reservoir of knowledge, is quite a different process from memorizing per se.

In harmony with these awarenesses is the understanding that one can have specific skills but not know how to execute them in the interest of the construction of a given project, set of ideas, or creation. For example, knowing how to use a hammer does not mean that one has the intelligence to build a house. This is especially true if the instruction in how to use a hammer is broken down into its parts and practiced in rote isolation from the construction of the house itself. These insights seem to be lost on those who advocate modernistic educational approaches that continue to conceive of formal thinking in elementary schools as the most valued form of thinking—a type of thinking that must be learned in fragmented, linear stages.

There are many reasons for conceiving of learning and education as mere information gathering and rote skill acquisition. The purpose of this chapter is not to discuss the myriad politically, economically, racially, psychologically, and sexually based topics that contribute to a specific modernistic, technical understanding of knowing as staged skill development and information gathering and retention. However, one issue that must be scrutinized when attempting to analyze the relationship between standardized tests in elementary schools and what they purport to assess concerns the psychological assumptions upon which these tests rely. By tying standardized tests in primary school to staged developmental readiness, specific skill acquisition, and rote memorization, these tests have been designed to assess knowledge as information retention and competency as specific skill acquisition.

On the other hand, if we change our assumptions about learning and knowing in the primary grades and

conceive of knowing as a holistic, interdisciplinary process that relies upon academic skills and their acquisition as tools for inquiry, discovery, problem solving, critical thinking, and the construction of knowledge, standardized tests would of necessity concentrate on assessing what students can do with what they think they know and how they think they came to know it. Testing would be one of many powerful tools for helping students develop thinking processes that they might use to make sense out of their daily lives. Unfortunately, as we shall see, this is not the case.

The California Standard Achievement Test—Intermediate 2 for Sixth Grade: Inauthentic Testing and Inauthentic Teaching and Learning

With the prior discussion in mind, we turn our attention to the California Stanford Achievement Test given to sixth-grade students in the state of California (Stanford Achievement Test, 1989). The test begins with reading vocabulary, and students are asked to choose a word or group of words that means the same, or about the same, as the underlined word given them. For example, Sample A states:

> Something that is *huge* is very
> A. damp
> B. big
> C. pretty
> D. bright

The test goes on to ask students to read a sentence and use the words in the sentence to help them figure out what the underlined word means. Sample B states:

> Because the child was very *cautious*, he looked both ways before crossing the street. *Cautious* means
> A. Happy
> B. Silly
> C. Playful
> D. Careful

As the test proceeds, the students are asked to read a sentence in a box. They are then to choose an answer in which the underlined word is used in the same way. Sample C states:

> He had a *ring* on his finger.
>
> In which sentence does the word *ring* mean the same thing as in the sentence above?
>
> A. He lost his new key *ring*.
> B. The teacher will *ring* the bell.
> C. The children held hands to form a *ring*.
> D. She was wearing a gold *ring*.

What these test questions accomplish is unclear. There is no doubt that students in the elementary grades need to know the meaning and definition of words. However, to test word comprehension with short, irrelevant sentences does little to foster a critical understanding of vocabulary as it pertains to the act of critically interpreting the written word. If we want students to

develop effective communication skills of which language usage is paramount, we need to be instructing them to use language in multidimensional contexts so they might see the varied uses of language. Simply knowing the meaning of a word does not adequately assess whether a student can use or understand the word within interdisciplinary contexts. Furthermore, by reducing the test to simply vocabulary, teachers are subconsciously or consciously encouraged to spend classroom instructional time to teach word recognition within fragmented, as opposed to holistic, contexts.

The test never asks students themselves to use the words, thereby helping them seat vocabulary within their own subjectivity and context and allowing the reader to see how they perform with specific word usage. And of course the reductionism within the test itself exacerbates the reductionism within teaching. Practice for this test would entail having students read small irrelevant passages similar to the ones in the test, as opposed to critically reading in depth within multidimensional contexts.

In the Reading Comprehension section of the test, students are asked to read each question about the passage. They then must decide which is the best answer to the question. The students are giving the following sample:

Tall Tales

Light from the candles bounced off the dark windows and made strange shadows on the walls. After hearing Uncle Sal's stories, we all sat nervously, listening for creaking footsteps and squeaking doors. Leo was the first to speak.

"You don't really believe all those stories out the old Potter place, do you, Uncle Sal?"

"I don't know," Uncle Sal said slowly. "No one has seen Mr. Potter in town for the last five years. Some say he hasn't set foot out of the house."

1. What time of day is it in the story?
   A. Morning
   B. Noon
   C. Afternoon
   D. Evening

2. What kind of stories did Uncle Sal tell?
   A. Peaceful
   B. Scary
   C. Sad
   D. Funny

Not only do the questions contained in the comprehension section of the reading examination fail to ask for any reasoning, relying on recall only, but the test itself relies on short, irrelevant passages that are not linked from story to story. The entire conception of reading is divorced from higher-order thinking and what it means to interpret a story critically. Instead, reading is reduced to recalling the facts of a brief, irrelevant story for sequencing or recall purposes. Students are asked to perform, not think.

In her book *Contradictions of School Reform: The Educational Cost of Standardized Testing*, author Linda McNeil

(2000) reports, on the basis of discussions with teachers, that after reading only short passages like the preceding one in preparation for the test, students were actually hampered in their ability to read critically. A sixth-grade teacher found that when he gave his students a book that had won a Newberry Award, after a few minutes they stopped reading. They were accustomed to reading brief, disjointed passages, as in the sample, and simply had not learned to develop and sustain reading habits. Nor were they able to carry information from the first chapter to the next. As a result of the tests and the classroom preparation time devoted to pass it, students were actually undermining their ability to read critically. They were becoming functionally illiterate, learning *how not to read*, not how to read.

The Concepts of Number section of the test is no better. Here students are asked to read each question and then choose the best answer. Following is an example:

> Which is the numeral for twenty-three?
>
> A. 23
> B. 203
> C. 230
> D. 2003

The test encourages students to *do* math, not to *think* mathematically. Once again, no reasoning is required, only simple recognition divorced from critical thinking. Math is not seen as something that is necessary for real-life problem solving but is simply reduced to identifying numbers in rote isolation. Computation is divorced from meaningful life problems. Math is presented and constructed as if it existed in a vacuum.

The Mathematics Applications section in the test is similar. Students are given word problems and asked to pick the right answer after applying the correct mathematical formula and computation. Yet once again, students are not asked to think mathematically but instead are asked to manipulate numbers relative to trivial and irrelevant word problems. The test does not assess whether students understand the algorithms they are applying. They are never asked to explain their mathematical reasoning, reengineer and explain the thinking processes they used to arrive at the right answer, or even use the algorithm in varied and multidimensional contexts. Understanding is equated to mathematical manipulation, not mathematical problem solving within real-life contexts. The result is that preparation for the examination also concentrates on doing math as opposed to thinking mathematically, and students spend inordinate amounts of preparation time ritually manipulating numerics, often without knowing why or even caring.

The spelling section of the examination requires finding the word that is not spelled correctly by having students read a list of words. Fragmented and divorced from any relevant contexts, spelling is assessed in rote isolation from reading or writing, where words and language are used. The re-

sult collapses into the use of spelling lists and memorization of words as vehicles for passing this portion of the test.

In the Language Mechanics section of the test, students are asked to decide which word or group of words belongs in the blank. For example, in Sample A:

> He is a student in _____
> Elementary school
> Elementary School
> elementary School
> elementary school

Grammar is also tested in rote isolation from reading comprehension. Grammatical context is nonexistent. The implications for classroom teaching can be seen in boring and repetitive grammar exercises partitioned from critical reading and critical writing.

The same is true for the Language Expression section of the test, which asks students to read four groups of words. One group, they are told, forms a correct sentence; they must decide which group of words it is. An example follows:

> Since early this morning.
> Brian opened the package.
> Coming down the street.
> Somewhere in the house.

Once again, by concentrating on short, irrelevant passages, the test encourages preparation based on the meaningless manipulation of words, not critical interpretation and expression. Lacing groups of words together parades as literary expression, while self-engineered writing about relevant topics is sacrificed to preparing students *for the test*.

The test goes on to assess science by relying on short passages, as well. For example, one question asks students this:

> If you have to ride a bicycle at night, you should
> A. ride facing the traffic
> B. wear reflective clothing
> C. make noise so you can be heard
> D. carry an extra rider to help you

Students are never asked to construct or develop their own products or experimental designs, and thus we do not know what they really know about science, only what they have memorized. Further, they are never asked to explain their answers, to give reasons for why they believe what they believe. The tests fail to tell us whether students understand the scientific process, for they are never asked to observe, test, or otherwise expose scientific hypotheses and ideas to critical scrutiny.

The Stanford Achievement Test is similar to most tests used throughout the nation. From a critical-thinking standpoint, it concentrates on testing *passive literacy* as opposed to *active literacy*. The result is not simply inauthentic assessment, but inauthentic, passive teaching and learning as students and teacher alike are forced to spend inordinate amounts of time planning for inauthentic testing, thereby sacrificing what could be a

rich curriculum to phony assessment preparation. Preparation substitutes for learning.

Part of the problem with standardized testing lies with the modernistic assumptions upon which it is constructed, assumptions that serve to define notions of intelligence and to reduce learning and knowing to preordained linear stages resulting in the argument that students in the younger grades simply cannot reason. On an unconscious level, the modernistic approach to defining intelligence serves to foster low expectations of students and translates into designing bankrupt educational opportunities for their learning. This universalistic modernism has been the foundation for these tests, and it is important to examine some of the assumptions that oxygenate it.

Universalistic Modernism: Piagetian Stages of Learning

Perhaps the most important guiding psychological philosophy still dominant in educational circles today, and specifically within elementary education, is the work of Jean Piaget. Piaget's writings in the area of educational psychology have been available for more than half a century but until recently have received little critical scrutiny. Though Piaget formulated many theoretical positions regarding behavior and learning, it is his notion of developmental stages of cognitive growth that has had the largest impact on early childhood education.

According to Piaget, a child goes through cognitive developmental stages that occur as a result of a combination of maturation, physical and logical mathematical levels, social experience, and equilibration. These developmental stages were important for Piaget for they implied what was developmentally appropriate at specific ages in terms of providing learning opportunities and developmentally appropriate subject matter.

For Piaget, the process of knowing was not one that was constructed by the learner. On the contrary, Piaget psychologized the study of cognition outside of a child's particular situation in life. He observed learning as a psychological process—learning decontextualized from sociological, political, economic, and other phenomena. By psychologizing learning divorced from social and personal context, Piaget effectively removed cultural, racial, gender, and class conditions from his formulation of learning. The Piagetian formulation of developmental stages removed social interaction, diversity, gender, culture, race, and socioeconomic class from the intelligence equation. In addition, Piaget believed that the highest order of intelligence was that found in formal mathematical-scientific reasoning, the Cartesian-Newtonian ways of knowing. The entire affective dimension of learning was marginalized in favor of purely rational thought formations. In the words of Kincheloe: "Schools and standardized test makers, assuming that formal operation of thought represents the highest level of human cognition, focus their efforts on its

coalition and measurement. Students, teachers, and workers who move beyond formality are often un-rewarded and sometimes even punished in educational and work-related contexts" (McNeil, 2000, p. 10).

Accepting Piaget's theories of intelligence and learning designed around cognitive developmental stages afforded modernistic educators a structural approach to defining and measuring intelligence. It also allowed the system to develop calibrating mechanisms called standardized tests to decide which students would succeed and which students would not. These tests became "technologies of power" that operated to include and exclude (Foucault, 1977).

Schools and standardized test designers consequently focused their attention on measuring what they saw as the highest order of intelligence. This one-dimensional definition of intelligence has formed the basis and rationale for the standardized tests given to elementary school students and, by so doing, has defined the method and theory behind instruction. Piaget's theories rationalized early-childhood learning; teaching elementary school students was now thought of as a linear process that was to be undertaken in stages, based on what was defined as developmentally appropriate, even though this "appropriateness" was defined generically and outside the realm of cultural context and individual understanding.

Piaget's theories are not without their critics. In 1983, Harvard psychologist Howard Gardner startled the educational field by publishing his book *Frames of Mind: The Theory of Multiple Intelligences.* Gardner's contribution to the field of cognitive psychology cannot be underestimated. His work, for the first time, specifically challenged Western societal assumptions underlying the definition of intelligence and forcefully argued that the conception of intelligence used to construct teaching practices and the assessment of learning were narrow and theoretically shortsighted. Gardner understood that intelligence could not be reduced to measurement by some short "objective test." And Gardner was not convinced by the Piagetian notions of intelligence that measured verbal, mathematical, and scientific reasoning to the exclusion of what he called "multiple intelligences." He seemed to be aware of the social construction of knowledge, and his work challenged the linear, one-dimensional conception of knowledge. Gardner posited not only multiple intelligences but multiple ways of knowing. His work postulated that rational, Cartesian ways of knowing were not the beginning and end of intelligence but represented simply one form of intelligence. By expanding the notion of intelligence to embrace multiplicity in thought, Gardner both democratized it as a concept and challenged the preconceptions that marked both the theory and its application to assessment and learning practices. Human potential, argued Gardner, was developed by paying attention to the multiplicity of intelligences and designing educational opportunities that

would help tease out these intelligences and allow them to flourish while consequently assessing their development in the interests of personal growth and self-improvement.

Gardner's notion of multiple intelligence and his attempt to formulate a neo-Piagetian conceptual understanding of intelligence has more than mere academic implications. Gardner and others who have attempted to push the cognitive-psychological envelope have argued that a new understanding of intelligence would of necessity require a new form of teaching and learning. This, of course, would spark the need for new and different forms of assessment, a move from standardized tests to daily teacher assessments in the classroom. Adopting a theory of multiple intelligences would force the field of education to examine itself and theorize about its activities and assumptions. Similarly, it would force a new look at assessment and standardized tests: the conception of assessment as an act designed to encourage students to become self-assessors, to be able consistently to take a critical self-inventory and become continuous lifelong learners by embracing positive, constructive critique.

This notion of self-assessment, or metacognition, is foreign to current standardized approaches to testing and those who advocate their use. Challenging the current worldview regarding assessment and learning promises to reconstitute our understanding of intelligence. This will help define the activities and learning opportunities we need to provide students in the interest of allowing them to gain and examine intelligence within the disciplines they are exposed to, not to mention their own subjective lives.

Critical Thinking as Developmentally Appropriate and as a Developmental Necessity

Because Piagetian notions of intelligence view knowledge acquisition as occurring within developmental stages, many educators of young children have thought to abandon reasoning, arguing that their students are simply not developmentally ready for critical thinking. Not only does this educational posture negate the experiences that children bring to the classroom, but it rests its conclusions on the premise that students cannot do intellectual work. The result is the failure to give children intellectual work to do.

Certainly the appropriateness of instruction and specific instructional techniques is crucial to successful learning among young people. For this reason, we argue that in shaping critical-thinking activities for students in the early grades, we must recognize their developmental readiness and the appropriateness of instruction and instructional techniques. However, to abandon reasoning about conflict and problems that students confront both within and outside of school in favor of trivial pursuits designed to provide opportunities to refine and hone skills in isolation is to do a disservice to to-

day's elementary school students and to society at large.

According to psychologist Jerome Bruner (1971), if one takes into account the nature of a child's thought, then "any subject can be taught to any child in some honest form" (p. 18). Thus, beginning with and going through children's own experiences, any abstraction can be concretized in ways that allow for inquiry within the pursuit of knowing. The need, therefore, is to gear the instruction to the student's dominant mode of representation and development.

We find that students reason within their own experiences and eventually broaden their reasoning with maturity. For example, in asking students to reason about the abstract concept of environmental protection, the teacher might begin with something in the students' experience: environmental protection at home, or at school, or in the neighborhood. From there, spiraling instruction outward, she can begin to work with students to extend their understanding of environmental protection of the rain forest or the redwoods. The concept of reasoning inductively within a child's experience allows teachers to take something that they might have thought too conceptual for children and present it within a context that allows students to reason critically about the abstractions in what they are learning. As they are reasoning, they will find they need tools such as reading, writing, interpreting, communicating, and other "skills" to make sense of what they are reasoning about. In this way students come to acquire and appreciate basic skills within the context of reasoning, not separated and divorced from it. Learning begins to take on an urgency, a relevancy and appropriateness within the child's subjective and objective life.

The National Association for the Education of Young Children makes similar arguments for providing students in the early grades reasoning opportunities. In a 1987 report this group made the following points:

> The child's active participation in self-directed play, with concrete real life experiences, continues to be a key to motivated, meaningful learning in kindergarten and primary grades. . . . Meaningful learning materials and activities include . . . positive interactions and problem-solving opportunities with other children and adults. . . . Adults . . . extend the child's learning by asking questions or making suggestions that stimulate the children's thinking. . . . Six year olds are becoming interested in games and rules and develop concepts and problem-solving skills from these experiences. (p. 1)

Yet this all seems to be lost on the standardized test makers and proponents. As we saw in the Stanford Achievement Test, reasoning is simply not the object of concern.

Critical Assessment and Critical Learning

For those who propose that schooling should be designed to help students

learn *how to think* and not *what to think*, the standardized tests prevalent throughout the nation are not simply insincere methods for assessing students; they are harmful activities that promise to stupefy rather than edify. They fail to test active, critical thinking, and because they are mandated and tied to teacher and principal performance and job security, they actually perpetuate poor teaching and inauthentic learning. They create an educational environment of irrational necessity. This does not simply impose a minor disservice on educators but culminates in a ruinous educational theory and practice, a vicious and cruel hoax perpetrated on students, teachers, and the public at large.

Critical-thinking advocates argue that authentic testing would and must concentrate on helping students in the elementary grades learn to monitor their own thinking and performance, to engage in metacognition. The tests should focus on assessing whether students have understood the logic of what they are studying. As the tests are currently constructed, students have little interest in seeing if they have passed, where they might have erred and why, or what the test actually means. They do not look at these tests as tools for supervising their own thinking, which is why many students simply fill in the blanks or bubble in the "answers" without thinking. The tests themselves are irrelevant and divorced from meaning. Thus, not only are the tests inauthentic, but they fail to motivate either teachers or students to monitor their own thinking for purposes of self-evaluation and correction; in other words, neither teachers, parents, nor students profit from the test results. The real winners are the multinational corporations that publish the tests and the politicians, real estate agents, and pundits who mandate and rely on their presence. (Test scores are heralded by real estate agents as selling points for houses in "good neighborhoods.") Authentic testing would engage students in metacognition within a relevant, problem-posing curriculum. By testing reasoning, authentic assessments would actually help students to think critically, not mindlessly take tests.

An example of authentic assessment can be found in science instruction and assessment. As we saw by looking at the Stanford Achievement Test, traditional science assessment still concentrates primarily on having students passively memorize science information. Yet what is needed is to help students develop a deeper connection between scientific understanding and relevant, real-life situations as they probe the inner logic of what they are studying. In the science classroom of tomorrow, instruction should be based primarily on helping students think critically about science problems.

A good example of authentic assessment in science can be found in the Massachusetts Department of Education (1989) test question posed to elementary students concerning *endangerment* and *extinction*.

> When prairie dogs are near farms they eat farmer's crops. Because of this,

> farmers have killed thousands of prairie dogs. Black-footed ferrets eat prairie dogs. Explain what problem this poses for the ferrets and why this is a problem.

The following was one student's response:

> If there aren't enough prairie dogs for the ferrets to eat many of them will starve to death. That is because prairie dogs are their main food. If farmers kill most or all of the prairie dogs, this will be a big problem because most of the ferrets might die. This would mean that their population would become very low. This would mean that they would become extinct. Then there would never be any other ferrets. And maybe this would not just be a problem for the ferrets. If other animals depend on the ferrets for their food, they would become extinct too.

Clearly what is being tested here is scientific reasoning as it pertains to the concepts of extinction and endangerment. We can see that the student understands the logic of extinction as she:

1. Can clearly understand the problem or question at issue
2. Can clearly use language to identify the problem with accuracy and clarity
3. Can use the concept *extinction* critically
4. Can make plausible inferences based on substantiated assumptions
5. Can recognize assumptions and marshal evidence for them
6. Can understand the implications and consequences of extinction
7. Can synthesize the subject matter insights and transfer these insights into new situations

Compare and contrast this assessment question with a question from the Stanford Achievement Test (1989) for the same grade that asks students:

> Which is characteristic of an animal?
> A. Needs oxygen to live
> B. Has roots
> C. Uses carbon dioxide
> D. Uses sunlight to make food

In another authentic science assessment given in fourth grade, students are asked to illustrate their understanding of the *ecosystem*. The student is given a picture of an aquarium, with six items labeled. The student is then asked, "Which of the six items are important to use in or with an aquarium? Explain why each is important." The items include a thermometer, a plant, a light, a castle, a rock, and a snail. This activity forces students to distinguish between relevant and irrelevant ingredients in an ecosystem. To do this the student must understand:

1. The purpose of each item and its adequacy
2. The question at issue or problem to be solved
3. The underlying assumptions for the importance of specific items

4. How to make plausible inferences from the items selected
5. How to support their position with evidence
6. How to understand the implications of each item in the overall system
7. How to apply the concept of ecosystem constructively to a given situation

Compare and contrast this with the portion of the Stanford Achievement Test that provides a black-and-white picture of an ecosystem containing water and asks:

> Which of these characteristics would best suit an animal living in this environment?
>
> A. Sharp hooves
> B. Fur
> C. Branched horns
> D. Webbed feet

In mathematics, authentic assessment would look similar to that discussed for science. In a third-grade assessment adapted from the *New Standards Project* in Wisconsin in 1991, the following math problem was given to students:

> The class is told they will be getting a thirty-gallon aquarium. The class will have twenty-five dollars to spend on fish. The students will plan which fish to buy using the brochure *Choosing Fish for Your Aquarium* (available at any pet store) to help them choose the fish. The brochure explains the size of the fish, how much they cost, and their needs. Students choose as many different kinds of fish as they can, and then they write a letter to the principal of the school explaining the fish they have chosen. In the letter they must:
>
> 1. tell the principal how many of each kind of fish to buy
> 2. give reasons why they chose the fish they did
> 3. exhibit how they are not overspending and that the fish will not be too crowded or noncompatible

This item is far different from that of the Stanford Achievement Test, which asks for no student reasoning and simply requires that students look at pictures and statements and circle correct answers. Here students must write, compute, identify problems, make decisions, support their thinking with reasoning, and use the information they are given critically.

Testing Shapes the Curriculum

Linda McNeil (2000) heard the following from unsolicited correspondence while preparing her book:

> The town's head librarian loved to encourage the children of his small, isolated farming community to read. He frequently went to the local school to read to the children. Most recently, he had been reading to a class of "at-risk" eighth graders—students who had been held back two or more years in school. They loved his reading and his choices of books. He reports feeling very frus-

> trated: the department chair has told him not to come any more to read to the students—they are too busy preparing for the Texas Achievement of Academic Skills test (TAAS). (p. 15)

And in one elementary school the following chant was taught to students: "Three in a row? No, No, No!" The drill was to remind children that there would never be three answers in a row of the same letter.

These represent repressive activities that students and teachers engage in to prepare for the inauthentic Texas Achievement of Academic Skills test, similar to the Stanford Achievement Test. In many urban and suburban communities around the nation, education has been compromised and the curriculum reduced to little more than test-taking strategies to be learned in preparation for high-stakes testing. Commercial test-preparation materials are being sold to schools at alarming rates and for unconscionable profits. These materials become substitutes for the regular curriculum, and the focus of teachers and students becomes oriented around taking the inauthentic test, not providing opportunities for students to learn how to think. Because many principals' jobs have been increasingly tied to the test results, teachers are finding that they regularly have to abandon authentic teaching in favor of illegitimate test-taking preparation. Drilling students, force-feeding students information, substituting learning with memorization, abandoning a curriculum of reasoning in favor of one of acting and performing, and reducing learning to test-taking strategies—these have had the negative and pernicious effect of "deskilling" teachers and students. The result has been devastating.

If inauthentic testing continues unchallenged, we can be assured that learning will continue to focus on such menial and trivial pursuits as I have described. Raising test scores is no substitution for genuine teaching and critical learning. In the early primary grades, we should be concerned that teacher constraints imposed by standardized testing promise to disfigure true educational efforts and cripple critical learning. This is unacceptable at a time when learning how to learn and how to reason are so crucial to the sustenance of individuality and social survival. Furthermore, by defining intelligence narrowly and hierarchically, these exams ensure that multiple intelligences will not be taught to students and that students' particular intelligences will not be recognized or valued. This is an act of intellectual robbery. The fact that these tests eschew any notion of emotional intelligence or the affective dimension of learning is reprehensible and offers testimony to the callous abandonment of much of what we have discovered and learned about intelligence within the past two decades.

Summary

There has been little public questioning or scrutiny of the role of assessment and its connection to authentic teaching and learning. Propagandistic

renderings by an obsequious and maladjusted media have left parents and communities with an erroneous understanding of the nature and content of these tests and just what they have been designed to accomplish. The standardized tests imposed on teachers, students, parents, and the community have been accepted based on false assumptions of intelligence, thereby perpetrating unsound theories of how children learn and consequently depriving the public discussion of the best methods for teaching and learning. What is happening to instruction and the students it serves is virtually invisible to a public nurtured on demagogic claims by standardized test makers and their paid constituencies. This is unconscionable, and it is the role of every educator to protest the distortion in teaching and learning taking place in the name of standardized tests, particularly in the elementary schools, where the foundation of good reasoning and critical thinking must be laid and nurtured.

What is needed is an accounting system for testing that links authentic assessment to authentic learning. If this can be done, then teaching to the test can become an act of creativity as opposed to an act of intellectual abandonment. The standard debate must be transformed into a debate over learning and teaching. The tests themselves must be held accountable to a more enlightened and rational approach to knowing and what it means to be an intelligent person. Only in this way can we transform the false debate over test "results" into a real debate regarding the "process" of learning. If we as educators can accomplish this, we will have not only educated the public as to what intelligence means, but also provided a theory and structure within which critical-thinking opportunities can be afforded to all students by all teachers, regardless of class, gender, cultural background, or race.

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A CRITICAL ANALYSIS OF STANDARDS IN TEACHER-EDUCATION PROGRAMS

Nancy P. Kraft

This chapter is about the standards movement in teacher-education programs in colleges and universities around the country. Just as K–12 schools have jumped on the standards "bandwagon," the same is true for institutions of higher education (IHEs) that prepare the future teacher workforce. In examining the standards movement in higher education, several topics will be addressed. To provide a context for the standards movement, a historical perspective on how and why standards came about in teacher education will be discussed. A description of the two bodies of standards that have been developed to guide teacher education will be provided: those established by the National Council for Accreditation of Teacher Education (NCATE) and those from the Interstate New Teacher Assessment and Support Consortium (INTASC). A third set of standards—the National Board of Professional Teaching Standards (NBPTS)—which provide standards for quality teaching once in the field, will also be examined. In addition to describing the standards, I provide an explication of their purpose and an examination of the challenges, limitations, and problems inherent in standards-setting processes for IHEs. Finally, alternative suggestions for how standards could contribute positively to teacher education will be presented.

Standards in Teacher Education from a Historical Perspective

Standard-setting processes in teacher-education programs have had a long history. In 1927 the American Association of Teachers Colleges was established to develop standards and procedures for accrediting teacher-education programs to guarantee that graduates of accredited programs would compe-

tently perform services for which they were specifically prepared. About twenty-five years later, in 1954, the National Council for Accreditation of Teacher Education, a voluntary accrediting organization, came into being. The mission of NCATE then, as it still is today, is the development of rigorous standards for teacher-preparation programs and processes to determine which schools of education (SOEs) measure up to them.

Several events within the past twenty years have put the standards-setting movement in higher education into high gear. First, the 1983 publication of *A Nation at Risk* generated much fear and concern that American schools were lagging behind those of most developed nations. The end result of that report was the unprecedented standards-setting movement of the late 1980s, concerned first with content standards in the disciplines, beginning with mathematics in 1989, and then with student-performance standards legislated by the federal government in two pieces of legislation: the Goals 2000: Educate America Act and the Improving America's Schools Act (IASA) of 1994. In addition to these, calls came from the national level for IHEs to prepare teachers who are more adequately qualified, caring, and committed to teaching in our nation's classrooms. *Promising Practices: New Ways to Improve Teacher Quality* (1998), a report that evolved from the President's Summit on Teacher Quality, states that "teaching is the essential profession, the one that makes all other professions possible . . . Accordingly, what teachers know and are able to do is of critical importance to the nation, as is the task of preparing and supporting the career-long development of teachers' knowledge and skills" (p. 1).

This was the conclusion that emerged from the work of the National Commission on Teaching and America's Future (1996), a twenty-six-member bipartisan blue-ribbon panel, consisting of public officials, business and community leaders, and educators, formed in 1994 and supported by the Rockefeller Foundation and the Carnegie Corporation of New York. The mission of the commission was to provide an action agenda for meeting America's educational challenges, connecting the quest for higher student achievement with the need for teachers who are knowledgeable, skillful, and committed to meeting the needs of all students. The commission believed that if reform was to occur at the elementary and secondary level, a restructuring of the foundation—the teaching profession—was a prerequisite. This restructuring was based on two premises: that teachers' knowledge needed to increase to meet the demands they face, and that schools needed to be redesigned to support high-quality teaching and learning. The commission concluded that "children can reap the benefits of current knowledge about teaching and learning only if schools and schools of education are dramatically redesigned" (Darling-Hammond, 1996, p. 194).

The need is great for qualified teachers. By 2007, the projected en-

rollment in our nation's schools will be nearly 3 million more children than today, bringing the total to 54 million children and youths. This means that the demand for new teachers will increase over the next decade, with more than 2 million required to be hired to match the enrollment in elementary and secondary classrooms. To ease the demand, school districts often are in a bind to lower their standards and hire less-qualified teachers. This has been the case in high-poverty communities, where shortages of qualified teachers have already reached critical proportions, especially in areas such as science, mathematics, bilingual education, and special education. This is particularly true in states with the fastest growing populations such as California, Nevada, Florida, and Texas. The National Commission on Teaching and America's Future (1996) found that students in the schools with the highest minority enrollments, usually schools in high-poverty areas, have less than a 50 percent chance of having a science or math teacher with a license or degree in the field he or she teaches.

Another problem inherent in teacher education is that teachers do not receive the same training across all IHEs that prepare teachers. Darling-Hammond (1996) sums up the problem by pointing out that "some teachers have very high levels of skills—particularly in states that require a bachelor's degree in the discipline to be taught—along with course work in teaching, learning, curriculum, and child development; extensive practice teaching; and a master's degree in education. Others learn little about their subject matter or about teaching, learning, and child development—particularly in states that have low requirements for licensing" (p. 194).

To ensure quality in teaching, standards for what beginning and experienced teachers should know and be able to do have been developed. To accomplish this task three groups—the National Council for Accreditation of Teacher Education, the Interstate New Teacher Assessment and Support Consortium, and the National Board for Professional Teaching Standards—have collaborated in their efforts to establish a complementary system of standards within three interconnected systems: (1) accreditation, (2) state licensing of new teachers, and (3) board certification of accomplished teachers; these systems address a continuum from teacher preservice preparation to certification.

Accreditation

The National Council for Accreditation of Teacher Education is the professional accrediting organization for schools, colleges, and departments of education in the United States. It is a coalition of over thirty organizations representing teachers, teacher educators, policy makers, and the public. Institutions of higher education that are accredited by NCATE must demonstrate how teacher-preparation programs prepare teachers to teach to the student standards developed by pro-

fessional discipline/content associations, such as the National Council of Teachers of Mathematics (NCTM) or the National Council of Teachers of English (NCTE). These IHEs are also accountable for showing how they prepare teachers to meet new licensing standards for content knowledge and skill in curriculum planning, assessment, classroom management, teaching strategies for diverse learners, and collaboration with parents and colleagues. Schools of education participate in the NCATE process on a voluntary basis with about five hundred of the twelve hundred teacher-education programs currently seeking NCATE approval.

Having undergone major revisions in the early 1980s, NCATE has recently redefined itself and undergone another round of change. As national assessments, such as the National Assessment of Education Progress (NAEP) and the Third International Mathematics and Science Study (TIMSS), have reported that student achievement in the United States supposedly lags behind that of students in other industrial countries, the standards movement in higher education has taken an even firmer hold. The new NCATE focus is on "finding reliable and valid ways to assess teachers' performance—the ability to integrate content with ways to teach it to students in the diverse classrooms of today" (Wise & Libbrand, 2000, p. 615). Beginning in fall 2001, IHEs accredited by NCATE will use new standards that show how teacher candidates graduating from these schools demonstrate mastery of the content knowledge in their fields and of teaching effectiveness. Among the changes in NCATE standards and processes are the following: (1) Colleges will now have to prove through testing that teaching candidates actually are learning the material, not just tally up the number of courses taken and passed; (2) rather than just completing student teaching, students must demonstrate that they actually have learned the material; (3) instead of only showing they took a technology course, teacher candidates will have to demonstrate they can use technology in teaching; (4) students must demonstrate that they can teach all students, including low-income and minority students; and (5) colleges of education must conduct follow-up surveys to determine whether graduates are effective in their teaching jobs.

Licensing

NCATE's standards correlate with those developed for the next check on quality by the Interstate New Teacher Assessment and Support Consortium (INTASC). Formed in 1987 and sponsored by the Council of Chief State School Officers (CCSSO), this consortium of nearly forty states and professional organizations is guided by one basic premise: An effective teacher must be able to integrate content knowledge with pedagogical understanding to ensure that all students learn and perform at high levels. The work of this body has been the creation of a set of performance standards

for beginning teacher licensing that is organized around ten principles reflecting the core knowledge, skills, and dispositions teachers should develop in order to teach in the ways required by the new standards for students. To measure the standards, INTASC has also developed examinations that assess teaching in terms of how well teachers can (1) plan and teach for understanding, (2) connect their lessons to students' prior knowledge and experiences, (3) help students who are not initially successful, and (4) analyze the results of their practice and adjust their work accordingly.

The core standards are also being translated into standards for content-specific teaching, with mathematics, English/language arts, and science as the first three disciplines. Standards for history/social studies, the arts, elementary education, and special education are also being planned. A growing number of states have adapted and adopted the INTASC standards to guide their move toward performance-based licensing and program-approval reforms. INTASC standards are complementary to standards for highly accomplished practice as articulated by, and based on, certification processes established by the National Board for Professional Teaching Standards (Baratz-Snowden, 1994).

Certification

The third member of the triad concerned with quality assurance is the National Board for Professional Teaching Standards, established in 1987 on the recommendation of the Carnegie Task Force on Teaching as a Profession (1986) in their pivotal report, *A Nation Prepared: Teachers for the 21st Century*. The mission of the national board is to establish high and rigorous standards for what accomplished teachers should know and be able to do, to develop and operate a national voluntary system to assess and certify teachers who meet these standards, and to advance related education reforms for the purpose of improving student learning in American schools (National Board for Professional Teaching Standards, 1997). A majority of the National Board's sixty-three members are outstanding classroom teachers. The remaining members include school board members, governors, legislators, administrators, and teacher educators.

To become certified, teachers with at least three years of teaching experience complete, and submit for board review, a portfolio illustrating their teaching for one year through lesson plans, samples of student work over time, videotapes, and analyses of their teaching. As part of this process, teachers take tests of content as well as pedagogical knowledge to demonstrate their ability to create and evaluate curriculum materials and teaching situations. During the initial four years that the NBPTS was in existence (between November 1994 and November 1998), 1,837 teachers went through this voluntary certification process. Now, two and half years later, an additional 3,000 teachers have been certified, with the total reaching 4,084 by June 2000.

North Carolina, with 537 board-certified teachers, and Ohio, with 339, had by November 1998 incorporated NBPTS standards into their school-improvement plans and passed legislation that addresses teacher compensation and provides incentives for national board certification. Other states have followed suit, including Arkansas, Connecticut, Maryland, Missouri, and Kansas to name a few. Kansas, for instance, has proposed to pay $1,000 of the $2,000 fee for a limited number of teachers going through the certification process.

A Comparative Analysis of Teacher-Education Standards

Two major sets of standards provide guidance for teacher-education programs: the NCATE standards and the INTASC standards. A third organization, the NBPTS, provides standards for quality teaching once in the field. While the standards each have a different function, including teacher education accreditation (NCATE), initial licensing (INTASC), and advanced certification (NBPTS), they reinforce and complement each other through the kinds of criteria each requires in addressing the standards. Table 1 illustrates how the standards overlap and are differentiated. Criteria identifying and clarifying each set of standards are found in Appendix A.

The NCATE standards provide for a shared vision of a school of education's efforts in preparing educators to work effectively in pre-K to 12 schools. While these standards establish a conceptual framework to provide direction for programs, courses, teaching, candidate performance, scholarship, service, and unit accountability, only Standard 1 under Candidate Performance will be addressed. This comprehensive standard addresses how SOEs should provide teacher candidates with knowledge, skills, and dispositions necessary to be an effective teacher. Teachers must demonstrate in-depth knowledge of the subject matter that they plan to teach; the pedagogical skills that allow them to provide multiple explanations and instructional strategies so that all students learn; the ability to make learning authentic, meaningful, connected, and grounded in school, family, and community contexts; the capacity to research their practice through collecting and analyzing data related to their work and to engage in reflective practice and make necessary adjustments to enhance student learning; the ability to assess, analyze, and continually monitor student learning; and the ability to work effectively with students, families, and communities reflecting the dispositions expected of professional educators.

An Analysis of the Standards' Challenges, Limitations, and Problems

Many criticisms have been waged against the standards movement and questions raised about the ultimate impact that standards at any level can have on improving education. Some criticize the standards movement by

TABLE 1

	NCATE Standards	*NBPTS Standards*				
INTASC Standards	*Standard 1: Candidates possess the appropriate knowledge, skills, and dispositions*	*Teachers committed to students and their learning*	*Teachers know the subjects they teach and how to teach those to students*	*Teachers are responsible for managing and monitoring student learning*	*Teachers think systematically about their practice and learn from experience*	*Teachers are members of learning communities*
Knowledge of subject matter	X (criterion 1, 2)		X			
Knowledge of human development and learning	X (criterion 2, 3)	X				
Adapting instruction for individual needs	X (criterion 2, 3)	X	X	X		
Multiple instructional strategies	X (criterion 2, 3)			X		
Classroom motivation and management skills	X (criterion 3)			X		
Communication skills	X (criterion 3)			X		
Instructional planning skills	X (criterion 1, 2, 3)		X			
Assessment of student learning	X (criterion 3, 4, 6)			X		
Professional commitment and responsibility	X (criterion 3, 4, 6)			X	X	
Partnership	X (criterion 5)					X

saying that it "neglects large issues and constructs in a search for a simple, quick-fix solution" and that it puts a smokescreen over the real problems facing education—poorly financed schools (Nelson, 1997, p. 1). Others believe that standards can make a difference but that the emphasis is misplaced. In probing how standards in teacher-education programs have impacted quality teaching and learning, the analysis will be informed by examining standards from multiple perspectives and stakeholders: schools of education and faculty; the state, district, and school levels in the form of policies and support; and the implications of standards on the individual teacher.

Criticisms of the NCATE Process

The National Council for the Accreditation of Teacher Education has established standards that guide the work of IHEs in the preparation of both teacher candidates and teachers seeking an advanced degree. Throughout the fifty-plus years of existence of the NCATE, controversy has surrounded the accreditation process. Criticisms have been raised in several areas such as questioning who has ultimate control in defining NCATE's standards. While four major groups are responsible for the governorship of NCATE, critics claim that the NEA has too much control. The four groups are (1) the American Association of Colleges for Teacher Education (AACTE); (2) the National Education Association (NEA) and the American Federation of Teachers (AFT); (3) a variety of subject area and educational specialist organizations such as the NCTM and the NCTE; and (4) chief state school officers and members of boards of education.

Other criticisms from AACTE members have focused on how cumbersome the process of accreditation is, as well as the quality of NCATE's standards. In fact, during the 1970s, the Wheeler Report, a study conducted at Michigan State University, found extreme discontent among SOEs with both the content of the standards and the way those standards were being applied during on-site visits (Wheeler, 1980). During this time period, a group of deans, primarily from land-grant teacher-education institutions across the country, questioned the quality of the accreditation process, with several prominent teacher-education universities withdrawing from NCATE and opting to establish state-level accreditation instead. Schools of education that are considered to be among the best in the nation, such as the University of Wisconsin, have not participated in NCATE for quite some time. Consequently, one needs to ask what the value of accreditation is when SOEs with reputations for quality programs choose not to participate.

Criticisms of the NBPTS Process

A study conducted in 1997 determined teachers' views about the incentives to go through the NBPTS certification process, the contribution of the process to their teaching skills,

and the consistency between national board standards and current teaching practices (Wheeler, 1980). While the majority of the twenty-eight teachers interviewed in this study believed that the certification process was valuable and contributed to their own sense of professionalism and to positive changes in their teaching, a minority found it less useful, without impact on current teaching practices. One teacher commented that "the process did not teach her how to teach differently because no one gave her information on ways to improve instruction" (Wheeler, 1980, p. 463).

Another study that closely followed four teachers going through the NBPTS certification process found discrepancies between local, contextualized, personal, and oral knowledge of these teachers and the national discourse of the NBPTS standards (Burroughs, Roe, & Hendricks-Lee, 1998). While the national standards comprise broad statements about teaching, these tend to get interpreted from multiple perspectives depending on the local context in which teachers practice. Because the NBPTS does not elaborate on the core propositions making up the standards, the ways in which they get interpreted at the local level will be dependent on the local context. Thus, proposition 3, "Teachers are responsible for managing and monitoring student learning," can be interpreted by one teacher as giving students a series of worksheets, while another might see student portfolios as a way to manage and monitor. All four teachers in this study had a difficult time negotiating the meaning of the standards and, in particular, with representing their practice in writing. The candidates who were most successful were able to assume the NBPTS discourse values.

The certification process is a lengthy multistage process that requires much work and dedication on the part of teachers to complete. At the school site, the teacher candidate prepares a portfolio with a Planning and Teaching Exercise (PTE) that includes a videotape of classroom instruction, a Post-Reading Interpretive Discussion Exercise (PRIDE) that includes a videotape of a class discussion, and a Student Learning Exercise (SLE) that includes samples of student writing and teacher comments about the writing. These three pieces are scored at a central site organized and run by Educational Testing Service (ETS). In addition to these, candidates complete the Instructional Analysis Exercises, with an analysis of a beginning teacher's teaching at an assessment center. They also complete three two-hour essays on the teaching of literature, reading, and language development. With such a time-consuming process and without sufficient support services in the form of materials or resources to assist teachers preparing for the certification process or financial support/incentives to participate, what is the impetus for more teachers to become involved and participate in this process?

The low numbers to date of teachers who have successfully gone through this process attests to this fact. "With-

out major gains in teacher participation, national board certification is unlikely to have a significant impact on the quality of education" (Burroughs, Roe, & Hendricks-Lee, 1998, p. 463). The original goal for teachers receiving national certification was 105,000 within ten years of beginning the process. By November 1998 1,837 had undergone certification, and as of June 2000, 4,807, which is far short of the original goal of over 100,000 teachers. As of November 1998, thirty-two states had twenty-five or fewer of its teaching force board certified, with several states such as Arizona, New Hampshire, Utah, Vermont, West Virginia, and Wyoming having only one teacher each certified under the National Board of Professional Teaching Standards. As a case in point, Texas with well over one thousand school districts only had seven board-certified teachers as of November 1998. As stated earlier, even with an additional three thousand teachers having become board certified since 1998, it will be extremely difficult to meet the goal of 105,000 certified teachers by 2004.

While many teachers believe this to be a worthwhile process to undertake, the complexity of the process and the fact that it is so time consuming can lead to tension; standards may be seen as busywork rather than as opportunities to critically examine practice. Or the complexity of the process may lead to a focus on the end product of certification rather than the process of certification. A perception could exist that once one has successfully become board certified, he or she has "arrived" and is no longer in need of professional growth. Becoming accredited through the NBPTS becomes a one-time event. How does being board certified contribute to teachers' ongoing professional growth? Or how does the process of board certification lend itself to teachers' conceptual understanding of the teaching and learning process when certification seems to reduce teaching to a set of observable tasks? Just as we ask what developmentally appropriate experiences look like that move students from simple tasks to complex understandings, we need to ask the same of teachers.

Criticisms Concerning Cultural Bias in NBPTS

Concerns have been raised about possible cultural bias in the NBPTS process and what counts as a "legitimate" teaching experience (Irvine & Fraser, 1998). Researchers who have studied antecedents of achievement for black students have found a direct correlation with African-American teachers' pedagogical style with their students. Characteristics and teaching behaviors they have identified include African-American teachers seeing themselves as parental surrogates and advocates for their African-American students; employment of a teaching style filled with rhythmic language and rapid intonation with many instances of repetition, call and response, high emotional involvement, creative analogies, figurative language, gesture and body movements, symbol-

ism, aphorisms, and lively and often spontaneous discussions; and teaching with authority—sometimes defined by students as a teacher's meanness—but perceived by them as pushing them to achieve and running the class in such a manner to ensure students' achievement (Irvine & Fraser, 1998).

While the overall success rate for candidates vying for board certification has been 40 percent, the overall pass rate for African-American teachers is only 11 percent. The authors of a study that examined the NBPTS process from the perspective of race believe that there is a very strong possibility that the review process, in spite of its many technical psychometric reports that declare adverse impact but no bias, contains a deeply flawed cultural bias in favor of white, middle-class teacher norms—and against the norms that are seen by many African-American educators as most effective (Irvine & Fraser, 1998).

Other researchers concur that cultural differences may play a role in how some NBPTS portfolios are read by assessors (Bond, 1998). It needs to be determined whether the NBPTS process biases the definition of "good" teaching in ways that privilege white, middle-class, and suburban teachers. Irvine and Fraser (1998) believe that the NBPTS should be looked at from the perspective of whose standards it represents and which children the standards serve. Other questions needing to be asked include: Do teachers who work with privileged students have an advantage over teachers who work with poor students? Does the process disadvantage teachers from districts with limited resources? Do the standards favor teachers who use a constructivist teaching style and penalize teachers, like some African-American teachers, who employ more didactic strategies? Will assessors be trained to recognize and appreciate the culturally relevant styles of African-American teachers? Will the low pass rate of African-American teachers contribute to the declining numbers of persons of color who enter teacher education programs? These are critical questions that need to be addressed if the standards movement in higher education is going to support teaching excellence among all teachers and for all students.

Criticisms from Teacher Educators

The authors of a study that examined the redesign of NCATE question whether the controversy says more about the workings of NCATE or more about teacher education in the United States (Gardner, Scannell, & Wisniewski, 1966). Another report of the relationship of NCATE and NBPTS and how this partnership encourages SOEs to develop standards-based master's degree programs found six barriers that interfere with the authentic redesign of master's programs: (1) isolation and lack of a collegial culture, (2) valuing numbers over quality, (3) status of the master's degree, (4) structural barriers, (5) conceptual barriers, and (6) bureaucratic barriers (Blackwell & Diez, 1999).

The first barrier, isolation and lack

of a collegial culture, is a reality of the way in which higher education is structured, with its emphasis on specialization. If professors within SOEs do not model collegial relationships, how can we expect teacher candidates to have these skills in schools? With the training of faculty in narrow specializations and eclectic research interests, it becomes difficult to develop a coherent program. Related to this concern are structural barriers that include workload, promotion, and tenure standards that seem to work against a collegial and collaborative culture among and between disciplines in IHEs. There are problems as well programmatically: How can courses that focus on methods as well as those that focus on content be linked to the standards? While many IHEs are beginning to offer assistance for teachers preparing for board certification, without attention across the master's curriculum to the essential elements of the process—reflection, systematic inquiry, and collaboration—Blackwell and Diez (1999) believe that such incorporation may "in fact be meaningless" (p. 21).

If standard-setting processes via NCATE, NBPTS, or INTASC are going to be constructive in contributing to quality teacher education programs, we have to seriously consider many questions. Among these are the following: How do we change entrenched systems and ways of operating? How do we incorporate professional development schools into the mainstream of teacher preparation? What incentives can be used to encourage professional accreditation of schools of education, or how can board certification, so that the system develops a cadre of these recognized professionals in a reasonable time (Wise, 1996)? Tensions in SOEs between the Old Guard and old ways of doing things and the new faculty and new approaches need to be resolved if standards are to make a difference in higher education programs. Contradictions are inherent in the present system: Faculty will resist as long as tenure decisions continue to be made in the same way. If one part of the system is going to be held accountable, how does the other part of the system change to facilitate meeting accountability requirements?

Contradictory Goals of the Standards

Contradictions are apparent between the desire to create teachers who are autonomous, reflective practitioners and the continual attempt to deskill teachers by regulating what and how they teach through the increased reliance on standards and accountability measures. Eisner (2000) says much of the current debate concerning the improvement of schooling in both the United States and the United Kingdom is centered on the appropriateness of prescriptions by federal authorities of common national standards or, as in the United Kingdom, a national curriculum. When the public becomes concerned about the quality of education provided in its schools, it tends to have two reactions. The first

is to monitor more closely than it has in the past the performance of schools; this is called accountability. Second, it reiterates in the public forum its national (or state) goals for education. Through standardization of assessment and prescriptive curriculum, that is, by tightening up and reducing the professional discretional space for teachers, efforts are made to create more educationally productive schools. Ironically, at the same time that such standardization is occurring, education policies are being promoted that urge that teachers, as the primary professional stakeholders, should have greater professional discretion in program planning and in monitoring and governing "their" schools.

Consequently, there is a collision between the beliefs underlying the standards movement and encouragement for teachers to assume more professional autonomy. Another, related issue is the assumption that the mandated knowledge covered in the standards corresponds to what is perceived to be "legitimate" knowledge in a given field. One only needs to examine the contentiousness of the standard-setting process in the area of history to realize how multiple perspectives on the history of this nation have resulted in contrary views of what history content should consist of.

The reality is that standards in the disciplines, state standards, and assessments define both the content and the process of the curriculum. This is especially true in states with high-stakes testing practices such as Texas, which has adopted the Texas Assessment of Academic Skills (TAAS) test, or Massachusetts, where students can graduate from high school only after successfully completing the state assessment. The current push to tie teacher salaries to test scores, as has been proposed in Los Angeles and other cities, or the practice of publishing school report cards or tying monies that schools receive to how well schools do, as in Kentucky, has deep ramifications for teacher professionalism. Other contradictions exist in states where state boards of education assume too much control in deciding what constitutes legitimate content in a discipline, such as the 1999 decision in Kansas that relegates the teaching of evolution to local board control. One needs to ask how tests or decisions such as these, which define specifically the content of the curriculum, respect teachers as autonomous professionals and intellectuals or enable them to teach the latest research-based content in their classrooms, a value reflected in all three sets of standards—NCATE, INTASC, and NBPTS.

Criticisms Based on the Presumed Superficiality of the Standards

Another major issue confronting standards has to do with "how to get beyond the superficiality of the standards themselves." The standards are full of education jargon that unless deconstructed remain at the rhetorical level. Such is the case with standards that address issues like "understanding diversity." To address this standard, SOEs

often require one course in multicultural education, believing that this will be sufficient to prepare students to understand the issues underlying diversity or to teach in settings with multiple ethnicities. But if such a course does not enable students to better understand the multiple issues or underlying conditions of diverse populations, from the perspective of race, class, ethnicity, gender, and disability, or help students to critically assess their beliefs, values, and assumptions of "otherness," then students may possess a shallow understanding of the issues surrounding diversity and be ill prepared either to teach their students about diversity or to work in school settings with diverse populations.

The same problem occurs regarding the fourth proposition of the National Board for Professional Teaching Standards: "Teachers think systematically about their practice and learn from experience." Implementing this standard requires that SOEs provide preservice and practicing teachers with background knowledge and experience in systematic inquiry into practice, reflection on practice, and collaboration with others in meeting learners' needs, which are at the core of the standards. Reflection is one of those buzzwords in education today that everyone uses and says they are doing. But in reality, there are two types of reflection that define teacher work: technical reflection and critical reflection. Technical reflection is the "kind of thinking teachers use in making pedagogical decisions about learning environments, content selection, teaching methods, and student learning needs" (Zehm & Kottler, 1993, p. 108). On the other hand, critical reflection is defined as the kind of reflective thinking that teachers use to consciously question the moral and ethical implications and consequences for their students of their personal and professional beliefs. It involves a process of bringing into question the beliefs, values, and assumptions about teaching, learning, students, and curriculum that guide practice in classrooms and schools. Zeichner and Liston (1996) believe that if a teacher never questions the goals and the values that guide his or her work, the context in which he or she teaches, or never examines his or her assumptions, that individual is not engaged in reflective teaching .

If reflective thinking is going to enable teachers to think systematically about their practice and learn from their experiences, Zehm and Kottler (1993) believe that it needs to be more than technical reflection and should involve asking why, finding patterns, reading voraciously, taking time for contemplation, examining their own behavior, confronting excuses, and defining their professional mission. With well over one thousand IHEs with teacher-education programs and numerous faculty involved in teacher preparation, one has to ask how faculty interpret and implement reflection in their teacher-training programs. It is obvious from the increasing proliferation of papers on teacher research and reflective practice being presented at the American Education Research As-

sociation annual meetings that more and more SOEs are incorporating "action research" into teacher-education programs. A closer examination of many of these presentations reveals that action research and reflective practice have been defined as "technical reflection," with an end result of teachers doing bad research and not critically examining belief systems or interrogating their practices, which is at the heart of reflection that defines quality teaching.

Another example, standard 5 of the NBPTS, states that "teachers are members of learning communities" and as such should work creatively and collaboratively with colleagues, parents, and the community. This is consistent with standard 10 of the INTASC, which says "the teacher communicates, interacts with, and fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being" and part 5 under standard 1 of NCATE that specifies that "teacher candidates work with students, families, and communities . . ." While the core of this standard is about creating collegial relationships and partnerships with professional peers as well as the larger community, the reality in schools is otherwise. Collegial work is not the norm; many forms of collaboration are superficial, partial, or even counterproductive.

Fullan and Hargreaves (1996) differentiate between congenial collegiality and contrived collegiality and conclude that congenial collegiality is often merely comfortable collaboration. While it might involve sharing, exchanging, coordinating, celebrating, and supporting, there is virtually no talk about inquiry and reflection on practice. Contrived collegiality, on the other hand, is characterized by a "set of formal, specific, bureaucratic procedures to increase the attention being given to joint teacher planning, consultation and other forms of working together" (p. 58). If teacher dialogue that helps teachers to question their practices is not part of these "collegial" processes, there is no assurance that collaboration will result in higher quality student learning. What is required, instead, are approaches to critical collegiality that involve a commitment to processes that will help us to reflect critically on practice and make changes based on these reflections. If the reality in most schools is contrary to the expectations of the standards, how can individual teachers possibly meet the standard? How do the standards force schools to become more collegial?

Criticisms Based on the Limitations of the Standards

Related to the superficiality issue is another concern that focuses on substantive issues related to standards that address moral purposes rather than merely ensure scientific knowledge. Blackwell (1997) asserts that "standards devoid of moral purpose will not satisfy these three requirements: how to attract teachers to the profession, how to make sure teachers

are well trained for the challenges they will face in the classroom, and how to induce teachers to stay in the profession" (pp. 2-3).

She continues that the current standards movement in higher education, specifically the standards fostered by INTASC, is only a piecemeal, rather than a systemic, approach at reforming the system. Without linking standards for improving the preparation of teachers to the renewal of schools, she believes that little will be accomplished. Student success in schools, after all, is more than achieving high test scores. According to Goodlad (1990), student success has to do with teachers (1) facilitating critical enculturation—teaching students to critically understand and examine the culture—rather than the indoctrination of students into the culture; (2) providing access to knowledge; (3) building an effective teacher-student connection—developing teachers who are sensitive to children's needs and placing a priority on relationship building; and (4) practicing good stewardship—developing concern about all children, not just their own, and all the programs and structures. While the standards talk about giving new teachers the knowledge, skills, and dispositions to become teachers, they do not address processes required by teachers to be successful in a system where a "this too shall pass" mentality persists. Questions that need to be asked include: How is the renewal of schools linked with the preparation of beginning teachers? How do the standards ensure that teachers will not become stagnant? How do the standards address teacher survival in schools where resistance to change is the norm?

Criticisms Based on Measurement and Scoring Practices

Many problems are still unresolved concerning how to measure the NCATE, INTASC, and NBPTS standards. These concerns include how much is enough, what should be measured, what can be measured, and what do we know how to measure? While we can measure behaviors, how do we measure dispositions, since these involve value judgments? Other questions include who pays for the results and how do we resolve the costs associated with the standards? If students are supposed to demonstrate what they know, what implications will this have on methods of teacher preparation? If teaching practices at the university level are grounded in lecture format, but students are expected to be facilitators of learning when in the field as practicing teachers, a logical question is: How can students, who have been passive reproducers of knowledge, now be expected to facilitate learning for their own students? And finally, how will the impact on student learning be measured out in the field? Are standardized tests the most effective means for evaluating student achievement?

Similar issues have been raised concerning scoring practices used to determine quality teaching. While ETS

is currently overseeing scoring of the NBPTS process, one needs to question the kinds of training procedures that are used to train those who score the portfolios. How is interrater reader reliability ensured? How is a sufficient number of experienced educators found, who have the necessary time to participate in this process—to go through the training and then score portfolios? Questions have been raised by educators who have been involved as assessors regarding the scoring process, specifically concerning the development and quality of the rubric used to score candidates' portfolios and the access that candidates have to the rubrics during their preparation period (Close, 1995). Other questions have been raised concerning qualifications of assessors: How many years of teaching experience should qualify those who participate as scorers? An experienced teacher who was involved in the scoring process noted that there were teachers with as little as two years of experience who were scoring candidates' portfolios (Close, 1995).

Other criticisms have been raised concerning how the scoring process decontextualizes and compartmentalizes teaching. Rather than using a holistic scoring process, ETS has raters scoring individual exercises. Although the preface of documents supporting board certification refers to exemplary teaching as a holistic act "where many facets of practice are joined together to advance student learning," the reality of the assessment process seems otherwise (National Board, 1994, p. 6). In critiquing the methods used by ETS, one educator who was involved in the scoring process commented that:

> Scorers were given coded name tags and separated into groups by the exercise to be scored. Secrecy and isolation seemed part of the assignment. Each scorer responded to one of seven exercises, an efficient method of getting the job done, but certainly alien to me and to what I believe about teaching. It also seems alien to what NBPTS believes. Wouldn't a better understanding of an individual's performance be developed if scorers were trained to respond to all aspects of the portfolio? Why put a portfolio together if it is going to be broken down into separate parts? (Close, 1995, p. 40)

Other concerns have been raised about off-site scoring practices when the best way to assess one's teaching ability is perhaps within the local context using local authorities as observers. Does it make more sense to certify expertise on teaching, professional involvement, family outreach, and other factors that the standards try to address in the context in which the teaching occurs? How can that be adequately accomplished off-site, when the portfolio scoring process is decontextualized? Some believe that NBPTS has resisted developing a local certification system because such an approach works against a testing company's control of test specifications (Myers, 1995).

Criticisms Based on Adequacy of Support Systems

When considering how the standards impact quality teaching in the classroom, one first needs to ask what kinds of support systems are in place at the state, district, and school levels to support teachers. The National Commission on Teaching and America's Future offers suggestions on ways to support and sustain teacher work on problems of practice that are directly connected to student learning.

Throughout their careers, teachers should have ongoing opportunities to update their skills. In addition to time for joint planning and problem solving with in-school colleagues, teachers should have access to networks, school/university partnerships, and academies where they can connect with other educators to study subject-matter teaching, new pedagogies, and school change (Darling-Hammond, 1996).

While these are worthy recommendations, the unfortunate reality is that disparities exist across, between, and within states on implementation. In cities across the nation where students are overwhelmingly children of color and children of the poor, where schools must struggle to educate children with considerably fewer human and material resources than neighboring districts have, and where teachers often lack necessary skills, knowledge, and training, one needs to ask what standards these represent (Meier, 2000). Where is the necessary support in these educational settings to sustain everyday teaching practice, let alone support for teachers to complete board certification requirements?

Support is lacking also in that schools operate within a perspective of naive, rather than critical, pragmatism. This often results in school reform and change efforts that follow a "bandwagon" mentality or "silver bullet" approach without a critical assessment of the problem and how best to solve the problem. Transforming curriculum and teaching into rich intellectual inquiry requires educators to confront constructs such as individual differences, intelligence, and behavioral conditioning. Yet the (school environment) reform mill does little to create climates in which teachers can critically examine the historical and theoretical underpinnings of these and other ideas. Instead of forming professional communities committed to using knowledge, analytic skill, and critical perspectives to shape their practice, teachers are asked to swallow "expert" prescriptions for such techniques as interdisciplinary units or problem-based learning. Oakes, et al. (2000) believe that to gain widespread "buy in," reform leaders often grind complex ideas down into catchy slogans, lists of best practices, and vignettes from model schools. Watered-down wisdom makes its way into packaged materials and prescribed "trainings." Such technical assistance nearly always blocks the deep inquiry and learning that fundamental shifts in norms and practices require.

A 1997 study that examined the impact of the certification process of the

National Board of Professional Teaching Standards found several factors that contributed to a general lack of support among K–12 institutions for national board certified teachers (Rothberg, Futrell, & Lieberman, 1998). The first had to do with a lack of awareness among K–12 administrators of the NBPTS process or a lack of sufficient support services or provision of time to assemble the required portfolio materials. This lack of understanding about the process also resulted in a lack of congruence between K–12 in-service or professional development programs and national board standards.

Criticisms Concerning "Opportunity to Teach"

While the standards are often perceived as an opportunity for teachers to learn more about the profession of teaching and how to work more effectively with students, if schools lack the conditions that make it possible for teachers to be successful, how can teachers be faulted and held accountable? Where is the accountability from the perspective of schools? How can standards overcome the problems of outdated materials, run-down school buildings, and inadequate space? Where is the "opportunity to teach?" In studying the challenge of higher standards, the National Council on Education Standards and Testing, a bipartisan task force of educators and legislators created by Congress in the early 1990s to examine the feasibility and desirability of a national system of education standards and tests, held that in addition to content and student performance standards there should be *system performance standards* (O'Neil, 1993). Standards such as these would assess the success of schools, districts, states, and the nation as a whole in helping all students attain high performance standards.

Concerning standards that would require schools to provide necessary support for teachers, Rothberg and colleagues (1998) found frequent discrepancies in educational philosophy between the NBPTS and K–12 institutions. The realities of school environments, such as large class sizes, often made the standards difficult to implement. To date, with all the professional content associations that have developed quality student performance/teaching standards, the only content area that addresses standards or systems of support for quality teaching practices is the field of science. But even with these, where is the accountability on the part of schools to enforce these standards or the monetary support from the local, state, and federal levels to ensure that conditions are in place so that teachers have "opportunities to teach?"

The Future of Standards in Higher Education

In addition to attending to the many problems that remain in all the standards branches—accreditation, licensing, and certification—one needs to ask what value, if any, standards have

in advancing the field. Standards are important in providing a sense of direction in which to proceed as well as providing a set of priorities for placing energy, resources, and efforts. As is true with other educational initiatives, however, the emphasis is often misplaced. First a "one-size-fits-all" mentality seems to exist concerning the standards, disregarding some of the issues and concerns raised throughout this chapter. Another problem with standards is that they often become ends in and of themselves, rather than the means to achieve the ends. If the end is about ensuring quality teachers for our nation's children and youths, then standards should be used to stimulate debates on what constitutes quality teaching among K–12 schools and within institutions of higher education.

In K–12 settings, the standards, especially the NBPTS and INTASC standards, could be used as a springboard to open a dialogue among teachers, administrators, parents, and the community about quality teaching practices. The standards could become the focus for relevant and authentic staff development training at the school or district level. Teacher-supported study groups and staff meetings could focus their attention on the standards through the initiation of meaningful conversations about the standards. Dialogue and reflection on the standards could be used as part of a more authentic teacher evaluation process. Teachers could also be encouraged and supported to participate in the process. In these ways the standards become a means to the end, rather than the goal itself.

In schools of education, the standards should become the impetus for rethinking teacher education at the preservice, in-service, and graduate levels. The standards could provide an opportunity for faculty to engage in debate and dialogue about the content and process of their programs, be used to develop programs that are more coherent in nature, and become the basis for establishing school/university partnerships grounded in an authentic collaboration. But until many of the issues that have been raised throughout this chapter are addressed, the standards movement may just become one more of those educational initiatives that educators "ride out" with a "this too shall pass" mentality.

APPENDIX

NCATE Standards

Standard 1: Candidate Knowledge, Skills, and Dispositions fall within the purview of this paper. Criteria to meet this standard include the following specifications of teacher candidates:

They have in-depth knowledge of the subject matter that they plan to teach and are able to demonstrate their knowledge through inquiry, critical analysis, and synthesis of the subject.

They reflect a thorough understanding of pedagogical content knowledge; have an in-depth understanding of the subject matter that they plan to teach, allowing them to provide multiple explanations and

instructional strategies so that all students learn; and present the content to students in challenging, clear, and compelling ways and integrate technology appropriately.

They reflect a thorough understanding of professional and pedagogical knowledge and skills as shown in their development of meaningful learning experiences to facilitate learning for all students. They reflect on their practice and make necessary adjustments to enhance student learning. They know how students learn and how to make ideas accessible to them. They consider the school, family, and community contexts in connecting concepts to students' prior experiences and applying the ideas to real-world problems.

They have an in-depth understanding of the professional knowledge demonstrated through the collection and analysis of data related to their work, reflection on their practice, and use of research and technology to support and improve student learning.

Their work with students, families, and communities reflects the dispositions expected of professional educators, and they are able to recognize when their own dispositions may need adjustment and are able to develop a plan to do so.

They accurately assess and analyze student learning, make appropriate adjustments to instruction, monitor student learning, and have a positive effect on learning for all students.

Interstate New Teacher Assessment and Support Consortium (INTASC) Standards

Knowledge of Subject Matter

The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful.

Knowledge of Human Development and Learning

The teacher understands how children learn and develop, and can provide learning opportunities that support their intellectual, social, and personal development.

Adapting Instruction for Individual Needs

The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to learners from diverse cultural backgrounds and with exceptionalities.

Multiple Instructional Strategies

The teacher understands and uses a variety of instructional strategies to encourage students' development of critical-thinking, problem-solving, and performance skills.

Classroom Motivation and Management Skills

The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

Communication Skills

The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

Instructional Planning Skills

The teacher plans and manages instruction based upon knowledge of subject matter, students, the community, and curriculum goals.

Assessment of Student Learning

The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner.

Professional Commitment and Responsibility

The teacher is a reflective practitioner who continually evaluates the effects of his or her choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.

Partnership

The teacher communicates, interacts with, and fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.

National Board of Professional Teaching Standards

The National Board for Professional Teaching Standards seeks to identify and recognize teachers who effectively enhance student learning and demonstrate the high level of knowledge, skills, abilities, and commitments reflected in the following five core propositions:

1. Teachers are committed to students and their learning.

Accomplished teachers are *dedicated to making knowledge accessible to all students*. They act on the belief that all students can learn. They treat students equitably, recognizing the individual differences that distinguish one student from another and taking account of these differences in their practice. They adjust their practice based on observation and knowledge of their students' interests, abilities, skills, knowledge, family circumstances, and peer relationships.

Accomplished teachers *understand how students develop and learn*. They incorporate the prevailing theories of cognition and intelligence in their practice. They are aware of the influence of context and culture on behavior. They develop students' cognitive capacity and their respect for learning. Equally important, they foster students' self-esteem, motivation, character, civic responsibility, and their respect for individual, cultural, religious, and racial differences.

2. Teachers know the subjects they teach and how to teach those subjects to students.

Accomplished teachers *have a rich understanding of the subject(s) they teach and appreciate how knowledge in their subject is created, organized, linked to other disciplines, and applied to real-world settings*. While faithfully representing the collective wisdom of our culture and upholding the value of disciplinary knowledge, they also develop the critical and analytical capacities of their students.

Accomplished teachers *command specialized knowledge of how to convey and reveal subject matter to students*. They are aware of the preconceptions and background

knowledge that students typically bring to each subject and of strategies and instructional materials that can be of assistance. They understand where difficulties are likely to arise and modify their practice accordingly. Their instructional repertoire allows them to create multiple paths to the subjects they teach, and they are adept at teaching students how to pose and solve their own problems.

3. Teachers are responsible for managing and monitoring student learning.

Accomplished teachers *create*, *enrich*, *maintain*, *and alter instructional settings to capture and sustain the interest of their students and to make the most effective use of time*. They also are adept at engaging students and adults to assist their teaching and at enlisting their colleagues' knowledge and expertise to complement their own. Accomplished teachers *command a range of generic instructional techniques*, *know when each is appropriate*, *and can implement them as needed*. They are as aware of ineffectual or damaging practice as they are devoted to elegant practice.

They know how to *engage groups of students to ensure a disciplined learning environment and how to organize instruction to allow the schools' goals for students to be met.* They are adept at setting norms for social interaction among students and between students and teachers. They understand how to motivate students to learn and how to maintain their interest even in the face of temporary failure.

Accomplished teachers can assess the progress of individual students as well as that of the class as a whole. They employ multiple methods for measuring student growth and understanding and can clearly explain student performance to parents.

4. Teachers think systematically about their practice and learn from experience.

Accomplished teachers are *models of educated persons*, exemplifying the virtues they seek to inspire in students: curiosity, tolerance, honesty, fairness, respect for diversity, and appreciation of cultural differences and the capacities that are prerequisites for intellectual growth, as well as the ability to reason and take multiple perspectives, to be creative and take risks, and to adopt an experimental and problem-solving orientation.

Accomplished teachers draw on their knowledge of human development, subject matter, and instruction, and their understanding of their students, to make principled judgments about sound practice. Their decisions are grounded not only in the literature, but also in their experience. They engage in lifelong learning, which they seek to encourage in their students.

Striving to strengthen their teaching, accomplished teachers critically examine their practice, seek to expand their repertoire, deepen their knowledge, sharpen their judgment, and adapt their teaching to new findings, ideas, and theories.

5. Teachers are members of learning communities.

Accomplished teachers contribute to the effectiveness of the school by *working collaboratively with other professionals on instructional policy*, *curriculum development*, *and staff development*. They can evaluate school progress and the allocation of school resources in light of their understanding of state and local educational objectives. They are knowledgeable about specialized school and community resources that can be engaged for their stu-

dents' benefit and are skilled at employing such resources as needed.

Accomplished teachers find ways to *work collaboratively and creatively with parents*, engaging them productively in the work of the school.

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REINTERPRETING TEACHER CERTIFICATION STANDARDS

Locating Limitations and Expanding Possibilities

Thomas P. Thomas and William H. Schubert

Promoting Compliance through Professional Standards

A number of states are engaged in the restructuring of teacher certification programs, expanding from specified course work and pencil and paper testing to include evaluation of professional practices and portfolio exhibition.[1] To direct the evaluation of teacher performance, teacher certification standards have been constructed by the National Board for Professional Teaching Standards (NBPTS) in conjunction with Educational Testing Services (ETS) (Danielson, 1996; National Board for Professional Teaching Standards, 1989) and by the Interstate New Teacher Assessment and Support Consortium of the Council of Chief State School Officers (INTASC, 1995). INTASC standards have been most often referenced in establishing state policies for initial certification; the NBPTS has been promoted by states to foster professional development and provide a second tier for certification (e.g., Illinois State Board of Education [ISBE], 1999). PRAXIS III was developed by ETS to facilitate the assessment of teacher competencies consonant with the NPBTS framework. Teacher education programs in colleges and universities are attending to state and national standards in course work and field experiences to retain accreditation and to ensure that their students will meet certification requirements.

An examination of these professional standards calls to mind the warning of David Labaree (1997) that not only is credentialing not equivalent to education, it can clandestinely serve as a surrogate activity. Although the teacher certification standards certainly contain numerous salutary characteristics of meaningful education practice, the standards are specifically designed to prepare teachers to partic-

ipate in the dynamics of contemporary U.S. schools. There are, however, important imaginal, creative, and critical dimensions of being an educator that are not addressed by the standards. Most notable is removing the responsibility for crafting a curriculum from the identity of the teacher, dismissing the importance of critical reflection on educational purpose, and moving the most socially significant student evaluation outside of the context of classroom instruction. Any thinking and acting as an educator that might prove confrontational to the purposes, policies, and structures of conventional schooling are absent.

INTASC and NBPTS standards fail to promote a critical, deliberative, or democratic vision for the educator's craft. When used as the exclusive determination of the worthwhile activities of an educator, or, for that matter, when subjected to a limited interpretation as credentialing requirements, these teacher certification standards promote the bureaucratization of teaching. This may result in the production of an efficient and effective functionary of the state, but it is questionable whether it evokes an educator. A conflict can result between preparing future teachers for certification and engaging in education for meaning. Analogous to Jean Anyon's (1980) study of curriculum activities and how they differ contingent on the social class of students, a reading of teacher certification standards that suggests that candidates follow recipes or give the right answers stands in contrast to historical and contemporary curricular approaches that foster creativity; teach the personal and political skills needed to live in community with learners; and challenge social assumptions about what is worth knowing, being, and sharing. A closer examination of teacher certification standards evidences that imagination and vision are not high priorities in listing teacher competencies, particularly when considering the role of the teacher in curriculum development.

How Teacher Standards Interpret Curriculum Development

Although we are not prone to conspiratorial theorizing, we find it remarkable that the current national options for teacher standards (PRAXIS III, INTASC, and NBPTS) all work from a very sparse interpretation of the questions for developing curriculum, instruction, and assessment proposed by Ralph Tyler and conventionally termed the "Tyler rationale" (Tyler, 1949) in their identification of the teacher's responsibilities in curriculum development.

The PRAXIS III components of professional practice, promoted by Educational Testing Service for assessment of teacher performance, is surprisingly the most useful of the various proposed teacher certification standards frameworks. Curriculum development is placed in the first of four domains of practice, "Planning and preparation." It is a design consistent with Tyler's proposal; the six components of planning and preparation re-

flect dimensions of the rationale, from selection of instructional goals based on knowledge of subjects and students to instructional design and assessment. The design of curriculum is the focus of Component 1c of PRAXIS III: "Selecting instructional goals." Charlotte Danielson remarks in her rationale and explanation for this component: "In classrooms organized as a community of learners, however, teachers engage students in determining these goals. As students assume increasingly greater responsibility for their own learning, they select their own learning tasks in pursuit of shared goals" (Danielson, 1996, p. 68).

The admonition to fashion a curriculum *by*, *with*, *and for* learners (Schubert & Lopez Schubert, 1981) is not supported, however, in the scoring rubric that is used by ETS to evaluate a teacher's performance. The rubric considers, rather, whether the goals that are employed by the teacher are valuable, clearly stated, suitable for diverse learners, and balanced in the intellectual skills that are engaged. The only indication offered regarding for whom the goals should be valuable is at the "distinguished" level. Alignment to "curriculum frameworks and standards" is presented as the distinction between the highest level of performance and proficiency, not whether students are involved in determining curricular goals. Although there are two other components in the domain titled "Professional Responsibilities" that would appear also to have relevance to curriculum considerations, neither "reflecting on teaching" nor "contributing to the school and district" make reference to curriculum reflection or development as requisite activities.

The NBPTS bases its system for national certification on five propositions stated in the document "What Teachers Should Know and Be Able to Do" (NBPTS, 1989). The presentation of curriculum in this document is unambiguous in its support for the traditional academic disciplines. "Teachers represent the collective wisdom of our culture and insist on maintaining the integrity of the methods, substance, and structures of disciplinary knowledge. In the face of pressures to portray knowledge in weak and diluted forms, they keep firm" (NBPTS, 1989, p. 14). Although Proposition 5, the description of the teacher's role as a member of learning communities, does encourage teachers to engage in the "analysis and construction of curriculum," the description of this responsibility is relegated to reviewing existing curriculums to ensure that they are responsive to "learning goals and objectives established by state and local authorities" (NBPTS, 1989, p. 2). The description of curriculum development is again similar to the Tyler rationale, but with the very important exception that Tyler suggested the use of philosophy as a screen for selecting significant learning objectives and emphasized the consideration of the lives of the learners in determining what was important to teach (Tyler, 1949, p. 33). Neither screen is advanced as important to curriculum development.

The principles of the INTASC teacher certification standards include reference to curriculum development for two core standards. The first principle states: "The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students" (INTASC, 1995, p. 4). Curriculum is tightly defined as knowledge and skills derived from academic disciplines, with the concession that the instructor should be capable of making connections to other disciplines for instructional effectiveness. Principle 7 states: "The teacher plans instruction based upon the knowledge of subject matter, students, the community, and curriculum goals." The assumption in this principle is that each curriculum goal is one of four elements that constitute instructional plans and that these goals are determined outside of the agency of the teacher.

PRAXIS III, NBPTS, and INTASC standards rely on the academic disciplines content standards that were developed by national learned societies. These standards have been translated into state policy as the basis for a legitimate curriculum. For example, the Illinois State Board of Education Content Standards for Teachers (ISBE, 2000) dovetails the Illinois learning standards (ISBE, 1997) with the content area standards in each of the various teaching fields. The "curriculum" skills of an early childhood or elementary educator, for example (with language taken directly from the INTASC standards), consist of acquiring a functional knowledge base (central concepts, tools of inquiry, and structures of content) in the academic disciplines of language arts, mathematics, science, physical development and health, the fine arts, and social studies (the latter at the elementary level only) and creating "meaningful integrated learning experiences" (ISBE, 1997, pp. 1, 16). Relative to the high school content-area standards, although there is no lack of standards provided by the state of Illinois (thirty standards for language arts teachers, eleven for mathematics teachers, nineteen for science teachers, and twenty-nine for social studies teachers, with additional standards for further specialization), curriculum skills are confined to having an accurate understanding of learning standards and being a prudent consumer of instructional materials that will assist students in meeting learning standards.

Although PRAXIS III, NBPTS, and INTASC standards promote connecting the disciplines across the curriculum, this is advocated as an effective instructional technique to engage students in learning the academic disciplines, not as a curricular orientation. John Dewey's suggestion that curriculum be fashioned around the social interests and problems that are relevant to the community of learners is not represented (Dewey, 1931). Whereas Dewey saw the value of the problem-based interdisciplinary curriculum for the purposes of developing deliberation, the democratic exercise of scien-

tific inquiry, these variations on thematic of interdisciplinary connection are promoted because they will enhance student motivation and provide avenues for teaching content.

The various teacher certification standards proposals share the following conclusions on curriculum construction as it relates to the qualities of effective teaching:

1. Curriculums are based on the knowledge and skills developed by well-established academic disciplines translated into governmental policies concerning what constitutes meaningful learning for young people. Thus, teacher certification standards take curriculum to mean the national or state content standards or curriculum frameworks. The effective teacher implements instruction that addresses these standards.
2. The standards-based curriculum may be subject to the learning needs of diverse students, but it is not open to criticism or analysis by the teacher in considering competing philosophic or social orientations (e.g., experientialist, critical reconstructionist, postmodernist).
3. Curriculum development consists of the writing of classroom-specific objectives or outcomes that are based on governmental content standards and the selection of the appropriate artifacts for effectively presenting this curriculum. The teacher "creates an effective bridge between curriculum goals and students' experiences" (INTASC, principle 8).
4. An abridged Tyler rationale remains the basis for understanding curriculum development, with the deliberate exclusion of social analysis in some models (INTASC, PRAXIS III), lack of attention to the lived experiences of the learners in the local community, and the uniform exclusion of philosophic screening of objectives.

Three Qualities of the Authentic Educator

Those who are familiar with the historical evolution of curriculum in this century are aware that these standards are not and historically have not been responsive to the calls for critical reflection on what is taught in schools (Marshall, Sears, & Schubert, 2000). There has never been an emphasis on standards as pronounced as it is today, however, and never before have these standards been driven by an engine of large-scale assessment instruments that "gatekeep" credentials. Professional associations in most of the major subject areas have designed elaborate statements of standards. The National Council for Accreditation of Teacher Education (NCATE) has formed an alliance with these learned societies so that these academic societies establish the standards and conduct the program review for colleges or universities seeking accreditation (NCATE, 1995). State certification

examinations are driven by teacher certification content-area standards. Student promotion is possible in many states only by passing an assessment battery derived from state content standards.

The content standards before us today (and the goal statements and tests designed to enforce them) *are* legitimated by teacher certification standards as the new curriculum. We argued earlier in the chapter that these certification standards share a common process of curriculum development, a process that mutes the voices of educators and learners while suggesting a warmed-over version of the Committee of Ten and Committee of Fifteen recommendations for schools from 1893 and 1895 (Willis et al., 1994): clearly defined academic disciplines with knowledge controlled by specialist/experts, now measured by other specialist/experts. The policy makers and specialist/experts are providing answers to our fundamental and complex curriculum questions: What is worth knowing, experiencing, needing, doing, being, becoming, sharing, and contributing as individuals and as societies?

If a professor of education has aspirations of developing future educators rather than certified public employees, we suggest that he or she expand on the identity of the educator provided in these standards in at least three directions. The first direction is to provoke in educators a consideration of the philosophic orientation that shapes that educator's vocation and ponder the value dimension of the profession (e.g., Jackson, Boostrom, & Hansen, 1993). *Educators are engaged in philosophic inquiry*, investigating the value assumptions of their students, their school colleagues, and their own metaphysical, epistemological, and axiological convictions. This translates to introducing teacher candidates into conversations on the values that constitute a curriculum, as we have advocated in an earlier reflection. "We contend that there is a need for more question-asking, exploration of forms of knowing, and imaginative reconsideration of learning and less programming and prescription" (Thomas & Schubert, 1997, p. 284). This is a conversation that not only includes contemporaries who write and speak about the possibilities of the educative act, but engages historical remembrance of our intellectual ancestors and listens to what they have to say about standards and curriculum. At minimum, it requires participation in the philosophic screening that Tyler contended was a necessary component of curriculum development. Our aspiration, however, is that contemporary thinking in education create new ways of envisioning curriculum that are responsive to postmodern contributions in understanding knowledge and power.

Another direction reflects on the role of teacher educators as critical interpreters of existent curriculums and creators of new curriculums, novel forms of instruction, and appropriate methods of assessment with others

(e.g., Connelly & Clandinin, 1988; Schubert & Ayers, 1992). To expand only slightly on Elliot Eisner's concept, *an educator is a democratic connoisseur* (Eisner, 1994). He or she is able to articulate quality in process, performance, and products in education. She or he develops these characteristic qualities by deliberating democratically with all who wish to speak to the educator's craft, not only those who assume authority by credentialing, bureaucratic status, or popular vote. Through this ongoing exchange of views (standards being a legitimate expression of this discussion), the criteria of worth continue to evolve. Democratic connoisseurs also possess the critical vision to recognize the presence of educational quality in their own work and in the work of the systems in which they exercise their craft. The democratic connoisseur also considers how social, political, and economic interests are advanced or thwarted in education.

A third responsibility of those who educate educators is to encourage direct and passionate involvement in political and social changes for the benefit of humanity. This involves promotion of democratic practice understood as community deliberation and commitment (Fraser, 1997) and public advocacy for social policies that attempt to redress injustice and public criticisms of state actions that oppress or institutionalize inequality (e.g., Freire, 1973). The standards movement was created by an exercise of political and economic power; it can also be contested, resisted, and protested by learning communities that recognize that their needs are not being addressed in a curriculum designed from afar. We call for a revival of progressivism in the Deweyan context (see Dewey, 1948). Rather than view human action as an inevitable redistribution of privilege, we suggest that the ethical focus of the educator be on encouraging authentic progress, understood as actions that effect positive and sustaining benefit for individuals, societies, and the environment. *An educator is a progressive activist.*

Reinterpreting Teacher Standards: Placing INTASC Principles in Context

If a professor or educator accepts the philosophic, democratic connoisseur, and progressive activist dimensions of the educator's craft, he or she will strive to model these qualities in his or her own labors as well as advancing these qualities in teacher candidates. When professors of education incorporate these attributes into the existing portraits offered in certification standards, the characteristics or principles of the effective teacher can be coopted into a more dynamic, vital understanding of the educator's craft. As an example of this translation, we will look at each of the ten principles that direct the INTASC standards for teachers in light of these three additional attributes of the educator (INTASC, 1995). We have stated the INTASC principle in brief in each case

but have striven to remain authentic to the INTASC framework.

INTASC Principle 1

Principle 1: The teacher possesses expert disciplinary knowledge and can meaningfully share this knowledge with students.

Although it is obvious that the designers of this principle meant "academic disciplines," the qualities of philosophic inquiry, democratic criticism, and progressive activism require that teachers be responsible to educate in more than a single academic discipline when addressing the problems, relationships, and mysteries of living. The "discipline" of a teacher is how he or she integrates various languages for understanding or realms of meaning (Phenix, 1964) so that he or she shares self and invites the community of learners to consider and employ the various languages in the development of their own "disciplines."

The notion of discipline needs to be expanded to recognize that multiple forms of discourse or "disciplines" shape perception, meaning, theory construction, and modes of inquiry. This concept is consonant with traditional academic disciplines (e.g., scientific literacy, numeracy, language arts) and Howard Gardner's theory of multiple intelligences (Gardner, 1993, 1999). It is important to note that critical participation in a discourse, whether as a traditional academic discipline (e.g., mathematics, science, language arts, fine arts), the expression of an intelligence (e.g., kinesthetic, musical, intrapersonal), or a sociopolitical perspective (e.g., gender, race, culture, class), challenges the assumptions or unattended issues within the discourse. This criticism is attained by placing knowledge claims of different disciplines or discourses in dialogue and not abandoning the aspiration that by engaging in this multiple discourse criticism, problem solving and insight are possible. Thus, all teachers need to be able to facilitate an understanding of diverse academic and social disciplines.

Beyond this expanded understanding of "disciplinary" knowledge, there is another aspect of this principle that must be considered. If the curriculum is to be subject to continual conversation and is to have a progressive heuristic, students, not teachers or evaluators or assessments, are the final arbiters of "meaningfulness" in learning experiences. Just as we encourage teachers to engage in challenging the value assumptions and critically and democratically deliberate curriculum proposals, the classroom must also be a place where conversations about the curriculum take place.

INTASC Principle 2

Principle 2: The teacher attends to human development in all its dimensions and provides learning opportunities that cultivate development. Developmental stage theories are instructive and have expanded our understanding of the maturation of human beings within and across various cultural milieus. These theories of in-

tellectual, social, or personal development, however, are insufficient if they result in the stereotyping of students or limit access to adventure and opportunity. What is required at the outset is to attend to the individuals who compose a learning community. It is important to know who they are, what they do, and what they would like to become. What are their value assumptions? What are their interests and concerns? How can the classroom be a community of learners engaged in continual renewal?

INTASC Principle 3

Principle 3: The teacher knows that students learn differently and adapts instructional opportunities to these differences.

This standard encourages knowledge of multiple intelligences, learning style differences, and exceptionality. It calls for attending to the needs of students whose first language is not English, as well as students with diverse academic background and family and cultural values when designing and implementing instruction. The principle is an acknowledgment of the multicultural reality of contemporary schooling.

Christine Sleeter and Carl Grant (1999) provide a useful framework for understanding the various ways that educators can interpret "multicultural education." A socially conservative option interprets multicultural education as "teaching the exceptional and culturally different." This approach accommodates and adapts the dominant society's curriculum through instruction so that students who are not from the dominant cultures can be successful in achieving the state-sanctioned content and performance standards. Other options include a human relations approach, based on principles of tolerance and respect for differences in conventional practices; a single studies or elective programs approach (e.g., African-American history); and multicultural education that incorporates diverse cultural perspectives in determining the curriculum. Sleeter and Grant are advocates for a posture that promotes social reconstruction through the critical interaction of cultural differences and the critical examination of power and oppression in cultural relationships.

The INTASC principle as described in the section "Knowledge, Dispositions, and Performances That the Teacher Should Possess" suggests that multicultural education should be defined principally as accommodating difference to ensure that students with differences can meet standards that are set outside of their culture or identity. In contrast, for adopting the additional qualities—that an educator be philosophic, a democratic connoisseur, and a progressive activist—only a curriculum that is responsive to differences in culture and identity can be regarded as a meaningful interpretation of this principle.

INTASC Principle 4

Principle 4: The teacher uses instructional variety to encourage the devel-

opment of problem-solving, critical-thinking, and performance skills.

The proposal that instruction be varied to be engaging and effective is commendable. In this principle, we concede that the authors recognize that without attending to the background and capacities of the learners, even a cleverly orchestrated variety show is unlikely to result in the cognitive engagements that are the desired outcome. The apparent disconnect between curriculum and instruction that is suggested in this principle is, however, most disturbing. The peculiar notion that any content can be made interesting if the instructor applies his or her instructional skills, finding clever and interactive methods of packaging the concept so that it is "attractive" to different students (audience members), is contrary to the need to build from reflection on the values of the community. Video games that have come on the market in recent years (e.g., MathBlaster) that teach traditional disciplinary knowledge and skills in an arcade game fashion are but one high-tech version of this idea. In observing teachers and student teachers, we have seen many game-show formats (*Jeopardy*, *So You Want to Be a Millionaire*) used as a staple in instruction, employed to achieve variety of content. What is missing in this interpretation of the teacher's craft is the recognition that all meaningful curriculum has a voice and that this voice must be listened to carefully and respectfully when considering instruction. When the curriculum is trivial or irrelevant, instruction needs to be "dressed up" to make the content attractive to the students. If the effort is successful, a student may "compliment" the teacher by saying, "You made a boring subject interesting!" Who did the teacher fool with all this fancy footwork? The student still recognizes the curriculum for what it is.

Another example of this disconnect is forcing an instructional model on a curriculum without being sensitive to the tone of the content, a skill that demands sensitivity. This can occur with either conventional or even innovative classroom practice. One of the authors recently previewed a promotional piece on problem-based learning that examined the decision of the United States to drop atomic bombs on Japanese cities in World War II as an ill-structured problem. Although the teacher employs several interactive instructional innovations (KWL, graphic organizers, cooperative learning), the end result rings hollow. This is an important narrative in our national and global history; it is a curriculum that one must reflect on philosophically, democratically, and ethically before determining how to bring this issue to a community of learners. The good-faith effort of the teacher and students to employ this new instructional strategy in order to engage in critical thinking and problem solving evoked none of the immensity, drama, and tragedy of this decision. What did the students learn from this exercise about war, about governments, and about being human?

INTASC Principle 5

Principle 5: The teacher establishes a learning environment that motivates students to learn and behave in ways that engage learning and promote positive social interaction.

The knowledge base that describes this principle can lead to the acceptance that it is not only possible but desirable to manipulate the motivation and behavior of others. At the same time, the principle advocates for "democratic values in the classroom" and acknowledges intrinsic motivation as the most compelling director of behavior. Jere Brophy (1998) has suggested an approach that is consistent with the ideas we presented in response to principle 4 on instruction. "Motivation to learn" is different from extrinsic motivation, where the reward stands apart from the required behavior, and intrinsic motivation, where the student acts because he or she finds personal value in the behavior, bringing this value to the behavior. Motivation to learn brings the lesson to the student and brings the student to the lesson. What this means is that the instructor must first think about how the curriculum and instruction speak to the lives of the community of learners and then facilitate the invitation as well as the conduct of learning, ensuring that students will find the experience educative and personally expansive. The emphasis in Brophy's proposal is that motivation to learn is an educational process of responding to values, encouraging reflection on purpose and process, and effecting an understanding of the worth of learning; it is not manipulated outside of the student's cognitive or affective deliberation.

INTASC Principle 6

Principle 6: The teacher employs effective communication to foster active inquiry, collaboration, and supportive interaction in the classroom.

We concur that the experts got this principle right in most respects. They are careful to note that effective communication is as much about listening and being with others as it is about speaking. This principle also recognizes that encouraging the students to converse with one another is every bit as important as having an engaging public speaker at the front of the room. The desired performances detailed in the document, however, emphasize the teacher's ability to be a "great communicator." Freire (1973) has convincingly argued that education must be based on humanistic dialogue and that the teacher can consider him- or herself competent only when the students can communicate their lives, their concerns, and use language to confront oppressive and repressive conditions.

INTASC Principle 7

Principle 7: The teacher plans instruction based on the interaction of the subject matter, the students, the community, and curriculum goals.

The substance of this principle has already been discussed in the context

of how the INTASC standards speak to curriculum development. On the surface, this provides a model of curriculum development that is related to the Tyler rationale; however, the lack of philosophic screening and the failure to prioritize the lives of the learners as the beginning point of designing curriculum and instruction require that the principle do more than is suggested.

INTASC Principle 8

Principle 8: The teacher uses various assessment techniques to evaluate and monitor the development of the learners.

The ascendance of assessment as a valued competence for teachers has given rise to the encouraging use of performance assessments and portfolios. The past decade has also witnessed the expansion of large-scale assessment. Consistent with the philosophic, critical, and progressive qualities of an educator, important considerations in assessment are whether the assessment is measuring meaningful qualities, whether it is responsive to information that the learner is seeking, and whether the information from assessment is of benefit to the one who is being assessed. Large-scale assessment can indeed provide useful information for some purposes (e.g., program improvement). The problem is that large-scale assessment has been employed to do things that it is not particularly good at doing, especially in its contemporary alliance with content standards and the micromanaging of student accountability from afar. It is questionable, when used inappropriately, whether such assessments are measuring qualities that are meaningful (particularly to the one being assessed) and whether there is any real benefit to the person being assessed. It is our contention, with regard to the benefits of large-scale assessment, that such instruments should never be used as the sole determinant in making important social decisions about individuals (e.g., denial of opportunity).

Self-assessment of processes, performances, and products that matter to the learner, conducted with honesty and care, is likely to be the most worthwhile endeavor. The problem is that we seldom offer any of these kinds of activities in the conventional school setting. The closest kin in validity is structured criticism and reflection offered by the community of learners (with the teacher facilitating this assessment) for improvement of the learner's work. The further away from the learning community that assessment construction, administration, and interpretation moves, the more questionable its validity and its utility to effect improved understanding.

INTASC Principle 9

Principle 9: The teacher is a reflective practitioner committed to continued professional growth.

Directly related to this principle is the second responsibility of the professor of education enumerated earlier: to invite teacher candidates to become democratic connoisseurs of

education; the principle implies that the teacher understands the various forms of self-inquiry, extending beyond consideration of technique to the consideration of the interactions of the various commonplaces of the school and to social critical inquiry.

The current enthusiasm for reflective practice and for action research is in danger of being co-opted by standards advocates who may limit reflection to the fine-tuning of technical competencies. According to Kenneth Zeichner's levels of reflection (Zeichner & Liston, 1996), in *technical* reflection the practitioner examines craft to strive for improvement in effectiveness. A second level of *contextual* reflection builds on Joseph Schwab's (1983) admonition to consider the practical dimensions of education. Practical reflection encourages the consideration of the interaction of the educator with the subject matter, the students, and the institutional context. Contextual reflection examines the situational and institutional factors that frame practice and finds problems that may arise from social assumptions, purposes, and aims that are contrary to the well-being of the student or client. *Critical* reflection challenges all conventional assumptions about the educator's craft and strives to determine whose power and knowledge interests are being extended and promoted through this activity (e.g., Parker, 1997). Unless reflection is encouraged on all three levels, there is not likely to be movement to reconstruct standards as a contributory rather than a controlling influence on the curriculum and the profession; of particular importance is developing reflection on the effects of implicit and explicit personal, political, economic, social, and class policies and actions on the educator's craft.

Professional growth is synonymous with growth as a teacher/learner, a companion, a global citizen, and a person. To advocate for "training" in instructional innovation or new assessment designs is not likely to renew the profession, particularly when those subject to in-service are not consulted on whether this training is responsive to their professional needs. Parker Palmer's (1998) suggestion of a more introspective approach to professional growth and renewal is more consonant with the attributes that we are advocating.

INTASC Principle 10

Principle 10: The teacher is a colleague in the widest sense, interacting with the entire school community.

The temptation here is to be pedestrian in interpreting the school community. We encourage the teacher to include in the community those who are currently writing about education's purpose. Opportunities to communicate with educators besides the person across the hall are more available than ever before through the expansion of technology. Collegiality should extend to parents and students. It should also extend to the crafters of the many other curricular artifacts that help students learn: media, the music industry, the toy industry, the

Internet, museums, and recreation and social organizations.

Conclusion

The preceding interpretation of the INTASC principles is intended both as a sample exercise and as a personal invitation. It is an exercise insofar as every professor in every college of education under accreditation in every state is being confronted with the requirement to integrate standards much like these into the design of her or his program for teacher preparation. We recognize that we have two options: Let the standards interpret our careers, or let our professional convictions interpret the standards. We advocate for the latter. The process that we have followed, a reflection on the foundational qualities that we profess as essential to the educator's craft, followed by a recasting of state and national certification standards by self-selected priorities, is now reflected in the conceptual frameworks of our respective universities.

This interpretation is also a personal invitation. It has helped us to remember the elements of education that we truly value and to prioritize our commitments to our students and our colleagues. We extend an invitation to others to share their ideas with us on points of congruence and points of contention. Through this process, we are confident that we will expand our self-understanding as philosophers of education, as democratic connoisseurs, and as progressive activists, qualities that we uphold as essential in our profession.

Notes

1. For example, see the list of state participants in the teacher certification projects conducted by the Council of Chief School Officers.

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SAYING POVERTY DOESN'T MATTER DOESN'T MAKE IT SO

Sue Books

Since the creation of a system of common schools in the early 1800s, ideas about poverty have shaped ideas about public schooling and educational reform in the United States (Kaestle, 1983). Today, we hear a lot about the need to "encourage" poor children with words of hope and possibility, based on the assumption that what they need is more faith in themselves and confidence in their academic abilities. We also hear, especially from some of the harshest critics of public schooling, about the need to tolerate "no excuses" from "the educational establishment and its apologists," who allegedly foster a "culture of defeatism" rooted in an "ideology of victimhood" (Carter, 2000, pp. 2–3).

Two sides of the same coin, the discourses of encouragement and of "no excuses" invite us to overlook the significance of poverty in schooling, the first by focusing attention narrowly on the psyches of poor children and often therefore away from broader social forces of impoverishment, and the second through caricature, ridicule, and a grab for the moral high ground. For example, according to the most recent book published in the Heritage Foundation's "no excuses" campaign, "apologists [for the educational establishment] claim that the legacies of poverty, racism, and broken families cannot be overcome when it comes to educating our nation's neediest . . . [and consequently] that poor children are uneducable" (Carter, 2000, pp. 2–3, 7). As a faculty member in a school of education and therefore a member of the "education establishment," I know of no one who makes this claim. Nevertheless, in positioning themselves against such alleged beliefs, proponents of a "no excuses" discourse encourage us to equate belief in the educability of all children with a particular school reform agenda—namely, one centered around a test-driven curriculum and skills-based instruction that links student

promotion and graduation as well as teacher pay and retention to the results of high-stakes, standardized tests.[1] Anyone who questions this agenda presumably then lacks faith in the educability of poor children.

Meanwhile, researchers continue to document the physical and emotional toll poverty takes on children's lives, including their educational lives (Books, 1998; Duncan & Brooks-Gunn, 1997; National Commission on Children, 1991; Polakow, 1993, 1998; Sherman, 1997). Shunned by many doctors, dentists, and schools and effectively from most residential communities, poor children and their families end up surrounded by almost every social ill imaginable: pollution, violence, drugs, disease, unstable employment, jobs that pay less than a living wage. All of this inevitably affects schooling. Although acknowledging this says nothing about the educability of poor children, it does suggest what it would mean to take seriously the potential effects of poverty.

I recently interviewed nine principals and assistant principals of high-poverty schools in upstate New York. The administrators spoke straightforwardly about what poverty means for their students: hunger, unstable housing, frequent moves, and so on. They also minimized the significance of all this in their own work. "We don't want to be seen as making excuses," an assistant principal explained, when I asked explicitly about the apparent reluctance to speak about the significance of poverty in schooling. Rather than "motivating" school leaders and, through them, teachers and students, I believe the "no excuses" discourse stifles thought about the educational significance of poverty in ways that are not helpful to anyone, least of all to children whose minds, bodies, and emotions are often deeply affected by poverty.

In her essay "The Emperor's New Clothes," Patricia Williams (1997) argues that just as a collective silence arose around the emperor's nakedness in the Hans Christian Andersen story, despite what his subjects saw with their own eyes, so too has a discourse of "colorblindness" arisen around the continuing significance of race in this society. Within this discourse, widespread racism hides behind an ideal of colorblindness, an ideal unrealized but affirmed as if thereby made real. Just as the townspeople in the fable denied the imperial nakedness they personally witnessed, proclamations of colorblindness in our own time and place harbor some level of self-deception, Williams argues. Many of us proclaim to be true what we experience as false, namely, the idea that color really doesn't matter any more. Like the emperor's subjects and servants, we fear that talking honestly—in our case, about the continuing significance of race in this society—would reflect badly on us. More appealing to many people, Williams suggests, is the idea that although race once mattered in this society, those days fortunately are gone. From more than one of my students and practicing and preservice teachers, I have indeed heard, "I don't see race, I see children."

I believe a similar push to "not see" the educational significance of poverty hides the damage wrought by systemic poverty and, consequently, seriously constrains thought about educational reform. Mounting evidence shows that poor children, arguably those who need the most from public schools, continue to receive the least by any measure, regarding school building conditions (Kozol, 1991), teacher quality,[2] curriculum quality (Oakes, 1985), and relationships with adults willing and able to make other opportunities available (Stanton-Salazar, 1997). For example, see the findings of Jean Anyon's (1997) study of New Jersey schools. Nevertheless, the notion that maybe poverty doesn't matter so much after all is showing up in educational reform reports shaped by powerful political agendas and is being institutionalized in school policies and practices.

Like the conspiracy of silence in the face of the emperor's nakedness, the suggestion that poverty need not matter so much in schooling serves other purposes. Although often regarded as a way of providing hope and encouragement to the poor, playing down the significance of poverty in children's school lives hands "ownership of the problem" of poverty to poor children, their families, their teachers, or school administrators. Minimizing the educational significance of poverty does not magically whisk it away. It just hinders serious public discussion.

In an article in the *New York Times Magazine*, James Traub (2000) acknowledges the difficulty of arguing, as he nevertheless does, that "educational inequality is rooted in economic problems and social pathologies too deep to be overcome by school alone." Traub states as "painful" fact his belief that over the last thirty-five years "we have fiddled with practically everything you could think to fiddle with" in an effort to improve the opportunities of poor children, albeit with little result (p. 54). Arguably, "fiddle" is all we have done, with little sincerity and so, predictably, with little result. Nevertheless, Traub understands the politics of the discourse: "Why say anything [about the efficacy of schooling] that could discourage the children, parents and teachers who so desperately need encouragement?" he asks rhetorically. "Why give aid and comfort to the opponents of high standards?" (p. 54).

These questions, which do haunt the discourse on school reform, are loaded. They represent a false choice. It is not necessary to choose between (1) taking the education of all children, especially poor children, seriously and (2) confronting the real challenges in schooling, especially those that come with the territory of poverty. "Encouragement" severed from clear-sighted understanding of what poverty means for children does little besides set the stage for exporting blame—to poor children and families, to teachers and administrators, or to teacher educators, if not all of the above. Profession of faith, even blind faith, in public schooling as a step to doors of opportunity is not the only alternative to the implied coun-

terview that, like it or not, the children of the poor for the most part grow up to be poor and the children of the rich to be rich, regardless of what transpires in the classroom. It is possible to acknowledge the actual challenges of schooling in a class-stratified society without bowing to a societal structure regarded as unalterable. I will say more about the politics of contemporary talk about poverty and schooling after considering some of the comments school administrators shared with me.

Administrators on Schooling and Poverty

During the summer of 1999 I interviewed nine principals and assistant principals in seven schools in upstate New York.[3] In all but one of the schools, most of the students (50 to 85 percent) were eligible to receive free or reduced-price lunches, a commonly used index of poverty. I asked the school administrators to talk with me in part to gather information to share with my own teacher-education students and in part to compare administrators' perspectives on the relationship between schooling and poverty with those advanced by people outside the profession. I anticipated arguing that in these times of high-stakes educational change, when politicians across the nation are lining up to champion "standards" and when state after state is wrestling with various schemes for privatizing public education, it is vital for school leaders to bring their insights more fully into the public arena. The interviews left me with a heightened sensitivity to all that works against such a contribution from school leaders, including the pressure exerted by a politically complicated and ideologically charged public discourse on poverty and school reform.

Although the interviews were conversational, all included these questions: Is poverty an educational issue? If so, why exactly? How, specifically, does poverty affect your school? Most of the administrators offered straightforward information that probably will surprise no one reading this article. They spoke of hunger, of illness, of students floundering without advocates in a system ill equipped to meet their needs, and of disruption caused by family evictions and seasonal or temporary employment.

> *The need [for students] to work interferes with time to study. Care of siblings is sometimes a factor.*
>
> **—High school administrator, Yonkers**

> *Kraft elbow macaroni and Doritos too often are staples. Covert racism within the staff. There are also health issues, asthmatics. The garbage is not picked up; [students] are inhaling contaminants. The air is foul in areas where things are burned illegally.*
>
> **—Elementary school principal, Yonkers**

> *No one is going to bat for the poorer kids. The parents don't have the wherewithal and they are scared of school. I can't have fluent conversations with native Spanish speakers. We*

[school people] don't embrace the parents because of our own limitations.
—Intermediate school principal, upstate New York

Children come in without preschool experience, immunizations, or preventive health care. . . . Families are often homeless, living in cars. Families are often evicted because their homes are condemned or because rents are exorbitant. With transportation, you could live out of the city and get something better for less. Five to 10 percent of the student body is chronically mobile. Some children register in October. Education is not a priority when food and shelter are in jeopardy. There is sometimes a lag [in registering children in school] after a move. Learning often isn't focused on the ABCs, but rather on worries: Where is my classroom? Who is my teacher? Who will be my friend? Children are preoccupied with these things and this interferes with learning.
—Elementary school principal, Middletown

There's been a decline in needy students since a trailer park was closed down. [What happened to the students?] The families moved; the students went elsewhere. This was hard. The parents often did not have a car, so meeting with them was difficult. They often didn't have a phone either, but usually did have Medicaid, which made it possible to get services like outside counseling. . . . Our third-grade PEP [Pupil Evaluation Program] was up last year [compared with the year before when the students living in the trailer park were enrolled]. Also, discipline referrals have dropped.
—Elementary school assistant principal, upstate New York

Along with the preceding types of comments, with few exceptions the administrators made a point of affirming the abilities and aspirations of students living in poverty with statements like these:

Their academic ability is equal [to that of other students].
—High school administrator, Yonkers

Whether belief or fantasy, students have high aspirations.
—High school principal, upstate New York

Questions about parents evoked mixed feelings:

Parents don't always know what to do. They don't know about postsecondary education. We [teachers and administrators] have to convince the parents that their child should go on. . . . Hispanic parents expect schools to take care of all educational concerns—hence, it is very odd for them to come in making demands. They believe the school has the knowledge.
—High school principal, Yonkers

All parents want the best for their children. I've had crack-addicted

mothers in my office demanding the best for their children.

—Elementary school principal, Yonkers

What are the problems? Preoccupation on the part of the parents with other habits, such as drugs. Parents check in with the school only when they are stressed, by their kids or the school, and then they come in a reactive mode. [They] trust in the system, perhaps too much. Parents say they don't read the school newsletter because they trust the school: "We believe you will do the right thing." And [there is the] belief that schools should do it all. Parents' attitude is: "We feed and water them. You do the rest."

—High school principal, upstate New York

Parents want their kids to do well in school. With whatever they can bring to this world to make that happen, they're doing it. When they have difficulty getting to school, it's often because the school is a magnet facility and they don't have cars and have younger children at home.

—Elementary school principal, Yonkers

The school administrators also spoke of racism harbored in teachers' biases, of a general lack of understanding of the role of culture in education, and of self-interested union agendas:

The impact of poverty on education depends on where the child is going to school. Teachers and what they bring, such as personal biases and expectations, are the critical variables. Success is predicated on expectations. If I am a white person in the Northeast, if all my educational experience has been here, I will have an Ivy attitude. . . . The real issues for economically disadvantaged pupils are teachers' knowledge of culture and knowledge of teaching modalities.

—High school assistant principal, upstate New York

The constituents [teachers] aren't representing the clients [students]. Unions . . . need to recognize the difference between "adult working conditions" and "student learning conditions," which schools control.

—Elementary school principal, Yonkers

Most of the administrators volunteered strong affirmation not only of the abilities and aspirations of children and youths growing up in poverty, but also of the opportunities open to them:

Poverty is not a deterrent. It makes children stronger. It's not an easy road, but it's not a dead end either.

—High school administrator, Yonkers

Poverty makes the kids' job more challenging, not mine. . . . Schools have always been a refuge for poor kids.

—Elementary school principal, Yonkers

The gold ring is a possibility. You're only limited by your own fears. We

have to not only give this message, but also the means. We need to tell you [students] every day: yes you can.

—Intermediate school principal, upstate New York

Although poverty is a risk factor, you cannot use poverty as an excuse for academic achievement.

—High school principal, upstate New York

The Discourse on Poverty and Schooling

The research is conclusive: Chronic shortages of nutritious food, unstable housing, emotional stress, inadequate health care, environmental poisons—all of which poor children suffer in disproportionate numbers—complicate schooling, at best. Meeting the educational needs of poor children consequently requires more from teachers, schools, and the broader society. Although the nation's highest courts have never acknowledged the significance of the educational inequities poor children suffer as a group,[4] a major piece of federal legislation, Title I of the Elementary and Secondary Education Act, which provides funds to local school districts that serve large numbers of poor children, stands as official recognition of the toll poverty takes on children and youths.

So too do the administrators' comments about all that poverty means for students and to some extent for themselves. Almost all of these administrators are struggling continually to "do more with less," spending long hours and many vacations writing grant proposals seeking private funding for much-needed services, and dipping into their own pockets, in some cases considerably, to help students in one way or another. No money for lunch, for a ticket to the prom, for a dress for the prom, to pay college application fees, to make college tuition payments—the administrators I spoke with are "fixing" all of these poverty-related problems by "throwing money" (their own) at them.

Given all that these school leaders point out goes hand-in-hand with poverty—hunger, stress-induced distraction, frequent absences and school changes, exposure to environmental poisons, and so on—it's difficult to understand some of their other comments. In what sense does poverty challenge students but not their teachers? In what sense are poor children (or any children for that matter) limited only by their own fears? And why the caution that although a risk factor, poverty ought not be used as an excuse? Why assume the two go together—recognition of the "risks" of poverty and efforts to "excuse" low achievement?

The administrators' seemingly contradictory suggestions—that, on one hand, poverty doesn't affect their own work that much, and that, on the other, it affects their work in clear, quantifiable ways—make sense only in the context of a larger discourse on poverty and school reform. As an illustration of the ideological framework shaping this discourse, consider the 1986 film *Stand and Deliver*. Based

on former high school teacher Jaime Escalante's work with Chicano students in a Los Angeles barrio, the film illustrates the kind of thinking about poverty and school reform that is both pervasive and dangerous in the sense that it undermines serious discussion of the educational significance of poverty.

Early on in *Stand and Deliver*, the principal of Garfield High shares some bad news with the math faculty: The school's accreditation is in jeopardy; improvements in student achievement must be shown by the end of the year. As depicted in the film, this is a school where the principal refers to students as "little bastards," students strip their teachers' cars, physical education instructors double as math teachers, and parents seemingly have little interest in or appreciation of their children's education. "If we fail," the principal warns, "we'll be put on probation." Offended by the suggestion, the chair of the math department protests: "If *we* fail? You can't teach logarithms to illiterates. These kids come to us with barely a seventh-grade education. If you want higher test scores, start by changing the economic level of the community. There isn't a teacher here who isn't doing everything he possibly can." At this critical juncture Escalante speaks up. "*I'm* not," he says. "I could teach more." "What do you need?" the principal asks, skeptical but intrigued. "*Ganas*," he replies. "That's all I need is *ganas*."

As the fact-based story unfolds, Escalante proves his point that given adequate desire and perseverance on the part of teacher and student alike, the effects of poverty, years of low-quality schooling, and institutionalized racism can be overcome. Escalante ridicules goof-off students who appear headed toward dead-end jobs: "Tough guys don't do math; tough guys deep-fry chicken for a living," he tells them. In an effort to push his students into a consciousness of opportunity, Escalante almost dares them to cling to their beliefs that schooling doesn't matter. "Ten million people out of work—that's a negative number," a young man retorts when Escalante tries to explain the concept of negative and positive values. "We're going to need a lot of Kleenexes," Escalante snaps back.

Escalante announces a "new school order" on his second day at the school: "We will begin each class with a quiz. There will be no free rides, no excuses. You already have two strikes against you. There are people in this world who will assume you know less than you do because of your names and your complexion. But math is the great equalizer. When you go for a job, the person giving you that job will not want to hear your problems and neither do I. You're going to work harder than you have ever worked before. The only thing I ask from you is *ganas*—desire."

The new teacher invites those unwilling to play by these rules to free up their seats in the class. Some do, but those who stay end up passing the AP [Advanced Placement] calculus exam with flying colors—twice, the second

time to disprove disbelievers at the Educational Testing Service. We learn at the end of the film that this level of achievement was not a fluke. For at least five years thereafter, the number of Garfield students passing the AP calculus exam continued to rise.

The film makes me cry. The students and their teacher work so hard and accomplish so much. It's gratifying to see them finally get some well-deserved public acknowledgment of their academic achievements. Relationships develop, Escalante seems to find a long-sought sense of meaning and purpose in his life, and the students grow in confidence and competence. Racism is outed and individual potential affirmed.

The film also leaves me feeling manipulated. Are these really the only viable perspectives on the relationship between schooling and poverty: either Escalante's belief that, given the requisite desire, schooling can open doors to the children of the poor and render social injustices irrelevant, or his department chair's suggestion that, given entrenched mechanisms of social reproduction, schooling cannot significantly alter class structures? Why frame thinking about schooling and poverty in this polarized way?

The Politics of "Not Seeing"

A long tradition of scholarship supports the view, caricatured in the film *Stand and Deliver*, that for the most part schools reflect and shore up broader societal structures and therefore do very little to "level the playing field" (e.g., Bowles & Gintis, 1976). Sadly, the plethora of test scores now circulating among state departments of education and showing up in local newspapers does little to challenge this observation. When the New York State Education Department reported the results of a fourth-grade math test and of eighth-grade math and language arts tests for the year 1999, the scores for the huge conglomeration of New York City districts were distressingly predictable: "The city districts that performed poorly, like those that performed well, scored almost exactly as the socioeconomic status of the children in them would have predicted. You could have predicted the fourth-grade test scores of all but one of the city's 32 districts merely by knowing the percentage of students in a given district who quality for a free lunch" (Traub, 2000, p. 52).

Results of the 1999 Florida Comprehensive Assessment Test revealed the same pattern. Florida grades its schools on the basis of their students' test scores. Across the state, no school in which fewer than 10 percent of the students qualify for the free lunch program scored below a C, and no school in which more than 80 percent of the students qualify for the free lunch program scored above a C (Wilgoren, 2000).

A 1999 study confirmed that "level of school funding and child poverty have substantial and statistically significant net effects on average student achievement among the school districts of America" (Payne & Biddle, 1999, p. 11). Payne and Biddle's calcu-

lations showed that if scores in the Second International Mathematics Study had been generated solely by well-funded schools in low-poverty districts, the United States would have ranked second only to Japan among the twenty-three participating nations. On the other hand, if scores had been generated solely by very poorly funded schools in high-poverty districts, "our aggregate achievement score would have been below those of all other industrialized nations studied and nearly on a par with those of Nigeria and Swaziland!" (p. 11). These numbers suggest poor children are *not* being educated to vie competitively for opportunities in higher education and professional work. These numbers say nothing at all, of course, about the potential of individual students, poor or not, to learn, but speak volumes about the school experience of poor children, that is, about what poverty actually means in schooling.

I cite this research not to argue for resignation and throwing up one's hands, but rather to critique the conceptual straitjacket perpetrated in films like *Stand and Deliver*, in the recent "no excuses" discourse, and even in the comments of well-meaning, dedicated school professionals. The suggestion that schools can do either everything or nothing at all is a pseudo choice, a stacked deck. Who's going to side with the naysayers? This "good guys, bad guys" scenario provides a backdrop for a whole genre of "inspirational" stories of teachers and students who succeed against the odds (Ayers, 1994). The "good guys" (e.g., Escalante) have faith and hope in young people; the "bad guys" (e.g., his department chair and the Educational Testing Service) don't. It's easy to side with the former and feel good. However, mapping the conceptual terrain in this way—two choices, only one of which is morally tenable—seriously constrains informed discussion of the significance of poverty in schooling. When hopelessness and fatalism become the only imaginable or morally permissible alternatives to blind faith in the efficacy of schooling, little serious discussion of the significance of poverty in the educational lives of children is possible.

In such an ideological climate, get-tough policies that "hold schools accountable, regardless," make sense. So does the use of high-stakes testing to control almost every aspect of schools (curriculum, instruction, and assessment; students' promotion and graduation; teachers' and administrators' pay and tenure). So do professional preparation programs for educators that invite little thought about what poverty actually does to and means for children. So too do task force reports, such as one issued by the American Council on Education (1999), which states: "We know now that the quality of the teacher is the key to improved student performance regardless of the condition of the schools, the affluence of the child, the nature of the community, or any other element in the lives or educational environment of school children" (pp. 5–6).

The assertion that the condition of schools, the material well-being of

families, and the dynamics of communities are not even worth thinking about—of no regard—in considerations of how best to improve student performance flies in the face of decades of research (e.g., Anyon, 1997; Coleman et al., 1966; Kennedy et al., 1986; Kozol, 1991, 1996; Wilson, 1987). It is also unnecessary to make such an assertion if the point is simply to affirm the educational importance of teachers. This affirmation does not require dismissing entirely the significance of school facilities in good repair, of families able to stay afloat financially, or of community supports for parents and other caregivers for children.

It's hard not to feel that little has been learned. This discourse has a long history. In the wake of the controversy over the Moynihan report on the black family in the 1960s, many scholars have shied away from serious research and commentary:

> The vitriolic attacks and acrimonious debate that characterized that controversy proved to be too intimidating to scholars, especially to liberal scholars. Indeed, . . . in an effort to protect their work from the charge of racism or of "blaming the victim," liberal social scientists tended to avoid describing any behavior that could be construed as unflattering or stigmatizing to racial minorities. Accordingly, for a period of several years and well after this controversy had subsided the growing problems of poverty concentration, joblessness and other social dislocations in the inner-city ghetto did not attract serious research attention. Until the mid-1980s, the void was partially filled by journalists, and therefore conclusions about the behavior of inner-city residents were reached without the benefit of systematic empirical research or thoughtful theoretical arguments. (Wilson, 1997, p. 753)

Wilson (1997) fears the same thing could happen again in the wake of the more recent controversy over the use and misuse of the term *underclass*. The contemporary discourse on poverty and schooling suggests these concerns are warranted. Although there is no scarcity of research in this area, "thoughtful theoretical arguments" seem overshadowed by overstated proclamations about the power of schools to render all other social injustices meaningless. At best, this is naive, at worst, a politically shrewd manipulation that ultimately pits teachers and students against each other.

In the prevailing, show-me-the-numbers climate, polarized, all-or-nothing thinking about the relationship between schooling and poverty leaves school leaders in the untenable position, ultimately, of making poverty not matter so much after all. When high-profile school reform reports, popular films, and even some professional preparation programs denigrate talk about the educational significance of poverty as "making excuses," school leaders predictably will speak cautiously. This in turn deprives the public of important insights and undercuts advocacy for poor children.

If poverty doesn't really matter, why go to bat for poor children?

Three decades ago, Robert Rosenthal and Lenore Jacobson (1968) warned that educational policy makers were asking the wrong question:

> Over time, our educational policy question has changed from "Who ought to be educated?" to "Who is capable of being educated?" The ethical question has been traded in for the scientific question. For those children whose educability is in doubt, there is a label. They are the educationally, or culturally, or socioeconomically, deprived children and, as things stand now, they appear not to be able to learn as do those who are more advantaged. (p. 181)

We seemingly have come full circle, trading in the scientific question for the earlier question, recast in the terms of what Cornel West (1999) calls market values. As a superintendent in Florida, where teachers and students at the time were coping with the effects of high-stakes testing linked to a statewide voucher program,[5] says: "When a low-performing child walks into a classroom, instead of being seen as a challenge, or an opportunity for improvement, for the first time since I've been in education, teachers are seeing them as a liability" (Jim May, quoted in Wilgoren, 2000).

Who ought to be educated? Whoever looks like a net gain for all those with a stake in the test scores.

However damaging perceptions of deprivation may be, construing children oppressed by poverty instead as test-score liabilities is hardly progress. A "no excuses" discourse invites this shift in perception in many ways. Just as the claim "I don't see race, only children" enables racism to flourish unacknowledged and therefore uncritiqued, the claim not to see poverty, only children, enables the experience of poverty and all that goes with it to bear down on children with force, but without acknowledgment and so without protest. With poverty very often comes hunger, unstable housing, chronic stress, disproportionate exposure to environmental poisons, and the need to endure "quiet forms of shame" day in and day out (Weissbourd, 1996, p. 14)—and consequently lower test scores, on the whole. Not seeing all that affects academic achievement does not somehow purify standardized measures. Instead, it transforms children weighed down by poverty into liabilities to be avoided in the race for high numbers.

Mounting evidence suggests that as a group, the children of the poor, especially those in high-poverty schools, are not receiving anything remotely resembling an adequate education. A polarized discourse on schooling and poverty that invites either get-tough directives of "no excuses" or inspirational proclamations of hope and faith in individuals, regardless of the social oppressions they endure, does not challenge this reality in any way. Changing this discourse might, and that will require school leaders and others genuinely concerned with the

education of all our children to speak up clearly and persistently, like the little boy in Hans Christian Andersen's story, about what we see and know, even if this costs us something. I believe it is neither "no excuses" nor "more encouragement" that poor children need most, especially if these attitudes are based on a rose-colored "not seeing," but rather the opportunity and support that can come only from clear-sighted acknowledgment of all that so profoundly discourages children and robs them of their courage.

Notes

1. See, for example, Samuel Casey Carter's (2000) conclusions in *No Excuses: Lessons from 21 High-Performing, High-Poverty Schools*, published by the Heritage Foundation as part of its "no excuses campaign."

2. The Education Trust's (1998) report on "good teaching" includes statistics on the number of teachers with majors in their fields of instruction in low-poverty vs. high-poverty schools. Although the precise relationship between good teaching and major-in-the-field is unclear (Friedman, 2000), this does suggest one more way in which poor children get less.

3. This research project was supported by a Research and Creative Projects Award from the State University of New York at New Paltz. In accord with funding requirements, I have concealed the identities of those interviewed.

4. See *San Antonio Independent School District v. Rodriguez*, 541 U.S. 1 (1973).

5. At the time I was writing this article, the Florida voucher program was facing a challenge in state court.

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ON STANDARDS, DEWEY'S AIMS, AND THE TENSIONS OF LEARNING

Susan Field Waite

I've been thinking about underground bunkers lately. I recently visited a Russian underground bunker that had been built during World War II. The exterior of the building that stood over the bunker looked rather unremarkable, blending into the gray, winter streetscape without distinction. Hidden beneath ground level, however, far below the city streets, deep within the holdings of reinforced steel, was something quite extraordinary: a bunker built for Stalin during the Second World War, a bunker unknown even to city residents for decades.

How does a massive bunker get built without a city knowing? Some people say that city residents were astonished in the 1990s to learn of the long-term existence of the bunker. How, people asked, could such a bunker have been built without their knowledge? Even if no one had spoken of the construction, how had vast amounts of excavated earth been removed without the city people seeing signs of it? I stood there, in this once secret bunker in a once secret city, whose name had been omitted from many maps until the 1990s, thinking about what people do not want to know, what they cannot bear to know, and what we keep secret from others and from ourselves.

Though my visit has long since passed, the bunker keeps returning to me in the form of questions. What might we not want to know about particular situations or issues? Why are some things visible to people and other things not? What kinds of psychic reinforcements do individuals and groups create as defenses against their fears or losses? The image of the bunker and the questions its existence raises have returned to me again in relation to the standards-based reform movement in education, including high-stakes "accountability" testing.

In this chapter, I discuss the idea that some of John Dewey's writing on the unconscious might inform our thinking about the standards-based reform movement. Despite Dewey's use of the scientific method as his model for education, Dewey also expressed views that are not easily contained within such a framework. Dewey's writing on the influence of unconscious desires on teaching and learning can shed light on how the standards movement might tell us more about what adults need from students than about what students need to know and be able to do.

"Why have men become so attached to fixed, external ends?" asked John Dewey in 1922. Today we might ask why many people have become so attached to fixed, external standards and standards-based testing results. Standards have been touted as a means of accomplishing a variety of tasks, including introducing rigor to the curriculum, raising achievement, increasing productivity, fostering rational curriculum planning, and allowing for the monitoring of teaching, learning, and resources. In the past decade, standards and standards-based high-stakes testing have been shaping views of learning, the discourse on education, and school practices (Husen & Tuijnman, 1994; Jennings, 1998; Noble, 1997). More than forty states have enacted legislation for standards, thirty-three of them including high-stakes testing with exit exams and benchmark tests to determine achievement (Relic, 2000).

Although we still do not know all of the consequences of the standards-based reform movement, we do know some things. For example, in some schools, the high-stakes nature of the standards-based tests has prompted increased use of drills and practice tests. Many teachers report increased stress, both for themselves and their students. On the other hand, test scores of students in minority groups in some states have been rising. Do the ends justify the means? If so, which ends do we choose? Dewey warned that the goodness of any end result makes no difference. Whenever an end is set up as "complete and exclusive, as demanding and justifying action as a means to itself, it leads to narrowness; in extreme cases fanaticism, inconsiderateness, arrogance, and hypocrisy" (Dewey, 1922, p. 73). High-stakes testing is leading to a narrowing of education in inequitable ways. Which children do you think will get taught things beyond the tested curriculum: those children of low achievement and low socioeconomic class, or those children of high achievement and high socioeconomic class? Many high-stakes tests serve only as punishments for students who fail to pass exams. The tests do not even adequately address some of the economic issues frequently cited as their rationale, for they do not assure certified graduates of jobs, let alone highly skilled and highly paid jobs (Noble, 1997).

Why do people see some possible consequences and not others? According to Dewey (1922), we refuse to see the multiple consequences that are

possible with any one action, because we wish to justify what we do by focusing on a particular desired consequence. We avoid "a reasonable survey of consequences because of a subconscious recognition that it would reveal desire in its true worth and thus preclude action to satisfy it—or at least give us an uneasy conscience in striving to realize it" (Dewey, 1922, p. 75). Thus, our aims or ends-in-view are but a "means to unification and liberation of present conflicting, confused habits and impulses" (Dewey, 1922, p. 75). Individuals select one end over another based upon which one can best psychically unify, and provide a release for, their conflicting desires. The same Dewey who advocates a systematic, scientific approach to education thus also seems to suggest that our aims and fixed ends often are intimately linked to our unconscious desires. Dewey (1922) proposes that aims begin with an initial "emotional reaction against the present state of things and a hope for something different" (p. 78). Fixed ends, writes Dewey, are but "props for a feeling of safety" (p. 80).

We can view fixed ends, therefore, as types of psychic defenses. For example, fixations on standards-based accountability testing can serve as a safe distraction that contains our fears and psychic losses. They can provide an illusion of certainty to the uncertain process of learning. Advocates of accountability testing cite rising test scores as clear evidence of learning, but learning cannot be measured in neatly planned yearly increments. Learning cannot be mapped by a one-size-fits-all fixed curriculum of mandatory knowledge and skills. Learning cannot be standardized.

The object relations approach within psychoanalysis suggests the importance of attending to the relationships between the student and the teacher, and between the student and the subject matter (Waite, 1999). This relational, intersubjective view of learning, which recognizes learner diversity as well as the cognitive and affective aspects of learning, fits with Dewey's concern for continuity in means and ends. (Rejecting Allport's criticism that Dewey had no theory of human selfhood, Calapietro [1999] has argued that Dewey actually had a pragmatic view of the self that was grounded in his concept of interacting organisms.) Dewey (1939) speaks to the need for continuity between means and ends by referring to an essay by Charles Lamb on the origin of roasted pork.

According to Dewey (1939), in the essay Lamb describes how roast pork was first discovered when a structure that housed pigs accidentally burned down and the owner burned his hand in touching the roasted pigs. He then licked his fingers to cool them and tasted roast pork for the first time. From then on, roast pork was obtained by burning down houses. Dewey proposes that readers enjoy the story because they perceive the "absurdity of any 'end' which is set up apart from the means by which it is to be attained and apart from its own further function as means" (p. 97). Roast

pork was not a deliberate end during the first fire; it was an unforeseen, unintended consequence.

Dewey (1922) proposes that our aims, or ends, are "stumbled upon" in the beginning: "Men like some of the consequences and dislike others" (p. 71). Might we be burning down schools today just to obtain a common set of what are often minimal-level skills for children? Is it possible that other aims and consequences were discounted when we tasted some of the results of testing: rising levels of achievement on limited tests of those skills? Accountability testing of standards-based knowledge and skills, when viewed from this perspective, provides particular results with some certainty, although with costs to those in our schools. When rising test scores are pointed to as evidence of the success of standards-based accountability testing, we must ask ourselves if accountability and rising levels of minimum skills are worth the cost of the means to get there. We still do not know all of the unintended effects of standards and high-stakes testing on learning, children, teachers, or public education.

We may be burning down public education and hurting children and teachers in our quest for higher test scores. We do not know. Standards may be leading us to the creation of a narrow, managerial, competition-based definition of education. We do not know. The standards-based reform movement could be opening the door to more charter schools and vouchers. We do not know. Standards may be encouraging education (and educators) to be externally defined and managed by narrow, short-term economic interests. We do not know. We may be failing to see the extent to which economic interests—fueled by consumerism, technological advances, an increasingly global marketplace, and fears of perceived losses and future economic, moral, and cultural decline—have already shaped and redefined American public education, sliding us into a consumer-driven, privatization of public education. We do not know.

There is much that we do not know about the long-term effects of standards and high-stakes testing. The public has failed to engage in ongoing, necessary dialogue on the aims of education and the nature of learning, and educators have failed to lead this discussion. This failure can even be viewed as a moral abdication, allowing politicians, business people, and others outside the field of education to define and manage education in terms of narrow, short-term ends, what Dewey calls "ends-in-themselves."

Another possible consequence of the standards-based reform movement is its influence on our views of student learning and assessment. For example, Dewey (1904) asks us to consider that one of the potential costs of gaining immediate skill can be the power to go on growing. He comments on the abilities of some learners (in this case, beginning teachers) to surpass those who seemed more capable initially. He proposes that placing "undue premature stress" on securing immediate ca-

pability can stunt the development of even the most promising learner. The transfer-of-learning perspective that looks at performance for future learning (PFL) suggests a need for more assessments that look at performance over time. Assessments should move from being static, one-shot measures to dynamic environments that provide opportunities for new learning (Bransford & Schwartz, 1999). The high-stakes testing movement largely has ignored such considerations that would provide more continuity between means and ends, as Dewey urged.

Frequently touted reasons for the use of standards and standards-based accountability assessments include increasing academic rigor and the raising of levels of achievement. Dewey (1922) cautioned that there are always multiple and unintended consequences for any action, although people permit the view of their desired end to "blot from perception all other undesired and undesirable consequences" (p. 74). We can refuse learning. We can repress what we do not want to know. For example, Dewey (1922) proposes that intelligent people can focus on particular consequences and seem not to see a broader range of possible consequences, plunging "with their own desires into the unceasing flow of changes, and seiz[ing] upon some object as their end irrespective of everything else" (p. 73). According to Dewey (1922), we avoid surveying all of the possible consequences for unconscious reasons: "The survey is avoided because of a subconscious recognition that it would reveal desire in its true worth and thus preclude action to satisfy it—or at all events give us an uneasy conscience in striving to realize it. Thus the doctrine of the isolated, complete, or fixed ends limits intelligent examination, encourages insincerity, and puts a pseudostamp of moral justification upon success at any price" (p. 75).

Possible negative consequences can be discounted or rationalized: "One reminds oneself that one's end is justice or charity or professional achievement or putting over a deal for a needed public improvement, and further questionings and qualms are stilled" (Dewey, 1922, p. 74). Similarly, the ends of higher achievement and accountability are said to justify the means, including high-stakes testing. Dewey's views on these kinds of justifications are clear, and we have been choosing to ignore them.

Although Dewey embraced a scientific method that included control, experiment, and objective test, he also thought that trying to specify the precise knowledge that a student should achieve creates a situation where ends are "remote, distinct, and separate from practical contingencies and the dynamic purposes of pupils" (Archambault, 1964, p. xxiii). Dewey (1934) believed that traditional school methods and subject matter failed to take into account learner diversity. A uniform curriculum assumed that "all human beings are as much alike as peas in a pod" (p. 5). Dewey also anticipated some of the student reactions to contemporary external ends,

writing that "unwillingness to learn naturally follows when there is a failure to take into account tendencies that are urgent in the existing make-up in an individual. All sorts of external devices then have to be resorted to in order to achieve absorption and retention of imposed subject matter and skills" (p. 6).

Schools now put up posters and have pep rallies to encourage high achievement on tests. Some teachers have resorted to using food to reward children for testing-related tasks. These are just some of the ways that standards seem to be influencing what goes on in schools. We do not know all of the unintended ends.

Dewey's ideas regarding the influence of unconscious desires suggests that adults may want different things from the standards movement than their professed desired consequences. In other words, what do adults want from children in the name of standards? Education standards may serve to reassure the public in uncertain times. Dewey (1922) suggests that "love of certainty is a demand for guarantees in advance of action" (p. 80). Standards might provide adults with the illusion of security to allay fears regarding the ability of an increasingly diverse population to support them as they age. Standards might provide adults with an illusion of security to allay fears regarding the national ability to compete in an increasingly global economy.

Standards might also provide some adults with a feeling of superiority; in calling for more rigor in the curriculum for others, they place themselves above those others. Standards and standards-based testing, as fixed ends, might have appeal as comfortable, morally justifiable ends that do not really require debate and dialogue after some initial inclusive participation. Perhaps we do not want to admit that we really do not want to participate in the hard, intellectual work of ongoing debate and dialogue on the aims of education. Despite years of talking about standards, there has been little sustained national dialogue on the aims of education and what it means to live a good life. Could these be some of the unintended effects of standards?

Despite Dewey's striving for a systematic and scientific approach to education, his writing also seems to acknowledge some of the uncertainty and unpredictability of learning. His writing on the influences of our unconscious desires on aims and ends suggests the psychic nature of learning. Learning cannot be reduced to, or contained by, rational aims and ends, standards, and high-stakes testing.

It is interesting that the public has largely accepted systems of standards and accountability tests without continued outcry. We rationalize that it is okay to teach to the test, if the test is based upon the standards, no matter if the standards themselves are narrow, short-term ends. Perhaps we are failing in moral education, starting with ourselves. What kinds of bunkers are we building?

Standards and standards-based high-stakes tests all too often have become Dewey's ends-in-themselves.

Dewey (1922) thought that aims should be "ways of defining and deepening the meaning of activity" (p. 72). Aims, or "ends-in-view," should be considered means: "In a strict sense an end-in-view is a means to present action; present action is not a means to a remote end" (p. 72). Contrast this view with the practices arising out of the marriage of standards and accountability, when politicians know that they need to show results in a short period of time. High-stakes testing has created an atmosphere where teaching to the test is acceptable. Recall what Dewey said about ends-in-themselves: "When ends are regarded as literally ends to action rather than as directive stimuli to present choice they are frozen and isolated" (p. 73). Standards might be more defensible if they were used to promote genuine dialogue and debate on important questions and issues. Standards might be more defensible if used as true guides, as when Dewey talked about using the stars to navigate toward ever-moving destinations (Dewey's endless ends). Instead, all too often in our nation's schools, tests have become the final destination.

Notes

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DEVELOPING A CURRICULUM OF COMPLEXITY

Substituting Connectedness for Fragmentation

Joe L. Kincheloe

Many citizens, politicians, and even educational leaders in the United States believe that the school curriculum is pretty much the same everywhere and, with minor updates because "new stuff happens," has always been the same. Little could be further from reality. The knowledge of the various disciplines, it is believed, is pretty much the same in Alaska as it is in Alabama, and the goal of education is to simply inculcate this knowledge, to insert it into the minds of students. This "commonsense" data-transmission model of curriculum is the one that persists in the new packaging of technical standards. We develop a body of objective knowledge, transmit it to students who commit it to memory, and then we test them to see how much they "mastered" (Slattery, 1995; Kincheloe, Slattery, and Steinberg, 2000; Pinar et al., 1995).

Over the past thirty years a number of curricular scholars have challenged this traditional story, offering a *reconceptualization* of the nature of curriculum and the purposes of curriculum development. Scholars such as William Pinar, Madeline Grumet, JoAnne Pagano, William Reynolds, Maxine Greene, Nelson Haggerson, Alan Block, William Schubert, Patrick Slattery, Marla Morris, and many others have formulated alternative perspectives on what curriculum entails. Instead of simply involving a course of study, the curriculum might involve a more holistic view of a student's experience, the analysis of the individual as he or she relates to the world, the process of inquiry about self and world and the insights that are produced in such an activity, and so on. If the curriculum involves these dynamics, then classroom pedagogies, teacher education, evaluation procedures, and standards of educational reform would have to be reconceptualized as well.

This essay examines curriculum development as it might take place in standards of complexity and in the struggle to deal with reductionistic impulses. What might we have to know to develop a curriculum of complexity? Taking into account issues of knowledge production; the sociocultural, political, and economic context in which schooling takes place; the skills and insights of scholar-teachers operating in the zone of complexity; and an awareness of the different purposes that different educational systems have pursued, the curriculum of complexity flies in the face of those who have viewed curriculum development as a simplistic and technical maneuver. There is nothing simple about the way that curricula are put together and sold to the public as official. If we look at only a few factors involved in this process, then we gain tremendous insight into its complexity.

The Curriculum of Our Lives: Knowledge, Subjectivity, and Content

In the technicist curriculum of reductionistic standards, validated knowledge is taught to students regardless of where they come from or their social and personal relationship to the subject matter. Such a curriculum is a body of discrete knowledge separate from those who learn it or the contexts in which it is learned. The Cartesian separation of knower and known with its assumption of an objective world "out there," regardless of the experience of the perceiver, philosophically grounds the technicist curriculum. Advocates of a curriculum of complexity maintain that if knowledge is the prerequisite for social action, and if social action transforms knowledge, then knowledge cannot be conceived as static and certain—the foundation is laid for the social-political construction of reality and the sociopolitical construction of the curriculum. What is included in the technicist curriculum and its conception as a separated body of subject matter are always a political process.

As a political process, certain curricular knowledge might serve my best interests while not serving your best interests. For example, the particular knowledge in this curriculum is important because it sheds a warm light on my best interests. The knowledge in that curriculum does not make people such as me look very good. Several years ago I heard the following comment from a historically savvy local entrepreneur:

> As a businessman who believes in the unfettered free enterprise system, I would prefer you not include a lot of material on American labor and its reaction to its situation in the late nineteenth century in our school district's curriculum. Such information makes American business people look too mean and insensitive—it's bad PR for us. It raises too many questions in the minds of students about the unqualified benefits of the free market. I would rather the curriculum include descriptions of the philanthropy of Andrew Carnegie.

Of course, the politics of curriculum does not often reveal itself so openly. Usually such concerns as expressed by our businessman are articulated in a far more arcane and shielded manner.

Thus, as with the social construction of what we refer to as "reality," the same dynamic is at work with the curriculum—it is a social and political construction and is always the result of a typically covert and not generally known set of historical and contemporary political battles. Like all knowledge and all curricula, knowers also belong to a particular, ever changing historical world. Humans, being part of history, are reflexive subjects—they are entities who are conscious of the constant interaction between themselves and their world. This interaction and the consciousness that comes out of it recognize that all knowledge, all curricula, are fusions of knowers and what is known operating in a context shaped by power. The point that emerges here that is so important to curriculum development in the standards conversation is that the curriculum is never an objective structure. It is always ideologically inscribed and a result of specific political choices. Thus, in a *democratic* society, it can never be developed innocently or without conflict. Standards from this perspective must always be fought over.

The problem with some of the advocates of top-down technical standards is that they believe the curriculum that emerges from their standards is the "truth." They operate on a belief structure that the ancient Greeks referred to as the myth of Archimedes. The myth assumes that the human perceiver occupies no space in the known world, that there is a point—the Archimedean point—from which the world can be seen in its entirety. The knowledge produced from this point cannot help but be true. Advocates of top-down technical standards see their curriculum as emerging from the Archimedean point. The lesson of the myth, of course, is that there is no such point and thus all of our views of reality are from partial, limited perspectives, and as a result our knowledge of the world is partial and limited. Since we can never develop knowledge apart from ourselves and our lives, then our curriculum should understand the ways our lives shape our knowledge of the world and how knowledge in turn shapes the nature of our lives. Here is the complex act of analysis, here is where our cognitive ability is boosted to a higher power, here is where the curriculum of complexity earns its spurs.

As living parts of the world that we are trying to figure out, we can approach it only from the existing political, epistemological, and cognitive infrastructures that shape our consciousness. Limited in this way, we can see only what our mind allows. With this restriction, we are free to construct the world any way we desire. This is not to say, however, that the outcomes of our constructions will not be confused and may be even destructive. We may, for example, adopt a worldview such as the medieval Europeans. In this view of the

world, sanitation was irrelevant and thousands of individuals died as the result of the black plague. Obviously, this was not an adequate construction of the nature of the world. This recognition confronts us with calls to develop a way of determining valid constructions of reality.

All that advocates of the complexity principle can do in response to such a need is to lay out some guiding concepts for judging more-adequate and less-adequate constructions:

1. The constructions are consistent with our democratic, multiperspectival system of meaning
2. The constructions are helpful in our attempt to attain goals that encourage self-direction and productive membership in democratic communities
3. The constructions are internally consistent
4. The constructions contribute to the ability of humans to function and survive
5. The constructions are appropriate for the purpose of the inquiry and knowledge production
6. The constructions avoid reductionism, as they recognize the contextual complexity of the situation in question
7. The constructions help us construct a curriculum of complexity that produces rigorous scholars, helps individuals understand themselves in relation to the world, educates lifelong learners, and raises more questions than it answers (Fosnot, 1988; Bohm and Peat, 1987; Leshan and Margeneu, 1982; Pinar, 1994; Block, 1995)

Thus, as standards of complexity put together the curriculum of our lives, we begin to gain insight into a far more rigorous and exciting notion of curriculum development. Curriculum planners operating in the zone of complexity tell the public, political leaders, teachers, and students that the reductionist effort to deny the influence of values, historical circumstances, and political considerations in the construction of the curriculum is a power-produced smoke screen. Our understanding of curriculum development and our attempts to engage in it always depend on our social location and the epistemological and political frames we use to make sense of curricular issues. Consider that these frames are the glasses through which we observe the world. We all have them whether we know it or not, and such frames are always constructed by individuals in a manner that falls outside the boundaries of Cartesian science—they cannot be subjected to empirical verification. The curriculum developers operating within the box shaped by the assumptions of top-down technical standards claim that none of these dynamics exist, that they are nonpartisan educators simply in pursuit of the facts.

Indeed, they are the Jack Webbs of standards, asking only for the facts, serving no cause but the truth. They have not yet grasped the notion that every historical era, every culture pro-

duces particular rules as to what may be described as a "fact." Different rules privilege different causes—and everyone, everywhere has one (or more) of these agendas, even though, again, they may not know it. And this is a key goal of a curriculum of complexity: to help individuals understand the causes they serve, the assumptions that drive them, the agendas they promote, and how all of this shapes their perception of self and world. Another central tenet of standards of complexity emerges here: "facts" about the world are constructed by living and breathing people; they are not just "out there" waiting to be discovered (Aronowitz, 1983, 1996; Elliott, 1989). The disclosure of this constructed nature of knowledge and curricula marks the end of the teacher's, the learner's, or the standards developer's innocence. With this realization we enter a new passageway in the maze of reality.

The Ideological Curriculum: Unpacking Political Baggage

Thus, a positivistic curriculum that operates in the name of rigor and a hard-boiled realism insults the very concept of rigor, as it fails to account for the forces that construct self, research, knowledge, and the definition of curriculum itself. Not only is the technicist, positivistic standards-bearer isolated from the forces that shape him or her, but the curriculum produced is also isolated from the conditions that give it meaning to students and teachers. The concept of photosynthesis, for example, in the technical standards–driven curriculum becomes simply a disembodied word to be defined in a dictionary-type manner. The miraculous process as it plays itself out in the lived world of the forest, for instance, or in the everyday life of the community is lost in the disembodiment process commonly observed in the technical standards–driven curriculum.

The very features of photosynthesis that grant it importance are filtered away in the reductionist curriculum. I'm reminded of a class I was excited to take in my freshman year at a small college in the mountains of Virginia. The trees that surrounded the science building were some of the most beautiful I had ever seen. I hoped that the botany class would teach me more about them. By the end of the first month of the term, I could hardly make myself attend the class. We memorized endless botanical categories and taxonomies. Not once did we ever look out the window as part of the classroom pedagogy. The life force of botany had been killed in that "rigorous" classroom. I made a D. The curriculum existed apart from my lived experience. The knowledge that was delivered in the classroom had decayed in its isolation from the world. It smelled like rotten meat.

The positivistic curriculum of technical standards provides predigested, secondhand, ready-made knowledge. The ideological nature of such a curriculum helps us understand not only how curriculum development takes place but also how power works to

shape society. Ideology as a social dynamic that shapes the world by making unequal relations appear natural constructs the technical curriculum as if it could be no other way. It is, after all, a presentation of the truth about the world, simply the facts, a reflection of the cosmos. Understanding the complexity of knowledge production, we appreciate the naïveté of such representations of neutrality. Thus, standards of complexity in the name of rigor and consciousness of how power shapes knowledge insist that educators subject any curriculum—a curriculum produced by advocates of standards of complexity included—to ideological analysis. What are the political interests behind the concept of the curriculum proposed? If the curriculum is offered simply as a course of study, what political assumptions undergird the subject matter included and excluded?

This complex ideological criticism of curriculum and education in general is more important than we might initially think. Such critique not only is about power and its distribution in an educational context but involves our cognitive abilities as well. For example, scientific innovation emerges not from a linear accumulation of objective curricular data gleaned from a knowledge of previous "discoveries." Major reconceptualization comes out of a metanalysis of the ideological and epistemological assumptions on which the *framework* supporting knowledge production and the academic curriculum is grounded. Complex insights and discipline-changing analyses are produced not as much by asking questions *within* the framework as they are by asking questions *about* the framework (Reinharz, 1979; Gadamer, 1975; Carspecken, 1999). Our very notion of complexity helps us understand how fields advance and curriculum is reformed. The complexity principle demands a set of inquiries about the framework of disciplines, about the cultural, epistemological, and ideological assumptions on which they rest.

As scholars operating in the zone of complexity ask questions about the empirical generalizations of a discipline, the trustworthiness of linear cause-effect research designs, the use of knowledge produced to control the lives of individuals living in the domain being researched, or the effects of knowledge produced by methods that isolated social, educational, psychological, or physical phenomena from the larger contexts that gave them meaning, they begin to knock down disciplinary houses of cards. Thus, the limitations of the old discipline are exposed, and the possibility for revolutionary insight is unleashed. The types of questions delineated here can be described as tools to help scholars reflect ethically on domains of practice that emerge from knowledge production and curriculum development. The epistemological, ethical, and educational malformations that come out of these dynamics produce the need for action. But first we must recognize that the malformations exist. Students who have been subjected to the curriculum of technical standards with its eclipse of frame-

work-related forms of metanalysis are less likely to discern such malformations—often they see them as "just the way things are."

In the reductionistic curriculum of technical standards operating under the mantle of objectivity, particular antidemocratic and inegalitarian forms of social organization are promoted and justified. A quick journalistic example may help us understand this dynamic on a concrete level. Until the Vietnam War, journalists were often taught a reductionistic notion of objectivity, often referred to as "official-source journalism." Tom Wicker writes that journalists who did not rely on governmental and corporate official sources were considered subjective, if not subversive. But their frontline experience in the Southeast Asian jungles changed the minds of many in the profession as they began to uncover the lack of truth in the information provided by official governmental sources. As reporters spent time with Vietnamese people, low-ranking U.S. officials in the hinterland, and soldiers and nurses, they began to uncover a very different picture of how the war was going.

These reporters surrendered their official-source "objectivity," and in the manner of complex researchers began seeing for themselves and analyzing for themselves, often at the risk of physical harm and governmental wrath. From the perspective of those who fought the war and cared for its victims, the claims of the Pentagon spokespeople, the generals, and the ambassadors began to appear fatuous and hollow. The reporters had taken a dangerous and subversive step: they had abandoned their official-source objectivity for a phenomenological firsthand engagement with the lived world of the war. It was at this very point that they were accused of bias; the dominant view of proper reporter behavior was able to persuade a large portion of the U.S. public of their "misguided, pro-Communist" motives (Bogdan and Biklen, 1982). This is a wonderful example of how ideology works—objectivity is that knowledge, research methodology, pedagogy, and curriculum that maintain the status quo of existing power relations. Subjective and biased political knowledge, research methodology, pedagogy, and curriculum challenge the status quo.

The Scourge of Stupidification: The Reductionistic Curriculum of Technical Standards

Modernist reductionistic views of the world have been trapped by the mindset that locates truth in external reality. Curriculum in the educational standards that emerge from this mindset becomes little more than an effort to accurately reflect this reality in a way that avoids challenging the status quo. Indeed, Cartesian reductionism represents thought as simply an inner process conducted in the minds of autonomous individuals. The thoughts, moods, and sensations of these individuals are separate from their histories and social contexts. If thinking and curriculum development are to be seen as simply mirroring external

events, the need for a theory of complexity or an understanding of consciousness construction is irrelevant.

From this perspective, the ability to conceptualize or to engage students with the complexity of knowledge work has little to do with culture, power, or discourse or the tacit understandings unconsciously shaped by them. From the Cartesian perspective, the curriculum becomes merely a body of knowledge to be transferred to the minds of students. More complex observers may contend that this is a naïve view, but the naïveté is recognizable only if knowledge formation is understood as a multidimensional and ambiguous social activity. Mind is more than a repository of signifieds, a mirror of nature. An epistemology of complexity assumes that the mind creates rather than reflects, and the nature of this creation cannot be separated from the surrounding social world (Benson, 1989; Bowers and Flinders, 1990; Harned, 1987; Denzin and Lincoln, 2000; Knobel, 1999).

As advocates of standards of complexity build a curriculum, they are acutely aware that knowledge emerges neither from subjects nor from objects but from an interactive relationship between the knower (subject) and the known (object). Drawing from Jean Piaget, this relationship is represented by the assimilation-accommodation dyad. Employing these conceptualizations, teachers operating in the zone of complexity conceive knowledge as culturally produced and recognize the need to construct their own criteria for evaluating its quality. This constructivist sense-making process is a means by which teachers can explain and introduce students to the social and physical world and help them build for themselves an epistemological and ideological infrastructure for interpreting the phenomena they confront. Such teachers realize that because of the social construction of knowledge, their interpretations and infrastructures are a part of the cosmos but are not simply a reflection of the cosmos. As a result, the curriculum they develop is self-consciously fallible and unafraid to highlight the mistakes made by curriculum developers working in its name. This process of understanding the nature of curriculum, its all-important relationship to the individual's act of learning, and its metaperspective on its relation to the world is the key feature of a curriculum of complexity. It is by gaining these insights that we begin to escape the stupidification of the reductionist view of knowledge and the rote learning of information fragments of the technical-standards curriculum.

If we pause to think, we all know the reductionistic curricular story: in the name of efficiency, we identify the specific body of information to be learned and the "proven" methods of teaching and learning it. Such a positivistic bedtime story forces us to accept without question that the specific body of knowledge to be learned is valid, that it belongs in our classrooms. Teachers and educational researchers need not trouble themselves with inquiry about the ideological interests of this knowledge. Educational

researchers need concern themselves only with empirical investigations of how best to teach this information—how to insert it into the minds of students so it can raise the test scores. If we manipulate this variable in this specific way, do students acquire more or less of the knowledge? Thus, many would argue, educational issues in this positivistic framework are reduced to technical issues. Questions of ends or purposes are subservient to questions of means or techniques. Social scholars have labeled this tendency "instrumental rationality." Advocates of complex approaches to educational research argue that the purpose of educational activity must always be an integral aspect of the research process.

When teacher researchers separate purpose from educational research, the tendency to break learning into discrete pieces considered in isolation is perpetuated. In the instrumental rationality of James Mill's "mental mechanics," through Edward Tichener's structuralism, to behavioral objectives and componential objectives, and now to technical standards, educators have assumed that the whole was never more than merely the sum of the parts. Houses from this perspective are no more than the nails and lumber that go into them, and education is no more than the average number of objectives mastered. Many educators have referred to this fragmentation process as "bitting." It is not hard to imagine a curriculum caught in the bitting process. Students copy information from chalkboards and overhead projectors and skim textbooks to find information fragments that would answer the questions both in the standards study guides and on the multiple-choice tests.

Children listen (when they're not talking), they respond when called upon, they read fragments of the textbook, and they write short responses to questions provided on worksheets. They rarely plan or initiate anything of length or conceptualize their own projects. They rarely even write essays. They are learning to be deskilled, to be passive, to be citizens who are governed, not citizens who govern. They are being taught not to seek deep structures that move events, but to examine only the surface level of appearance. They will not understand the concept of consciousness construction or the subtlety of the process of hegemony. Ideology will remain a foreign abstraction in their eyes—they will be stupidified, as Donaldo Macedo (1994) puts it. Those students who will transcend such blindnesses will make their emancipatory journey in spite of their classroom experiences, finding analytical inspiration oftentimes outside the school context. The technical standards–driven curriculum serves to perpetuate the most pernicious effects of bureaucratized school practices (Bracy, 1987; Ohanian, 1999).

Just as positivistic standards present an authoritarian view of how curriculum development should take place, they also shape how teachers relate to expert-produced knowledge about education. In the context created by reductionistic technical standards, we

know that experts produce pedagogies that are applied to achieve the goal of higher standardized-test scores. Such reductionistic "expertise" sets up a context where the factory-model division of labor is reproduced: the expert conceptualizes the teaching act and produces theory; the practitioner executes the directives of the official data. The teacher is alerted to some weak component of his or her pedagogy by the expert's comparison of it to a research-grounded scientific theory. The expert then provides the teacher with a choice of scientifically validated teaching strategies. The teacher exercises his or her professional autonomy, selecting, applying, and then practicing a strategy in a supervised training session where contextual variables have been controlled. The result is a scientific curriculum that efficiently teaches the official factoids.

All phases of such a process depend on an instrumentally rational concern with the measurable results of particular strategies. Does the strategy serve to raise standards-driven test scores? No questions are asked of issues such as: the worth of raising the scores, the tacit view of intelligence embedded in them, or the educational and political side effects of viewing their improvement as the primary goal of teaching. Value dimensions, ideological dimensions of human practice escape the vision of this authoritarian reductionism. No room for uncertainty or spontaneous innovation exists; teachers and students lose their ability to shape the curriculum in light of their needs and local conditions. Educational research on the part of the experts is reduced to the attempt to find relationships between specific teaching skills and test-score improvement. We make "remarkable" findings that are passed along to teachers and teacher-education students—for example, the more time students study a particular subject, the greater the possibility that they will raise their test scores in that subject. Such a reductionistic logocentrism—an embrace of reason accompanied by the exclusion of the affective, the emotional aspects of learning and knowing, and the cultural context in which it takes place—forces us to focus on the least-important aspects of curriculum development, aspects that are inevitably the most measurable (Kroath, 1989; Eisner, 1984; Schön, 1987; Pinar, 1994).

The reductionistic logic of the stupidified curriculum attempts to train teachers to place their faith in a rationalized curriculum of pretests, drill work, and posttests. Such an orientation tames the pedagogical imagination, as creative teachers find that they are increasingly viewed as troublemakers and malcontents. In the reductionistic logic of top-down technical standards, teachers are *conditioned* to internalize as common sense a professional approach that breaks the complex task of teaching into a series of simple steps that even unskilled laborers can perform—that is, they have been *deskilled.* As efficiency expert Frederick Taylor put it to one of his workers: "[You're] not supposed to

think; there are other people paid for thinking around here" (quoted in Wirth, 1983, 12). The need for the judgment of the worker would be eliminated in Taylor's efficient system. The devisers of technical standards learned well Taylor's scientific management lessons. Using the technical controls of technical standards, teaching and curriculum development are rationalized; the conception of the pedagogical act is separated from its execution.

In a technical standards–driven curriculum, teachers do not need to learn the intricacies of subject matter, nor do they need to understand the sociohistorical context in which the knowledge to be taught was produced. All they need to do is take the content of the standards, break it into components, present it to the student, and test him or her on it. How can the malcontents argue with this process? It is a pedagogy as right as rain, so commonsensical it defies the need for justification. Why would we need teachers to be scholars, curriculum developers, or knowledge workers in this technical standards–driven context? Obviously, we don't—well-educated teachers, a rigorous teacher education, and practitioners capable of producing research about their communities, schools, and students are all irrelevant in the deskilled content of top-down technical standards. Standards of complexity envision a different world, a different curriculum, a different purpose for education than do technical standards.

Outcome-Based Evaluations and Curriculum Development: The Tail Wags the Dog

The danger of the positivistic, reductionistic quest for certainty again reveals itself. The teacher evaluations, the curricula developed, and the ability grouping that come out of this sacred educational science are clothed in the garb of technical expertise (Cherryholmes, 1988). The force field of reductionistic certainty surrounds them, rendering them impenetrable to the misgivings of those directly affected: creative teachers with negative evaluations; individuals from low-status cultures whose experiences, whose subjugated knowledge are absent from school curricula; and brilliant students with unique learning styles whose talents are not appreciated by the culture of the schools nor measured by standardized tests. Contrary to the assumptions of the positivistic cult of certainty that too often shapes school practice, meanings are never closed but remain forever open—open to negotiation.

Interpretations are never final because humans are incapable, thank God, of a final perception. A student may be taught and evaluated by a gaggle of teachers, but only one may recognize the genius previously overlooked. Knowledge doesn't age well; it often turns to vinegar. New facts come to light, and fresh interpretations uncover new relationships that render traditional accounts passé. Albert Einstein the student is viewed as a

failure, the scientist as a genius. Yesterday's certainties are tomorrow's superstitions. Deliver me from the dreary universe where everything can be known (Slaughter, 1989; Reinharz, 1979; Lincoln and Guba, 1985). Such is the world of the camp science-fiction movie where a time traveler changes one event, and scientists in charge of the time-travel project "know" that if this particular event is changed then a particular set of consequences will result. Such cinematic depictions illustrate the simplicity and determinism of positivistic science's quest for certainty. This same quest for simplicity and certainty shapes the logic of technical standards and the curriculum it demands.

In the name of reason, the curriculum is stupidified, and many come to believe that teaching and knowledge production could take place in no other way. Like work in bureaucratized old factories, standards devisers and school-district office staffs take apart the curriculum, sequencing knowledge, numbering it, and subnumbering it—for example, performance objective 1, activity 7. Teacher lesson plans are required to match an official format and to fit particular standards-driven objectives and proficiencies. Subjects such as English with a diverse range of content are reduced to measurable proficiencies involving reading comprehension and grammar. Social studies and science are reconstructed into fragments of facts (factoids) and arbitrary pieces of jargon. Measurability thus takes precedence over substance and significance.

Deeper, more complex, more existentially significant questions are set aside because we cannot control contextual variables. If the goal of education is to produce a kind of thinking that sees beyond surface appearances and focuses on both solving problems and imagining unthought-of problems to solve, then evaluations centered around outcome measures do not tell us much about our successes and failures. Such a standards orientation tends to force teachers to direct their attention to isolated skills and quantifiable entities that render the entire process inauthentic and inert. If teachers, students, and schools, for example, are assessed on the basis of how much homework is assigned, then teachers will be leaned upon to increase homework assignments. It doesn't take an astute observer to figure out that if the homework is repetitive memory work, then students will learn little and feel more alienated, more uninterested in school. They will be stupidified.

The standardized test–driven evaluation of technical standards and outcome-directed research in general often convey an inappropriate message to teachers, administrators, and the public, sometimes with dangerous consequences. When researchers, for example, studied airline performance, they asked which airline had the best record for being on time. When such a factor is analyzed outside a variety of contextual factors, such as safety, serious consequences may result from airlines scrambling to achieve a better on-time record. Along the same line, researchers who evaluate teachers on

the basis of particular outcomes may miss the brilliance of their lessons if they do not take into account particular contextual factors. Knowing a student's special needs may move a teacher to abandon a particular content objective in order to provide a pupil with a much-needed success experience. The validation of the student's ability may mean far more to both the long-term emotional and the learning needs of the child than would a short-term factual understanding (McNeil, 1988; McNay, 1988; David, 1988).

Good teachers frequently understand the irrational and hurtful effects of the types of educational evaluation that emerge from an instrumentally rational concept of knowledge production. I have often watched teachers pressured by top-down technical standards divide their classes into two segments: one that is challenging and thought provoking and another that teaches simplified, context-stripped information for student use on standards tests. High school biology teachers have reported that they teach a textbookish, misleadingly simplified version of photosynthesis for proficiency tests and then a real lesson that explains why their test-based description doesn't explain the actual complexity of the process. This form of teacher resistance to the malformations of instrumental rationality taught students a valuable lesson—the official content of the proficiency test–guided curriculum negated the ambiguity of physical reality and provided only partial and misleading information about the world. In the name of "tough standards," state educational agencies unable to see beyond the instrumental rationality of positivism establish policies that require teachers to focus on simple skills that are easily tested—not on sophisticated thinking styles, creative activity, or rigorous scholarly activity.

Thus, outcome-directed pedagogies based unwittingly on Taylor's efficiency procedures for pacing assembly lines remake teaching into a set of generic behaviors. Drawing upon scientific management and a simplification of cognitive psychology, teacher evaluation based on such a model devises lists of behaviors that teachers must exhibit. When I was teaching teachers at Clemson University, I was legally required as a student-teacher supervisor to use South Carolina's mandated teacher-assessment instrument (the Assessment of Performance in Teaching [APT]) to evaluate my practice teachers. The instrument reduces teaching to fifty-one performances that must be passed by the state's teachers and student teachers. Word always circulates among the student teachers that for the APT observation a certain type of lesson is required—a lesson unlike the student teacher's natural teaching style. Thus, on APT evaluation day, the lesson an observer sees is quite different (and usually less challenging) than the norm.

The APT assessors and evaluators in similar evaluation models do not need to possess subject-matter expertise in the classes they observe. Such knowledge would be irrelevant be-

cause the teaching skills are generic—verified technical acts that emanate from the empirical research base. Thus, teachers can achieve perfect scores on the assessment instrument even though their understanding of the subject is weak and their lesson is boring and trivial. Teaching may be judged on the basis of whether simple-minded activities are consistent with ill-conceived goals, whether all the materials that are to be used in the lesson (for example, chalk, chalkboard, overhead projector, and the like) are listed in the lesson plan, or whether a teacher uses a student's name to illustrate a point in the lesson. These are actually three of the fifty-one performances mandated by the South Carolina State Department of Education's APT. Thus, teachers and evaluators are reduced to puppets of the APT's tyrannical instrument, as are curriculum developers, teachers, and students in relation to the top-down content standards and their evaluation instrument—the standardized standards test (Haney and Madaus, 1989; McNeil, 1988). Obviously, technical standards and other reductionistic mandates dramatically shape how teachers teach, what they teach, and other curricular dynamics.

Linda McNeil (1988) writes of the effects of this rationalized way of seeing and the outcome-driven evaluations in the domain of teacher evaluation. On days when they are evaluated, creative teachers often revert to a very traditional curriculum because evaluators would not understand an analytical and creative lesson. Because of such demeaning requirements, many teachers have for the first time felt the need to engage in political action. They are ready to organize to try to reclaim control of teaching from the technocrats who in the name of scientific research take away teachers' prerogatives to do what they know their students need—to be free from the oversimplified rote learning required by the standards tests. In this positivistic context, the best practices of teachers are rarely linked with assessment procedures.

McNeil provides an excellent example of teacher frustration and administrative blindness. In a workshop designed to engage students in the role of active, creative workers in the classroom, one teacher questioned how such an effort could be accomplished in light of the instrumentally rational system of assessment used by the school. A principal responded that it would be easy. If students were engaged in a project, the principal assured her, an evaluator would just come back at a more appropriate time. The designers of technical standards–driven teacher-evaluation strategies confuse technique for teaching, management for pedagogy, and test-score improvement for successful learning. In this reductionistic context, it is the best teachers who are frustrated by this situation, the best teachers who begin to think about leaving. When student test scores are tied to teacher career advancement and merit pay, creative teachers make up their minds—they have to leave teaching or at least the school district.

Top-down technical standards reflecting reductionism and technical rationality have weakened the voice of teachers, while centralizing the governance of schools and the construction of curricula. Because it has the blessing of objective science, many teachers, administrators, and community members cannot see the positivistic dimension of educational policy and teaching emanating from such a perspective. They cannot see that there are particular values, political perspectives, and power dynamics inscribed on the standards-driven curriculum. Any curriculum, of course, bears the fingerprints of particular values, political perspectives, and power dynamics—the important point is to understand which ones and how they affect the educational process in particular and the community and society in general. Those who define what constitutes validated, objective knowledge about education will control schooling in the United States.

Indeed, one of the greatest dangers of technocratically reformed, standards-driven schools of the twenty-first century is that by supporting merely one view of educational excellence the very assumptions on which a pluralistic, egalitarian, democratic society is based are undetermined. Questions of ethics and justice are neglected by policies emanating from a research tradition that by nature cannot address them. Such questions are relegated to the fuzzy realm of personal judgment—a realm that must always be subservient to the authority of impartial scientific analysis (Salganik, 1985; Porter, 1988; Hinchey, 1998). Here rests a central danger of positivistic reductionism and the view toward standards and curriculum that it promotes: proponents of such a curriculum can travel the high road of objectivity, whereas its detractors are represented as subjective and unscientific, of offering curricular policies based on mere opinions. The construction of a curriculum of monocultural data illustrating the greatness of the United States to be memorized by students is presented as an objective rendering of the most important knowledge that can be known. The teaching of the great productions of numerous world cultures and the effort to encourage questions about democratic practice are viewed as subjective politicizations of the curriculum.

In this political game, he or she who can claim curriculum objectivity wins. The point that a curriculum of complexity makes again and again is that no curriculum is objective; it always represents a point of view—it comes with baggage. In my research on schools, I hear educational and political leaders again and again maintain that curriculum development is easy: just teach the most important knowledge about our civilization. If this encyclopedia is successful, the public and political and educational leaders will begin to realize that this is not simple—it is, to use a phrase important to this work, *complex*. And the more we learn about the study of curriculum, the more complex we understand the process to be. Whose knowledge? What criteria do we use

to make such a decision? Whose civilization? Only European civilization? Do we include African, Asian, and indigenous civilizations? There is tremendous disagreement among Americans on the answers to these questions in the first decade of the twenty-first century.

In the industrialized workplace of the past 125 years, analysts have often found that the way in which work has been evaluated has constituted the primary mechanism through which employers have controlled employees. Thus, the assumptions that guide experts in their construction of evaluation instruments take on greater importance than they themselves may realize. Teachers do not use objective test results or highly technical evaluation instruments to judge their own teaching. Since the advent of technocratic reforms, teachers and their workplace supervisors have more and more come to hold different conceptions of the way teaching should be carried out—a situation that opens the door to a range of potential conflicts. Educational leaders tend to emphasize task uniformity, whereas teachers tend to value task diversity. After the implementation, for example, of Tennessee's Master Teacher Plan in the 1980s, which was constructed on an outcome-based model of research, teachers voiced strong displeasure because of the conflicting visions of the teaching task.

Tennessee teachers were troubled by a loss of professional autonomy that impeded their ability to provide appropriate instruction. The standardized procedures and curriculum that were justified by the knowledge base of empirical research moved teacher concerns away from the needs of individual students (Rosenholtz, 1987). The Tennessee master-teacher experience illustrates one of the central concerns of standards of complexity: policy makers in education too often lack an understanding of the assumptions that underlie an evaluative act and the pedagogical and political consequences of particular views of what constitutes educational expertise and school policy. If political and educational leaders do not understand these dynamics, then scholar-teachers must teach them. Standards of complexity may reverse the typical flow of communications in the educational hierarchy—teachers may speak with an authoritative voice to their managers. Teachers with the input of the community in which they teach, educational analysts, scholars in the various disciplines, and their students can develop a curriculum, while their administrators and supervisors help create conditions under which it can be successfully implemented. Power is redistributed—the worm turns.

The Cognitive Reductionism of Technical Standards: Moving to a New Curriculum Landscape

A central feature of standards of complexity involves the recognition of the dumbing-down aspect of the positivism and reductionism that support technical standards. This dumbing-down process is not random but seems

to possess particular features that appear whenever positivistic and reductionistic ways of seeing are applied to institutions. Thus, as argued previously, in the name of rationality these modernist dynamics produce irrationality, or a cognitive reductionism. Such pathology seems to result from Cartesian science's tendency to focus on "the world out there" rather than the "me in here." We have focused on "the things of the world" without studying the act of perception, without an understanding of how our individual location in the world shapes what we see and how we see it. Thus, we end up with a naïve notion of how we see differently from one another. Without insight into the complexity of perception, we are often ready to fight and even die over the "truth" of our particular mode of perceiving.

Caught in this cognitive reductionism, this Cartesian dualism, we find ourselves able to gather copious data about matter and energy but unable to increase our insight into the minds that put such information to use. For example, over the past 2,000 years we have increased our capacity to wage war, while at the same time learning little about the causes of war (Leshan and Margeneu, 1982; O'Sullivan, 1999). Operating in this context, we simply do not understand that the way we see the world and ourselves is not random: it is socially constructed. Our consciousness is socially constructed and our identity is socially produced. With this insight, a key aspect of curriculum development becomes identifying the forces that shape who we are, the process by which this takes place, and what we can and should do about it. Without such knowledge, we do not know why we see the world as we do, where our beliefs come from, or the origins of our biases and prejudices. Our ethical sense is undermined, as we simply accept the cultural ways of seeing that surround us without gaining access to the notion that these merely constitute one mode of perception among many.

As a curriculum of complexity works to highlight the construction of our consciousness, we begin to gain a more sophisticated sense not only of who we are but also of the nature of those who are different from us. In such a study, we come to appreciate them and their ways of seeing. In this process, the curriculum of complexity explores what we have to learn from them, how our interaction with them leaves us intellectually and ethically richer than we were before. Engaging in these types of studies, the curriculum of complexity attempts to address the limitations of cognitive reductionism. Bringing hidden social, cultural, and cognitive infrastructures to consciousness, the curriculum of complexity empowers teachers, students, and parents to make conscious, informed choices concerning their lives. In the context of cognitive reductionism and the educational standards it produces, the curriculum often works to hide these ever important concerns from the public conversation about education. Our educational system is much weaker because of it.

Reflecting this cognitive reduction-

ism, students and teachers move through sixteen to twenty years of schooling without ever being induced to think about their own thinking and the infrastructures and discourses that have shaped it (Bohm and Peat, 1987). The discourse of modernist science with its obsession with measurement, for example, has shaped the nature of teacher education and the form that schools have taken. Educational science has devoted much attention to the development of more precise systems of measurement and the application of such measurement to the mind of the learner. As a result, many educators and laypeople cannot think of intelligence in any terms other than quantitative; they cannot think of sophisticated cognition in any other way than standardized-test scores.

Overcoming the Fragmented Curriculum: Standards of Complexity and the Search for Connectedness

This positivistic reductionism and the curriculum it supports have fragmented the world to the point that individuals are blinded to certain forms of human experience. Attempting to study the world in isolation, bit by bit, educational scientists have separated the study of schools from society. For the purpose of simplifying the process of analysis, disciplines of study are divided arbitrarily without regard for larger context. In this mode of thinking, technical standards have been formulated outside of the wider cultural and political concerns for empathy. Without these dynamics, difference is often read as deficiency, if not pathology. This holds not only cognitive implications but social, cultural, and political ones as well. As politicians mandate technical standards and test-driven curricula, they extend these problems and create an exaggerated form of cognitive reductionism. Finding its roots in this modernist fragmentation, the curriculum of technical standards exacerbates a "factoid syndrome" where students learn isolated bits and pieces of information for multiple-choice tests.

Here rests a central concept of this essay and of the encyclopedia in general: the cognitive reductionism of the technical standards–generated curriculum fragments meaning as it fragments information. In this curricular context, the relationships that connect information about the world and provide meaning to human observers are dismissed from consideration. Think about it: the very features of the world that help us make sense of it are undermined by the rationalized and fragmented curriculum of technical standards. Understanding these relationships and applying such insights to the effort to make the world a better place should construct the foundation of the curriculum. At the very least, it should not be ignored. To dismiss such dynamics in the shaping of the curriculum is a form of irrationality that we hope will be viewed as primitive in a few years. This concept is not difficult to understand, and once the

public appreciates it, educational reform will never take place in the same way again.

This modernist fragmentation and the cognitive reductionism it produces have weakened our ability to see the relationships between our personal actions and the cosmos. As we come to value autonomy over participation, isolation over communion, we begin to view natural phenomena as objects for exploitation and manipulation. Science thus mutates into a device for prediction and control that is comfortable when, in the name of progress and short-term profits, it leads to a rape of the natural world (Rifkin, 1989). Thus, the fragmentation of information and meaning and the cognitive reductionism of technical standards produce reverberating consequences throughout the social world. What we are analyzing here involves the often hidden organizing principles upon which a society constructs itself and its future. Thus, these ideas are central not only to education but also to who we are as inhabitants of the planet.

Our unquestioned educational trek for absolutism and certainty results in a twelve- to sixteen-year training program for Cartesian-Newtonian modernity. Modernist technicist curricula emphasize quantities, distance, and location, not qualities, relationships, or context. Modernist reductionistic assumptions are deeply embedded in various aspects of school life. The tests typically given in technical standards–driven schools, for example, prepare students to think in terms of linear causality and quantification—the foundation of modernism. Because we are not taught to think in complex terms, in terms of exposing the tacit assumptions in our conventions and everyday practices, disempowered teachers are oblivious to the fact that they are propagating a specific ideology when they design their curricula and administer the standards-driven "objective" tests.

Modernist education is chained to a bed covered with a crazy quilt of unexamined assumptions. These hidden assumptions dictate the questions asked about schooling in the public conversation and the tenets of the reform proposals offered by politicians. Modernists attempt to piece Humpty-Dumpty back together again by employing more and more of the king's horses and men—they attempt to reform schools with only our existing tools. They think of schools in the context of the old paradigmatic assumptions, refusing to realize that the educational crisis is symptomatic of the larger enigmas of modernist fragmentation (Ferguson, 1980; O'Sullivan, 1999).

Scholar-Teachers as Curriculum Developers

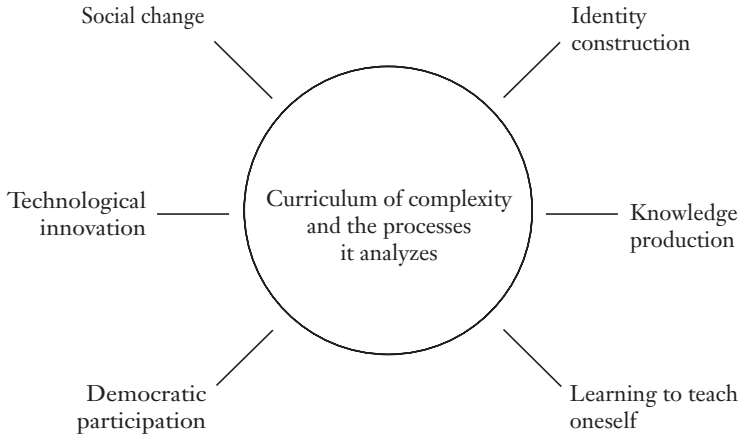
In the beginning years of the twenty-first century, U.S. society does not view elementary, junior high or middle school, and high school teachers as scholars. In the context of modernist reductionism, why should teachers be scholars if all they do is simply pass

along knowledge created by experts and test students on their mastery of such data? Indeed, most Americans do not hold an image of teachers that is characterized by individuals engaged in reflection and research, sharing their work with others, constructing their workplace, producing curriculum materials, and publishing their research for other teachers and community members in general. In a reductionistic worldview, these activities for teachers seem like unnecessary complications of what seems like a simple act of knowledge transfer. Standards of complexity must reeducate the public about the role of teachers if we are ever to produce an educational system that moves us to new levels of social, scientific, democratic, and ethical accomplishment.

Thus, standards of complexity are dedicated to the production of scholar-teachers who can recognize and remedy the fragmented irrationality of the technical standards–driven curriculum. These scholar-teachers treat students as active agents, render knowledge problematic, utilize dialogical methods of teaching, and seek to make learning a process where self-understanding, self-direction, and learning to teach oneself are possible. Scholar-teachers help students become good citizens with the insight to identify social conditions that harm people and the civic ability to envision and implement alternative forms of social and political organization (Aronowitz and Giroux, 1985; McLaren, 2000; Kincheloe and Steinberg, 1997). Thus, the scholar-teachers operating in schools shaped by standards of complexity are agents of democracy who understand the relationship between learning and the future existence of a democratic state. There is nothing simple about democratic living; students must understand complex social relationships if they are to comprehend the way power operates to smash the fragile concept of democracy.

Scholar-teachers in standards of complexity understand the technicalization, rationalization, and bureaucratization of technical standards that erase the democratic vision of what schools can become. Operating with a vision of this possibility, scholar-teachers in standards of complexity work to integrate the knowledge of the academic disciplines, student experience, popular culture, and the effects of dominant modes of thinking in the larger effort to help students and community members make sense of their relationship to the world. Using knowledge from history, literature, math, physics, biology, chemistry, environmental studies, anthropology, political science, philosophy, and a critique of disciplinarity, scholar-teachers examine the processes of identity construction, knowledge production, learning to teach oneself, democratic participation, technological innovation, and social change. An amazing curriculum can be developed with these concepts in mind—a curriculum that changes lives and the world for the better.

As scholar-teachers examine these complex processes, they turn the lenses of analysis upon themselves and



Processes Analyzed in a Curriculum of Complexity

their own professional education. As researchers and knowledge workers in the curriculum of complexity, they are empowered to reveal deep structures that shape the professional activities of teachers. In the process, they develop a reflective awareness that allows them to discern the ways that teacher perception is shaped by the socioeducational context with its accompanying linguistic codes, cultural signs, and tacit views of the world. This reflective awareness, this stepping back from the world as we are accustomed to seeing it, requires that the prospective teachers construct their perceptions of the world anew.

This reconstruction of their perceptions is conducted not in a random way but in a manner that undermines the forms of teacher thinking that appear natural, that opens to question expert knowledge that has been officially verified. Reflectively aware teacher-researchers ask where their own cognitive forms come from, in the process clarifying their own system of meaning as they reconstruct the role of practitioner. The ultimate justification for such scholarly activity is practitioner empowerment—an empowerment that provides teachers the skills to overcome the modernist tendency to discredit their integrity as capable, self-directed professionals (Slaughter, 1989; Carr and Kemmis, 1986; Carson and Sumara, 1997). In this new context, scholar-teachers can get on with the process of developing the curriculum of complexity.

Indeed, there is much more to teaching and curriculum development than meets the reductionistic eye, more than is included in technicist teacher-education programs. The purpose of a complex teacher education is not to learn the right answers, the hand-me-down knowledge of the research experts; on the contrary, such a rigorous teacher education consists of making the most of the unanticipated complications of the classroom. Technicist methods courses and student teaching do not address the innate un-

certainty of the curriculum—they attempt to deny it. Thus, teacher educators operating in the context of standards of complexity refuse to provide a generic form of teaching and expert-developed curriculum that are applicable to all students in all contexts.

Neither do they attempt to reduce the uncertainty of the profession by the application of quick technical fixes. Complexity implies a humility, an admission that teacher educators also agonize over the confusing uncertainties of everyday practice. To operate otherwise would be to revert to the dishonesty of modernism's veil of certainty (Clark, 1987; Hicks, 1999; Block, 1995; Wertsch, 1991).

A Complex Curriculum of Exploration: Life in Epistemological Hell

Scholar-teachers operating in the curriculum of complexity leave behind the reductionistic quest for certainty and its unthinking, rote memorization–based "curriculum of final truth." Comfort with uncertainty allows scholar-teachers the freedom to experiment and to be transformed by the process. They are free to be fallible and to learn from their fallibility. Marilyn Ferguson writes that "uncertainty is the necessary companion for all explorers" (1980, 107). Thinking of themselves as explorers helps scholar-teachers with their curriculum of complexity come to a key realization: education should be a tremendously exciting process filled with wonder, surprise, and passion. As I watch students operate in schools shaped by technical standards memorize data for their standardized exit test, I understand why they are so bored and alienated. The mere idea of studying an exciting curriculum that is connected to the world and their lives is not even remotely imaginable to them. Given their experiences, I must sound like a creature from another planet when I speak of the passion and excitement of learning.

Scholar-teachers know that the debate over curriculum in the contemporary standards conflict is nothing new. As pointed out numerous times in this encyclopedia, the debate has waxed and waned throughout the history of U.S. education. The only way to escape this time warp, with its periodic replay of the same old arguments and its perpetual spinning of our curricular wheels, involves understanding that it exists. Scholar-teachers must be aware of these historical replays and combine such an awareness with a detailed understanding of how knowledge is produced, verified, and canonized, and how it makes its way into the curriculum. Teachers in standards of complexity are knowledge workers who have the ability to uncover the ideological and cultural interests hidden in the official knowledge of the curriculum and the way curriculum is conceptualized. Such ideological and cultural interests exert a dramatic impact on the social, political, and economic status quo. Thus, the curricular stakes are high.

In the past twenty-five years—not to mention the past two centuries—

this curricular debate has played out again and again. Consider, for example, the pronouncements of leading technical-standards promoter Chester Finn. Since the mid-1970s, Finn has maintained that educators must use standardized testing and test-driven curricula to ensure quality in U.S. schools. As a model of a positivist, Finn promotes a set of absolute content standards that lays the foundation for an objective measurement of progress. Without these absolute content truths, Finn and the advocates of technical standards argue, U.S. society and its schools will fall into an abyss of relativism that will undermine the very foundations of Western civilization. Professional historians, for example, who understand the complexity of producing and validating historical knowledge do not fall into an abyss of relativism because they are operating in a zone of complexity. They make the best judgments they can, given their limited vantage points; understand the values that shape their interpretations; and, knowing that their findings are tentative, stand ready to change their analyses with the addition of new vantage points and information.

Such a complex reality represents the fourth circle of epistemological hell for Finn (1982). In the name of quality, he implores the American people to let the positivistic experts determine the goals of schooling and the composition of the curricular content to be memorized by students. The cult of the expert is alive and well, as teachers are socialized to accept their deskilled role in the educational workplace. In Finn's configuration, there is no reason for rigorous colleges of education with scholarly expectations for teachers. Instead of an academic teacher education, professional education in Finn's context might as well involve a six-week training course in instructional methods—similar to the way trainers are now taught in the military. At the very least, in such a reductionistic mode, knowledge of teaching practice is commodified, packaged, and distributed to teachers. Teachers are expected, in turn, to think of curriculum as a body of prepackaged knowledge of various subjects that is to be "dished out" to passive students.

The curricular consequences for such a reductionistic perspective are unfortunate. Finn and his fellow advocates of technical standards have renounced the "relational" intent of academic knowledge and education in general (Aronowitz and Giroux, 1985; Hinchey, 1998). This relational intent involves an understanding of who we are and the forces that have shaped us. It concerns the ability to connect the knowledge of the disciplines with the ever changing conditions under which everyday life takes place. In this context, the ability to *connect* different forms of knowledge to one another becomes a key ability of teachers and students. The logic of Finn's absolutism and the reductionistic evaluation techniques that accompany it preclude the ability to examine the students' facility with these connections.

Of course, the only knowledge positivistic evaluation procedures are ca-

pable of measuring is the fragments of data that by themselves provide little insight into the nature of reality. In order to objectively evaluate our students and to compare the quality of teaching techniques in Finn's reductionistic cosmos, curricula must be standardized and focused on the measurable. The relational intent of knowledge is irrelevant in this context—it is much too imprecise, too subject to individual variation. So once again in the name of certainty, positivists substitute measurability for significance and meaning. Reflecting this irrationality of rationality, Finn and his fellow technical-standards advocates choose fragmentation over connectedness, low-cognitive-level memorization over high-cognitive-level analysis, political naïveté and passivity over engaged citizenship, teacher deskilling over professional integrity, and curriculum as isolated content over curriculum as a complex living process.

The world is a much better place in what Finn considers epistemological hell with its fascinating uncertainty and complexity. Teachers in standards of complexity learn to live comfortably in conditions where uncertainty is accepted and simplistic reductionistic answers and final truths are always questionable. Of course, one of the most important tools in the effort to deal with the chaos of everyday school life—that is, Finn's hell—is for teachers to become researchers, to build a curriculum grounded in research skills and knowledge work. In the early twentieth century, John Dewey (1916), recognizing these dynamics, proposed a form of teacher research that challenged technicist reductionism. Teacher research as conceptualized in standards of complexity reflects Dewey's notions, as it undercuts dominant culture's comfort with existing definitions, curriculum organization, and sociocultural injustice. In a dominant culture that has not valued self-reflection on the part of its teacher professionals, practitioner research becomes a key pedagogical activity as it pushes professionals in a variety of fields to reconsider their assumptions (Greene, 1988, 1995).

Eluding the Fragmentation Trap: The Connected Curriculum, Its Complex Processes, and Alternative Content

A curriculum of complexity always views human beings, society, the physical world, and the pedagogical process as interconnected features of a broader framework, a deeper order. Each of these features gains its meaning as part of this and many other relationships. As such realms of connection are revealed in relation to humans, new evolutionary possibilities for the species are brought into focus. Positivist educators armed with their top-down technical standards have failed to think in terms of this connectedness and the possibilities it raises for human *becoming*. The notion of new forms of human being and cognition seems never to occur to those involved with technicist educa-

tion. Advocates of technical standards fall into the fragmentation trap, manifesting the scourge of cognitive reductionism as they allow the compartmentalization of knowledge to define its importance. As we compartmentalize the world and knowledge about it, we draw boundaries between what is spoken and what remains unspoken. In this context, students may graduate from high school never having given a thought to what disciplines exclude from analysis. I don't think it is inaccurate to argue that the greatest artists, writers, inventors, doctors, business and labor leaders, teachers, and researchers that emerge from positivistic schooling have to learn how to think at a higher level outside of their formal educational experiences. They acquire their cognitive power in spite of rather than as a result of schooling. The connected curriculum of standards of complexity will fix this fragmented stupidification process.

As educational leaders, politicians, and the U.S. public begin to understand the nature and limitations of reductionistic fragmentation in education, schooling will begin to change. The weight of history is on the side of standards of complexity and the curriculum it supports. To avoid reductionism in curriculum and cognitive development, teachers and students must learn to derive meaning from direct experience. Learning from and *extending* the knowledge derived from direct experience, as in primary research, we move into a realm of connectedness where new awarenesses carry us beyond the boundaries of conventional ways of thinking. As we pursue this connectivity in these relationships among data, context, experience, and the complexity of perception, Western education may overcome its scholarly malaise and move toward higher dimensions of human experience.

Simply put, a curriculum of complexity understands that knowledge does not exist in isolation. Knowledge conceived in the zone of complexity is always in process—it comes from somewhere and is going somewhere. From this perspective, knowledge viewed as an "end product" to be consumed misses the very nature of knowledge. Standards of complexity are grounded in this process-based, interconnected understanding: knowledge can never be viewed outside its genesis, the process of its production; it can never be conceptualized outside of its relationship to other information and other contexts. Whenever we attempt to view knowledge outside of these boundaries, we make a logical mistake that holds serious consequences and produces a chain of reductionistic ramifications. In the most basic curricular sense, the knowledge taught in technical standards is isolated in the preceding ways from the life experiences of students. Such a technicist view of knowledge, of course, sets off a flood of reductionistic ramifications such as teaching to test, loss of meaning, student and teacher boredom, stupidification, educational standardization, diminished creativity, and cognitive reductionism—just to name a few.

Another consequence of the view of knowledge assumed within the reductionistic curriculum involves its presentation as absolute truth. When we know something for certain, little need exists to pursue alternative ways of knowing. Such alternative or, from the perspective of certainty, deviant ways of seeing are dismissed as irrelevant for the reductionistic, fragmented curriculum. Such information is not viewed as an important source of new insight or socioeducational innovation (Romanish, 1986; Schön, 1987; Capra, 1996; O'Sullivan, 1999). As we study these reductionistic ramifications of the fragmented curriculum of technical standards, we understand the fear generated among reductionists by the diverse conceptual frameworks brought to school by philosophical diversity and the analysis of the knowledge-production strategies of diverse cultures. Standards of complexity and the connected curriculum they produce are fascinated with diversified conceptual frameworks and knowledge-production strategies. In this way, we argue, social, political, psychological, scientific, and educational innovations take place.

Positivistic scholars and their educational allies have long maintained that when we give credence to a variety of methods of seeking and validating information, the knowledge we produce becomes muddled and confused. In this context, we come to understand the positivistic, reductionistic use of the term *rigor*. Used in this context, *rigor* has implied a conceptual clarity and consistency and the elimination of bias—meaning the severing of human connection from the knowledge production. In this "objective" context, all connections to the knowledge in question are irrelevant, and different contexts are immaterial. Thus, reductionistic rigor limits the way in which information might be interpreted, *one* way being the ideal. To facilitate such rigorous knowledge production, proponents have called for a universal language of ideas in which all research problems could be formulated. In this manner, debate over the complexities of linguistic meaning would be eliminated and objectivity would be ensured. Thus, knowledge, it is argued, could be produced with great accuracy as the complications of observer bias and language imprecision would be solved (Eisner, 1984). Curricula of truth could then be developed and passed on to students.

The reductionistic, disconnected, positivistic belief in an underlying *natural* order where there is regularity in human action exerts a profound impact on knowledge production and curriculum development. These regularities, or social laws, positivists maintain, are best expressed through quantitative analysis and the language of mathematics. The assumptions of social regularity and certainty behind this disconnected, decontextualized, positivistic tradition dramatically influence social and educational practice and curriculum development. What begins as a research method slowly evolves into a view of the world that

includes descriptions of what humans should know, exactly what such knowledge means, and how they should behave as a result of knowing it. Curriculum that is grounded in positivism assumes that the laws of society and the knowledge of human existence are verified and are ready to be inserted into the minds of children.

Positivistic educational "engineers" devise curricula and organizational strategies for schools as if there were no uncertainties or ambiguities in the social, physical, psychological, and educational worlds. Students in these circumstances, advocates of standards of complexity charge, are controlled and manipulated like animals in a biology laboratory. The sacred and authoritative rituals of positivistic science grant these practices a halo of sanctity and legitimacy. Advocates of technical standards exploit this halo to the utmost (Popkewitz, 1981; Hinchey, 1998). To overcome the power of the reductionist halo, standards of complexity view multiple readings of reality as basic aspects of knowledge production, cognitive development, and the construction of curricula. Analyzing and comparing the processes and results of these multiple readings, advocates of complexity lead the charge into uncharted social, cognitive, and educational waters.

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STANDARDS OF COMPLEXITY IN A POSTMODERN DEMOCRACY

Kathy Berry

Democracy and Standards of Complexity

Working with standards of complexity is the responsibility of all those involved in education for democracy. Involved are parents, teachers, administrators, curriculum planners, researchers, students, teacher educators, politicians, experts in academic disciplines, school boards, and a host of other people interested in maintaining and creating a democratic world. Standards of complexity are systems that contain a great many independent variables combined with all the features and information flow that every citizen has a right to access. These are actually the original foundations of modern democracy: political rights and freedoms for all. For example, variables such as time-space, history, gender, identity, Western privileging, and social contexts act upon the world in a manner that modern education has missed. As the world's variables interact and intersect, standards of complexity support the democratic foundations of justice and equality. Systems of modern democracy and standards of complexity interact to create a postmodern democracy. However, both systems have also been reduced over time for political manipulation and economic privileging of those wishing to accumulate power. We are led to believe the masses need to be brought under the same standards in order to access that power. Each individual and institution concerned about the future of education as a major source of freedom can no longer work only with the theories and practices of traditional standards.

Based on the scientific rationality of Western European logic, the foundations of modern education have reached their limits in setting standards. The exclusiveness of traditional standards are questionable in a postmodern democratic education. Al-

though Western logic is included in standards of complexity because of the knowledge and values it has contributed to modern education, it also is challenged for its dominance and exclusiveness over other systems of knowledge and values.

Meanwhile educational theories and practices are being influenced and challenged by theories of complexity and pedagogically framed by postformal contexts (which do not separate thinking, teaching, and learning into traditional formalist categories such as disciplinary knowledge [see Messer-Davidow, Shumway, & Sylvan, 1993] or educational psychology's clinical empiricism of intellectual, social, cognitive, emotional, and moral development [see Kincheloe, Steinberg, & Hinchey, 1999]). The momentum generated by teaching and learning in the context of complexity includes features of chaos theory (borrowed mainly from the natural, physical, and chemical sciences and literature; see Coveney & Highfield, 1995; Hayles, 1991; Prigogine & Stengers, 1984; Ruelle, 1991; Sarder & Abrams, 1998) and from critical cultural studies (heavily reliant on critical theories such as Marxism, feminism, postmodernism, postcolonialism, poststructuralism, radical hermeneutics, and deconstructionism). Theories in studies, for example, of race, gender, class, and sexuality constantly challenge and change status quo knowledge and essentialized, commonsense practices. Because standards of complexity are inclusive, the historical, social, and political contexts of traditional knowledge, disciplines, and values are considered part of the complexity but challenged as singular, exclusive, and dominant.

Knowledge and values shaped by the student's and teacher's autobiography supply further complexity in addition to the diversity presented by the student's background and interests. After thirty-five years of teaching, I rigorously attempt to apply to my own practices many features of the standards of complexity of which I am aware. However, I frequently recognize moments when I employ traditional, formalist, reductionistic teaching, such as objective methodologies, checklists, and traditional literary and standard textbook resources. The need to be phenomenologically sensitive (to the context-specific lived experiences of body, otherness, space, and time) to every furled forehead, internal experiences, students' personal contact or not with the subject under study, emerging identities, and considerations of cultural diversities between and within such areas as genders, races, classes, religions, sexualities, colonized subjects, identities, and plurality make it impossible to consider anything less for education than standards of complexity. Furthermore, a postmodern democracy demands no less.

Standards of complexity are activated by the force of intersecting relationships between, to name a few, texts, teachers, students, parent expectations, and politicians' agendas. As the momentum, volume, parts, space, and time increase, teaching and learning follow several major features of complexity. Terms that have been used

to describe these features include: nonlinear, unpredictable, novelty, creativity, spontaneity, unstable unperiodic behavior, context sensitive, divergence, diversity, disorder, self-organizing, changes, new modes of thinking and behavior, networks of feedback loops that alter the course of action, few if any limitations, structure in far from equilibrium conditions, unteleological, neither means nor ends. To live in the complexity means on the edge of chaos—dynamic—always in process. Mingle the principles and practices of the old with the contemporary, and standards of complexity push every student into the zone of proximal development, the place where the principles of idealism, hope, possibility, and freedom intersect for a creative and democratic future.

In this chapter, I present some theoretical applications of standards of complexity to actual practices. The discussion includes teaching sessions of a few traditional simple standards as listed explicitly in curriculum documents, starting points for generating standards of complexity. The majority of the examples are drawn from university courses that I teach. In other writings I can produce similar examples from kindergarten to secondary school as a demonstration that standards of complexity are applicable and possible for all ages of students and teachers. In academic writings and educational texts, it seems that complexity is still the enemy of the state, foe to controlling the standards that hold the nation together (see Nash, Crabtree, & Dunn, 2000). The longer that latter argument lasts, the sooner democracy crumbles. But how to capture the complexity in printed text without the technological abilities of hypertext has been the struggle of many postmodern fiction writers (e.g., David Barthelme, Italo Calvino, Angela Carter, Carlos Fuentes, David Lodge, Ishmael Reed, and a host of others who have tampered with the structures of modern texts; see McHale, 1987). It remains my struggle in writing and in pedagogical practice.

The Advent(ure) of Complexity

While young public school students seem to live in a state of negative capabilities (Keats), formal schooling seems to have reduced that state for university students in teacher education. When I begin any course in my areas of cultural studies, literacy, and drama, it seems that I must order the content, readings, assignments, due dates, and evaluations for the students. To reduce and organize their lives through a course outline, I conform to university policy, which is taken for granted as a normal demand from students. So when I started one course in critical/cultural literacy, after handing out the formal outline, the students and I entered the field of complexity. The simple beginnings of the course outline evolved into what at times the students felt was chaos: What do you want us to write? How many words? Is there an exam? To where and why did the freedom, wanderlust, and self-organizing skills of young learners disappear?

To reduce the sense of chaos and free students' imaginations to the ensuing complexity, I guarantee that I will, with their rigorous input, give them the grades (still university and public school criteria) they are comfortable with. If they are not satisfied with the grades on essays and assignments (I don't feel exams are rigorous), they can rewrite from my feedback until they are satisfied they have explored the feedback to saturation. Libraries, newspapers, other courses, media, literature, documents, web sites, interviews, tutorials, face-to-face discussions, peers, phone calls, and now e-mail are only a few of the feedback mechanisms they can use. The strictest expectations on my part are that they attend classes, since I rarely if ever work from textbooks or photocopied handouts; I work mainly from my own notes, not ignoring the feedback (challenging it if need be, even the negative, but not ignoring it), and I use the nonlinear feedback instead of expecting some methodological formulas. To develop rigor, the feedback process from the teacher and others prevents linearity and predictability and loops back to the student as responsibility for self-organization. In addition, I still mix lecture with group discussions. Both are done as feedback to the students' questions and work-to-date more than a transmission of knowledge.

Complexity fuels an energy supplied by self-organization and feedback, which generates new information and questions for the student. At the same time, the feedback also loops through the teacher. Feedback to each student's work should alter or challenge his or her thinking, which requires the teacher to turn back on his or her own thinking. While some consistency and patterns of response emerge, the teacher realizes that feedback to each student's work will only be democratic and continue the standard of complexity if infinite possibilities are circulated. Thus no methodologies or set questions/comments can be used as feedback. They can be used only as acceleration into complexity, not as a world to simplify.

In all this momentum, eventually students and teachers feel they need a point of equilibrium, rest, balance, or simplicity to manage, to prevent stress and disorder, to achieve objectives and external organization. The students' phenomenological frustration and/or stressed voices call for the teacher to address the conditions of what Prigogine and Stengers (1984) call dissipative structures. In these far-from-equilibrium conditions, where "new types of structures may originate spontaneously" (p. 12), students, accustomed to formalist pedagogy and disciplinary knowledge from textbooks and lectures, assume that they are not learning or going to pass the course if there is not a constant and explicit state of equilibrium. When working with standards of complexity, however, no two students or the teacher can be in a state of equilibrium. Just as the student senses equilibrium, the feedback mechanisms, no matter who or what the source, increase the complexity. However, I find

I devote a large part of the course content to changing their experience and discourse of the dissipative structure of complexity from abnormal to normal and mainstream. I assume that this will transfer to their own teaching, although I know this is not likely unless the students enter their professional career with resistance to formalist teaching and traditional transmission of standards. I try to assure them that younger students are not as socialized as they are into the culture of formalism, so that teaching standards of complexity is possible. But getting a job, keeping the job, and getting the permanent position are, as student teacher Anna claims, "the reason we won't try to change things [modern education]."

In fact, student teaching and professor evaluations still emphasize these singular standards for maintaining order and control. These are the traditional discourses of standards of Western logic, where objectivity, facts, checklists, programs, methods, and technology dominate as if natural and neutral. Although a few students, out of the thirty-five to forty in the class living through standards of complexity, never seem to become engaged, I find fewer of them than those who suffer from boredom or teacher/program dependence in the reductionist, methodological pedagogy of simple factual standards. To me, teaching the standards of complexity keeps me as revitalized and as free as the students of any age level.

The discussion in this section is not to suggest that the advent of complexity only happens at the beginning of a course or lesson. Systems of complexity run through every moment of engagement in a democratic, postmodern teaching-learning context. A particular level of constant energy is required even in moments of silence and reflection.

All Things Considered Means Never Being Done

The previous discussion makes it appear that there is no substance or content in standards of complexity, that it is mere process, ideas in far-from-equilibrium conditions, free form—no standards at all. But this is not so. Without question, there is more substance owing to the fact that content and form are not separate entities but work together, a host of variables, diverging and intersecting as the students spontaneously interact with various feedback systems. Democracy (here all logic is included) enters the complexity as dialogue. Negotiation and resistance confront the mainstream and centers, dominant, stable, and normal with facts and values that are usually overlooked, uncertain, disputed, abnormal, and infinite. All elements and features of the context are considered, especially those overlooked as insignificant by long-standing conceptual frameworks, methods, and mainstream knowledge. Students in formalist contexts are taught to look for constants and ignore other information. Teachers work only within boundaries of their expertise, academic discipline, conceptualized

frameworks, and traditional discourse. In standards of complexity, there is no value assignment except for justice and freedom, no dominant and nondominant, no right and wrong, no good and evil as created by Western dualisms/binarisms. All possibilities are considered, and there are fewer missed opportunities. Participation by all and of all—the intent of modern democracy and the hope of postmodern democracy—is the standard that guides us through the hyperreality of complexity.

Opening Standards to Complexity

Previously I mentioned that I would give actual examples of the theories of standards of complexity in practice/action. I began with how a course outline is already packed with a multitude of features that are characteristic of complexity in a postformal pedagogy. To continue from the course outline, I move into the recognizable content of a course. It happened, in large part, spontaneously.

A precedent-setting Supreme Court case based on the Indian Act gave local Aboriginal fishers in Australia the right to fish out of season and without quotas. Unable to do so, nonaboriginal fishers protested by trashing Aboriginal lobster traps and claiming that Aboriginal fishers should have to follow the same rules as they do or lobster will be overfished and the industry will be closed. Newspapers and television become the major public source of information, supposedly reporting without bias—just the facts and events as they happened. These media sources became the passport to enter into standards of complexity. Similar events occurred a year earlier in regard to Aboriginals lumbering freely on crown land (land set aside by nonnative government for their use only). The opposition was mainly from national pulp and paper corporations and local non-native lumberers. Again, the two major sources of information were the newspaper and television. The study of Aboriginal life was pursued because the topic is a highly recommended standard field of study in several curriculum guides and textbooks. North American curriculum frequently requires units of study on Aboriginal culture. I emphasize culture because that appears to be the emphasis, instead of, for example, critical antiracist and postcolonial readings of Aboriginal worlds. Discussion of these two areas, one very spontaneous and one a standard area of disciplinary curriculum study, occurred during a critical/cultural literacy course.

Nothing that followed throughout the course was planned, expected, or predictable. I was to teach student teachers how to teach critical literacy and cultural studies. Their background and mine—Do we still teach like we were taught?—were informed by certain information about Aboriginal life that must be taught and tested. We were taught that students in kindergarten to grade five studied traditional Aboriginal life, all lumped together or compared by traditional

tribal location and dress. Corridors are still filled with photocopied pictures of Inuit hunting seals with harpoons, same picture, same colors (just don't go outside the lines). Middle grades still studied modern Aboriginal life with "they're just like us" antiracist, multicultural humanism-human race slogans. Secondary students, usually only if it's required, engage in some historical, cultural, or political studies of Aboriginal life. The texts, however, are usually written by nonaboriginals or are from noncritical perspectives or reduce knowledge of Aboriginals to generalizability and essentialism. In teacher education, some students study Aboriginal life and history in social studies courses or from a center in the faculty that offers courses in the area. However, I now was informed differently to read and write, to deconstruct and rewrite from systems of feedback. I now was aware that with complexity in the forefront, our past knowledge about Aboriginal life was to be challenged and that new thoughts, new truths would emerge. But there are always misreadings and contradictions as the elements keep rearranging themselves in the context of complexity (Sarder & Abrams, 1998).

The issues and events surrounding the Aboriginal fishing rights opened the door to complexity. I brought in articles about the events from different local, provincial (state), and national newspapers. The students broke into groups, each group with different examples to discuss concerning the knowledge and values being generated about Aboriginal life in general and specific to this event. Usually groups reported back what they found in relation to the task set. But critical studies ask for a different reading than a reading just for information. I collected the students' charts to use at the end of the course. At this point, no discussion was held of their findings.

These are students with a first degree in a variety of disciplines, but few have a critical studies background; those that do, usually have one in feminism. Assuming that the students had limited to nil background in critical literacy, I provided some background and discourse by assigning texts as representations—of Aboriginals, of government, of fishing; of rights, equality, power; of gender, law and order, history, class, race, and so forth. At first, we discussed how they've been taught to read a text or book. They tended to use text to mean book, but I use it in a critical, semiotic manner as anything that generates meanings that combine into larger patterns that have been socially constructed to have certain meanings and to do certain things (Thwaites, Davis, & Mules, 1994). We expanded on the notion of text to include printed and oral text, architecture, space, time, movies, visuals, and ourselves. I also added hypertext at this point to emphasize that reading in a postmodern world (what's that, they query?—later, say I) is like clicking your TV remote and receiving multiple channels as if one program. This makes sources of text as complex as the many possible ways of making sense of them.

I ask the students to list on file cards the kinds of questions they would be asked before or after reading the newspaper articles. My intention is for them to recognize how a reader reads in a particular way depending on the questions they are asked by or asking of the text. The students are to categorize the questions into five general types: (1) traditional text analysis using Bloom's taxonomy (fact, analysis, synthesis, and so on); (2) reader-response (What do you think of —— in the text? What don't you understand/agree with in the text?); (3) personal response: finding something in the text that relates to somebody, someplace, some event, some problem they know of or have experienced; (4) critical cultural (Who is writing this in relation to the subjects/topic? Who is assigned power or not in/by this text? What are the historical, social, and political contexts? How are gender, race, class, subjectivity, and so on, represented in this text? [see Berry, 1995 and 2000, for a plethora of examples]); and (5) other ways of categorizing.

Most of the questions fell into the first category, very few in the second and fourth, and none in the third. Those in the fifth category, after discussion, usually fell into the first category. Many students were confused and skeptical when I said that the kinds of questions they are asked or they ask of the text reveal a lot about what they think/theorize reading is. Is it a matter of applying a hierarchy of question as most of them had on their file cards? Reading, knowledge, and value are more than a simple hierarchy of standard questions that have been filtered out of the complexity of reading the world of the text. They came to realize, although maybe not accept, the rigor demanded as the course proceeded. "But what about the exams?" " How will we know if the students have learned anything?" were some of the persistent questions that I heard from the student teachers. The pedagogical turbulence indicated near-equilibrium was headed for far-from-equilibrium conditions. Ideas were already being reorganized. More energy was required to understand and construct knowledge. Complexity was in practice (Sarder & Abrams, 1998).

As questions from the first four areas were asked of the articles, different readings were already being generated. The students themselves created new questions, which seemed to open up the discussion to multiple readings of text. The text was reread to uncover possible readings that kept folding back on themselves to produce new truths and logic. Once the students seemed comfortable, other dimensions were added to the reading of the articles. We were moving deeper into standards of complexity, both teacher and students. The ontological states of teaching and learning were moving deeper into engagement: from attraction to attention to interest to concern to investment to commitment to passion and maybe a bit of learning (Heathcote, 1983). Each of us working at different levels of engagement with the texts added to the complexity of the pedagogical context. Ontologi-

cal play, not method, is where truths can be found, according to Gadamer (1982).

Any text, both within and between texts, is filled with a complex play of meanings; social codes/representations; and cultural, political, and historical beliefs and attitudes—at times explicitly but most often encoded in a set of relationships between text, readers, and society. From their initial simple reading of the articles, where the students recorded mainly factual information about the issue (the file cards indicated so), further complexity was generated by the different ways of questioning and reading the texts. If equilibrium, predictability, comfort, and security were their goals, mine was to intervene in that simplicity. I introduced two new features and discourse of critical cultural studies taken from Thwaites, Davis, and Mules (1994, pp. 83–86) that seemed compatible with standards of complexity: myth and addressee position. Thwaites and colleagues described four ways that myth works in texts depending on the social group and context of the readers: (1) Myth and values are never fixed in meaning, (2) a myth's structuring function and effect for a text is not always predictable, (3) meanings and values emerge as the text is read by socially positioned readers, and (4) the values and myths represented by a text may be taken up and either agreed to, reinterpreted, or opposed by readers (pp. 83–84). "We know. Back to the drawing board [text]," chorused some students at the back of the room. "And the other feature of texts," I chanted back, "is how the reader accepts or not the addressee position the text offers" (p. 84). "Geeeeeez, Kathy, aren't we overdoing it [rereading]!" Sensitive to every comment and wanting to take the students seriously, I mention that overinterpretation is a concern of some theorists like Umberto Eco (1992). Are there limits to what a text can mean? Are the author's (readers') intentions relevant to establishing these limits? Should some readings be ruled out as overinterpretations? The concerns they have are expressed by other experts. Complexity breeds infinity. Teachers breed enabling conditions to create conditions of complexity.

Texts (note I'm still referring to "any" text, not just printed ones) set up three types of readings depending on how they are used by the reader. Readings may be dominant or preferred, negotiated, or oppositional and resistant. In other words, a text can reproduce the dominant representations of society or conflicting/contradictory ones. Each reader with a certain addressee position has the right and freedom to interpret the text differently. Readers interpret from their positioning and experiences in gender, race, class, sexuality, and occupations, as well as their historical, educational, social, economic, and political backgrounds. The institutional contexts in which readers are socialized also influence their interpretation: family, school, church, and community. I used the example of representations of family to clarify how three different readings could apply. In the 1950s, the

dominant/mainstream reading of family in North America would include features such as married male-female with two children, nuclear, middle-class, white, Christian, suburban, professional, living under one roof. Over the past few decades, however, that dominant representation gradually has been negotiated by family structures represented by terms such as single working female, heterosexual, nondenominational, white, unmarried parent with occasional support from state and extended family. An oppositional reading would include the terms migrant, rural, nonwhite, homosexual, immigrant, nonmarried, no children.

Two hundred years ago, dominant representations of family would have been quite different, as would be any social and historical contextualized production of a text. Power is created and maintained by being or moving into the dominant structures. Politicians constantly use the dominant structures to anchor votes or legitimize policies and action. We looked at how party platforms claim increasing violence is due to declining family values and violence on TV. By this logic, they mean the family values of the dominant. Now we question the logic of the modern world built by and for the dominant (male, white, Christian, and so forth). This is not the logic of a postmodern democracy, we slowly began to realize.

These multiple ways to read and reread text were building the standards of complexity. No longer a reading of the articles for information and maybe bias, multiple readings were initiating other features of complexity. I know each time I teach a course, the elements of complexity are always introduced but never in a predictable, linear fashion. Maybe that's why I usually score low for organization on my evaluations by students. A compliment, perhaps?

The standards of complexity were building not only in and through the rereadings but through the students' writings and rewritings. We employed a version of the writing process developed in education mainly by Atwell (1998), McCormick-Calkins (1991), Graves (1984), and others, in addition to the critical-writing and rewriting-the-world process modeled on writers from the margins, for example, women (Behar & Gordon, 1995; Olson & Hirsh, 1995), non-Western writers (Thiong'o, 1994), homosexual writers (Summers, 1995), and writers on the "politics of the other." Critical feedback from peers and teacher on their thinking and writing placed the students in a constant state of rethinking and rewriting the world through revisions of their words. They freely—individually, in pairs, or in small groups—selected a standard academic discipline, topic, issue, objective, outcome, or goal listed in the guidebooks. Throughout the course, the students wrote and rewrote drafts of essays or reports (another standard to introduce!) based on the principles and practices of complexity. Remember, with constant rigor and feedback, they can write themselves to the desired grade. I find the product of their final writing is superior and more indica-

tive of their learning than are term and final exams. It required them to go beyond memorizing information and forgetting it the next day. They were also required to self-organize, produce new knowledge, contextualize their thinking through the rewritings, and not write to regurgitate.

Back we went to the articles on Aboriginal fishing rights and reread them from our different addressee positions. For example, we noticed that whites called it a fishing dispute, a point of discourse that later became important in discourse analysis and deconstruction. I emphasized binarisms created by Western thought and discourse: rights/disputes, right/wrong, good family/bad family, professional experts/local fishers, government/Aboriginals, me/you, us/them, male/female, white/red, rich/poor, smart/stupid, heterosexual/homosexual, young/old, Western culture/Eastern culture, modern/premodern, city/rural, able/disabled—to name a few. I had the students use traditional Western fairy tales to pick out the binarisms and the discourse that privileged one construct of the binarism over the other. For example we discussed how women, men, race, class, and family are represented in the stories, who is privileged, marginalized, silenced? What discourse creates the binarisms? We used ideas from current children's popular stories: good mother/bad mother, middle class/poverty class. We looked at attitudes and behaviors, relationships, and binarisms generated by good boy actions/good girl actions, good girl actions/bad boy actions. We added our own signifiers to the binarisms and created volumes of examples—it became gamelike—but valuable in learning how binarisms float through our texts, knowledge, and values in a taken-for-granted manner that over time and space we take as natural and normal.

Eventually we leave standard, dominant representations unchallenged, erase the oppositional, consent to status quo, assume rights and privileges are natural and not assigned by position through gender, race, and so on. We read the texts hegemonically. I'm not sure where the term hegemony was introduced to the class. It seems it might have been somewhere between the first readings of the articles and the lesson on binarisms, or was it just after the latter? It became the favorite buzzword for a while, used humorously without understanding, but then becoming important to the rereading of the articles. More important, consent without force or coercion—the process of hegemony—became the feedback initiative to researching how Aboriginal fishing rights were an issue in 1999. From here, and organized in large part by the students, they brought in copies of treaties, sections of the Indian Act, articles and books from other education courses and disciplines (one from a psychology class that was heavily challenged by Aboriginal and non-Aboriginal students in the class), and more clippings from magazines and radio/TV newscasts on the issue. They also brought in an aboriginologist (an elder interpreter of

Indian law, Loomis Sappier), old and current westerns and action films (John Wayne, the standard American hero, was deconstructed), old and current textbooks with past and present representations and facts of Aboriginal life, and personal stories. The sources of texts—printed, visual, media, people, stories—became unlimited and were always taken back through our own constructs and readings from the initial newspaper articles. The additional sources were not used as a standard integrated unit, as is so common in educational studies. They were used as a study in standards of complexity, creating hypertext, where boundaries between content, form, and function were blurred, and disciplinary knowledge disappeared into formations of new knowledge and values, in many cases not yet named. We didn't plan a unit on standards of complexity. We created it spontaneously and lived it spontaneously, overlapped with rereading and rewriting.

Sometimes in a course I move the students' work through more detailed theories and practices of feminism, race theory, postmodernism, radical hermeneutics, or deconstruction, discussing how the readings from these fields are similar and different, how they intersect to reveal privilege and power. We did some work on deconstruction. Karen, at the end of a class, said as a summary and a question: "Okay, deconstruction means to dismantle Western logic? What's that and where do we find it?" The class sessions I've discussed in this chapter were done in the allocated time of a term, thirty-six hours over three months. There remain two areas that the students were introduced to and used that became very important to practicing standards of complexity and working toward a postmodern democracy: critical autobiography and postcolonialism.

Throughout my discussion, it might appear that our work with standards of complexity did not reach a level of chaos. We did, however, work at the edge of chaos. That became apparent halfway into this study, when we embarked on writing critical autobiographies. Most, if not all, of the students in the courses I teach come from Western European ancestry: English Loyalists and French Acadians. There is a predominance of women in primary education and equal representation in secondary education, with English literacy and social studies the two most represented disciplines. Several students come from rural areas, with fishing, farming, and lumbering the major occupations of their parents, friends, and relatives; they are working class and politically conservative, with hints of liberalism and a very, very slight hint of socialism (mostly in regard to medical care, not education!). Some students come from different backgrounds from the majority, but the important point is that *every* student brings differences to the world. I introduced critical autobiography as a way of unpacking our socially and historically constructed knowledge and values: how they came to know, believe, act, read, and value the way they

do; who played a part in that—family, friends, books, community, school, church, film, television, and, currently, the ever-dependable Internet. On the first writing they did what I call the therapeutic psychological analysis, a linear narrative of their lives. I had to intervene in the dominance of psychoanalysis and offer alternative readings of their autobiographies.

I found I had to share an unpublished article I had written called "Locations of Whiteness in Autobiography." I gave a minilecture on critical white studies taken mainly from Daigle (2000), Delgado and Stefancic (1997), Frankenberg (1997), Ho Fatt (1998), and Kincheloe, Steinberg, Rodriguez, and Chennault (1998). I talked from memories of how I was shaped by my female gender, race (white), working-class/middle-class background, Christian upbringing, physical difference (polio), and suburban background. Institutions from family to church to books and community were fairly status quo in my early years. It was not until I went to university in a large city that I was exposed explicitly to differences. Faces, rituals, attitudes, strangeness, and variety challenged my simple life. After reading my thirty pages of theory and locations of autobiography, the students rewrote their autobiographies with a critical edge. They did not have to share publicly if they chose not to, nor present potentially sensitive and controversial parts of their lives. As we shared and related our critical autobiographies to how we read the representations in the newspaper articles about the fishing rights, we were pushed to the edge of chaos. The autobiographies of three white students and one Aboriginal student in the class were directly related to the article: One's boyfriend was a lobster fisher, as was one's father and one's husband. The Aboriginal student remained distant on the matter for a while: "I don't want to be the token Indian in the class," she claimed.

Heated debate, that binary structure of Western culture, began to openly enrage two of the invested white students to the point that one exited the class and the other wanted the discussion halted after the entire class became split for and against Aboriginal fishing rights. In respect for those not present, to restructure the class around critical dialogue and complexity, to include the plurality of legitimate perspectives, to consider contradictory and conflicting statements, and to practice postmodern democracy, I stopped the class at midpoint. Students could talk to me in private if needed, a debriefing, so to speak. I asked for suggestions on what to do next. Dismissal was the suggestion chosen, with my condition we revisit this event in the next class. As a critical theorist, I felt I couldn't dismiss the incident but must use it as a "teachable moment." I was nervous and afraid about what would happen at the next class (if they showed up), creating new energy in my teaching.

The incident fed the notion of a postmodern democracy, not purely but close. It was an opportunity for discussion on what standards of com-

plexity and postmodern democracy meant to me, to the course, and to the students' practices, then and in their future teaching. Conclusions ranged from "poppycock, impossible, futile, too idealistic" to "I think I understand what you mean." "You [this course] changed my life." "I'll try it but what about the tests and exams the students have to take?" Yes complexity sometimes will reduce to simple, manageable practices. Unfortunately.

From the heat and passion of critical autobiographies, maybe a bit of learning. From the autobiographies, it seemed extremely important to add the discourse and principles of postcolonialism to the landscape. This was complex because most of the students and the teacher inherited a colonial consciousness from their ancestral roots and socialization into a colonial culture; because some students were members of the colonized culture and had lost most of their ancestral knowledge and values; because the text was packed with representations of colonialism left unchallenged by non-Aboriginals for five hundred years; because in a postmodern democracy, quality and inclusiveness replace simple standards, methods, and absolute truth as the organizing principle. Rereading and rewriting texts is one of the major ways we create conditions truthful to social justice.

The application of postcolonial theory to the texts we used, including our autobiographies, was another feature that created unstable, unpredictable, multiple, infinite new knowledges and further far-from-equilibrium conditions about the world and about ourselves. "The complexities of colonial and postcolonial subjects and identities" (Loomba, 1998) required another set of questions and rereadings of our original text. New discourse to work with was another contribution of postcolonial theory to our pedagogy of complexity. Several authors played a major role in developing postcolonial theory to dismantle the logic of Western culture and challenge the colonial constructs of dominant texts. The students and I grew up with the disciplinary and literary canons that we never challenged because of the constructed superiority of the colonizers' knowledge, values, language, institutions, and organizing structures. Said (1978) introduced us to how the East has been constructed by the West; Ashcroft, Griffiths, and Tiffin (1995) edited a comprehensive reader on postcolonial studies. I used their glossary of key concepts in postcolonial studies (1998). I used a series of questions generated by Loomba (1998) in her introduction that added to our already exhaustive list of questions mentioned previously, questions such as: How does the colonial encounter restructure ideologies of racial, cultural, class, and sexual difference? The discussion of the relationship between capitalism and colonialism (p. xvii) opened the texts to further rereadings and discourse analysis. At this point, the course was ending and postcolonialism was at least another feature added to the students' standards of complexity.

In some ways, the course sounds directed by me instead of representing

the self-organizing, spontaneous, unpredictable conditions that standards of complexity demand. Each time I teach the course, the elements and principles are there; they just keep rearranging themselves. Over the course there are changes to the organization, the knowledge, the perspectives, the students, and me. What is intended by this discussion is to briefly demonstrate the pedagogy of complexity, where traditional standards are challenged and resisted as contradictory to a democratic education. Other authors in this book and elsewhere argue cogently for standards of complexity in our education for a postmodern democracy.

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STANDARDS, NOT STANDARDIZATION

Student Learning in a Democratic Classroom

David Hursh and Aggie Seneway

One morning, second graders John, Lee, and Marcia burst into my (David's) classroom excited about sharing their shoeboxes filled with rocks and shells. After sharing their treasures with me, they sat on the floor exuberantly displaying them to anyone who showed interest. For me, as their teacher, the immediate question became: Should I incorporate the students' interest in rocks and shells into the life, and therefore the curriculum, of the classroom, and if so, how? The incident also raised less immediate and larger questions: How do we achieve standards without subjecting students to standardized tests and standardization in learning? How should curriculum decisions be made in the classroom? What is the role of the teacher as the more experienced person? How do we ensure that students are learning what they need to know in order to live in and with the world?

In this chapter we use examples from our own elementary teaching to demonstrate our Deweyan approach to teaching as a passionate, moral, and intellectual enterprise. We begin by asserting that even though we do not follow the prevalent approach of using prepackaged curriculums and standardized tests, we hold our students to high standards. We object to linking standards to high-stakes standardized tests that are used, not as they might be, to improve instruction, but instead to rank and hold "accountable" students, teachers, and schools. We then turn to describing the principles that guide us in our teaching practices. Our principles reflect Dewey's ideas that the school should be democratically organized so that students cultivate the ways of being democratic citizens, that teachers should base their authority on their greater experience, and that the curriculum should connect the experience of the student

with the "achievements of the past and the issues of the present" (Dewey, 1963, p. 23).

Our vision contrasts sharply with the current emphasis on linking curriculum standards to high-stakes standardized tests. National curriculum organizations such as the National Council of Teachers of Mathematics and nationally commissioned organizations such as the one that created the National History Standards led initial efforts to create subject area standards. While we find the curriculum standards useful as teaching guides, we object to more recent efforts to connect standards or curriculum frameworks to standardized tests that are used to assess not only students but also individual teachers and schools. Linking standards to standardized tests, tests that are increasingly used to determine whether students should be promoted from one grade to another or from high school, has resulted in mandated state control of what knowledge is of most worth (Kornhaber, Orfield, & Kurlaendar, in press; McNeil, 2000). "Although states . . . deny that these frameworks amount to 'curriculum,' their practical effects are the equivalent, particularly when frameworks, standardized tests, and textbooks are aligned" (Ross, 2000, p. 208). Rather than promoting teachers as thoughtful and knowing practitioners capable of thinking about their teaching, "standards and related efforts [such as standardized tests] undercut teachers' abilities to make professional judgments about what to teach" (Ross, 2000, p. 219).

For both of us, a central educational goal is cultivating in students the "ways of being" required of democratic citizens. Like Dewey, we believe students learn to be democratic citizens through making decisions within the democratically organized institution of school. Dewey argued that for students to become participatory members of a democratic community, they must have the "power of self-direction and power of directing others, powers of administration," and the "ability to assume positions of responsibility" as citizens and workers. Moreover, students must have "a command of the fundamental methods of inquiry and the fundamental tools of intercourse and communication" (Dewey, 1902, p. 93). Therefore, we aim to provide students with opportunities for decision making and responsibility.

However, by stating that students should be involved in making decisions regarding their own learning, we are not implying, as have some "progressive" educators in both Dewey's time and in the 1960s and 1970s (e.g., Neill, 1960; Holt, 1970, 1972), that students should entirely direct their own learning or that all learning is of equal significance. For example, we disagree with Holt, who stated: "I think children would like to divide their lives between children's activities, things thought up and done by children for their own purposes; and adults' activities, things thought up and done by adults for their own purposes, with children taking part. But I am more and more troubled by the thought of adults thinking up things

for children to do, no matter how creative" (Holt, personal communication, 1979).

Holt (1972) further stated that schools should model themselves after a Swedish school he visited where the adults and children do what they want, and the teachers never suggest, however subtly or gently, that children do any activity.

In contrast, we agree with Graubard, who in *Free the Children* (1972) wrote one of the clearest and most thoughtful analyses of the misconceptions of those promoting traditional curriculum and teaching and those promoting laissez-faire reforms in the 1960s and '70s. He criticizes Holt for arguing that there is no sense in choosing any subject matter over any other. "Holt assumes," writes Graubard, "that the criterion to be used is future usefulness of the knowledge, and that we cannot do a good job of predicting this, because knowledge and the world are changing so fast" (1972, p. 217).

Graubard rebuts that we do have some idea of what knowledge is worthwhile. Certainly, he suggests, learning multiplication and tic-tac-toe are not of equal value. Further, what students should learn can be determined without relying on what Dewey described as either a "subject-matter centered" or "child-centered focus" (1915, pp. 6–7). While we may rightly reject the idea that the curriculum should come entirely from the teacher, wrote Dewey, the task then becomes not to see "the child as the starting point, the center, and the end" (1915, p. 7) but to respond to the "problem of discovering the connection which exists within the experience between the achievements of the past and the issues of the present" (1963, p. 23). We need to avoid rejecting the experience of either the adult or child. Dewey stated: "Because the older [traditional] education imposed the knowledge, methods, and the rules of conduct of the mature person on the young, it does not follow, except on the basis of the extreme Either-Or philosophy, that the knowledge and skill of the mature person has no directive value for the experience of the immature" (Dewey, 1963, pp. 21–22).

Dewey described the former approach, in which adults imposed their views on the young, as constituting arbitrary authority. Instead, argued Dewey, we need to develop an approach that makes use of the adult's natural authority. Dewey again:

> The greater maturity of experience which should belong to the adult as educator puts him in a position to evaluate each experience of the young in a way in which the one having the less mature experience cannot do. It is then the business of the educator to see in what direction an experience is heading. There is no point in his being more mature if, instead of using his greater insight to help organize the conditions of the experience of the immature, he throws away his insight. . . . The mature person, to put it in moral terms, has no right to withhold from the young on given occasions whatever capacity for sympathetic understanding

> his own experience has given him. (Dewey, 1963, p. 38)

The following example from the elementary teaching of one of the authors (David) in the 1970s in Kansas highlights the necessity for teachers, as adults, to use their greater experience to guide the students.

> *The dialogical relation between the experience of teachers and students: Kindergartners learn geology.*
>
> In my classroom I usually team-taught with another teacher. Each day we posted activities for which students could sign up, some of which were led by one or both of the teachers, some led by students, and some students could do on their own. As children entered the classroom one morning, a five-year-old boy asked me to read the book about the Grand Canyon that his father had brought back from hiking the canyon. I agreed and posted listening to the book as one of the possible activities for which children could sign up.
>
> Later, when sitting with students to read the book, I began by asking if they knew how the canyon was formed. The students responded by suggesting earthquakes and tornadoes as the likely causes, to which I responded that the river eroded the soil, forming the canyon. After the students exclaimed that I couldn't possibly be correct—they described my explanation as crazy—I offered to teach a unit over the next month that would demonstrate sedimentation, erosion, and the formation of canyons. If they would agree to participate in the lessons over the next month, I would plan the unit and begin teaching it within a few days. They agreed, and for a month we explored erosion through a variety of projects. For example, we studied the effects of rainwater on our playground and the erosion and layers of sedimentary shale and limestone in a streambed. We constructed and used a "stream table" to explore how erosion varied depending on the amount and force of water, the slope of the land, and the kinds of soil.

In this example the curriculum grew out of the students' interest in canyons. However, they did not initially express an interest in geology; indeed, they did not know that such a scientific discipline existed. Rather, I took their nascent interest in canyons and expanded it to include the field of geology. Further, I agreed to teach the unit only when they agreed that it was something they wanted. After all, since geology is not typically included in the kindergarten curriculum, there would be no harm in not teaching it and moving on to something else.

My questioning the students regarding their knowledge of geological processes and offering to teach geology depict how I differ from Holt's view and agree with Dewey's. While Holt would wait for the students to ask, Dewey would argue that the adult has a "natural authority" based on

greater experience that needs to be brought to the situation. I was not, I would argue, imposing my authority arbitrarily but offered my greater experience and knowledge as an organizing force and resource.

In the preceding example, with kindergarten students, the adult was primarily responsible for organizing the curriculum. But it is also possible for teachers and students to share the organizing experience. The process of organizing students' learning experiencing is key. Dewey wrote that "finding the material for learning within experience is only the first step. The next step is the progressive development of what is already experienced into a fuller and richer and also more organized form, a form that gradually approximates that in which subject-matter is presented to the skilled, mature person" (Dewey, 1963, pp. 73–74).

In the following example, from David's classroom teaching of primarily older elementary students in the early 1970s in Omaha, Nebraska, the teachers and students collaborated in developing the curriculum. Further, because collaboratively determining curriculum is not without its problems, progress ebbed and flowed, with at one point all the participants temporarily resigning from the project.

Learning Together: Developing a Television Program on City Planning

While my (David's) interests have included architecture and city planning, I had not thought about developing a curriculum around these two interests until students began to express interest in them. I regularly arranged for my students, ages five to thirteen, to present at conferences. One fall, several students and I participated in a conference at which we attended a session on designing and building playgrounds. Consequently, we began designing our own.

The following year we moved to a different building that consisted of only two large rooms. Under the leadership of another teacher, Ken, we began building lofts and partitions in order to create new spaces in the school. The children became excited by the new spaces and worked with teachers to create spaces for different activities. As we moved around shelves, lofts, tables, sofas, and chairs, we talked about how different arrangements affected our movement and feelings of spaciousness and privacy.

Later in the year, several children asked if we could visit an architectural office. I arranged a visit, and the children were impressed with the architects' planning, drawings, and models. After that experience I built a drafting table, and the children began designing buildings, drawing elevations and floor plans, and building models from their plans.

In the meantime we had been asked by the local public television affiliate to do a program on some aspect of government; they suggested "how a bill becomes a law." Because of our developing interest in design and the environment, Ken and I decided to propose to the older elementary stu-

dents that we create a program on city planning by focusing on Omaha's regional planning agency: The Metropolitan Area Planning Association (MAPA).

The students initially responded enthusiastically, in part because of the prospect of "being on television." However, developing a half-hour show required more than enthusiasm. My own thinking inclined toward the political and theoretical, which proved, not surprisingly, too difficult for the students and too difficult to portray. Ken had some ideas for the actual presentation, promoting the idea of explaining MAPA by "filming a tour" of the agency with the students portraying agency employees.

Unsure of what we would actually do (of course, none of us had ever written a television program), we first tried to learn about MAPA by reading MAPA's publications, interviewing staff, and sitting in on a board meeting. Besides becoming bored, we didn't understand what MAPA really did, in part because the agency's role in area planning was unclear. None of the students came up with feasible ideas, and Ken and I began to pressure the students to develop the promised program. I realized that my ideas were inappropriate. The students rejected the idea of a "tour" as "sophomoric, but they had no ideas of their own.

After several months we gave up on the project. The students and teachers were frustrated and tired. But after letting the project remain dormant for a few weeks, we started to explore new ways of learning about MAPA. We toured some of their projects, met with a staff member, looked at their maps, and videotaped some "person-on-the-street" interviews. We began to get a better understanding of issues regarding urban renewal and suburban sprawl. We set deadlines and actually began to believe that we had something to say. From then on, the students knew what they could do, and completing the project was easier and more enjoyable.

The final half-hour program was composed of two dozen short vignettes that only children could have conceived. We herded fifty-five students off to the studio where the students took responsibility for all the aspects of creating a program: setting up the scenery, manning the cameras, creating special effects, and, of course, acting. A few vignettes should suffice to convey the students' spirit.

We had learned that some areas near streams and rivers were designated as "hundred-year flood plains," meaning that the area would flood on average once a century. Two building uses were permitted in such areas: drive-in theaters and the misleadingly named "mobile homes." Therefore, in one vignette an owner of a mobile home stands outside his front door just as it begins, through special effects, to rain. Then, as water, through more special effects, begins to rise around the homeowner, a MAPA employee comes up to query the homeowner about whether he knew that he lived in a flood plain, patiently showing him a regional planning map. As he does so, the mobile home floats off.

Other vignettes included can-can dancers singing a song praising city planning and a student narrating students' photographs portraying downtown urban renewal and the environmental effects of suburban sprawl. In the end we included every one of the fifty-five students in some aspect of the production. The program, which we titled *MAPA Who? w*as shown on public television and later used by MAPA to introduce regional planning to area citizens.

Throughout the project, teachers and students frequently exchanged leadership roles, and on one occasion everyone quit, giving everyone time to gain perspective and to come back with better ideas. The teachers were clearly in charge of the overall planning, but the students owned the creative process of writing and acting. In fact, the kinds of vignettes the students wrote were more creative than any the adults could have written. I, for one, would not teach about regional planning through can-can dancers!

In these two examples from David's classroom, teachers used their greater experience to organize and direct the curriculum. In the first example, the impetus for the unit came from a student's interest in the Grand Canyon, and the teacher organized the unit. In the second example, the interest came from both teachers and students, with students taking the primary responsibility for the creative aspects of the project. In the following example, we turn to Aggie's classroom, where students democratically decide many aspects of the school day and entirely direct their own learning on one day each week.

The Classroom as a Democratic Community: Classroom Practices and Committee Day

In teaching and organizing my (Aggie) classroom, I am guided by five principles. First, what occurs in my classroom should be about students and not about the teacher. In planning activities and responding to students, I try to remember that what is important is what the students are learning, not whether they are trying to satisfy some arbitrary demands. For example, when we begin an activity I monitor myself so I will not tell them that they need to do it in a particular way. Instead I ask: What information are you interested in? Where do you think you will find it? What will you do when you find it?

As I ask them questions, I remind myself that while it may take more time for the students to figure things out for themselves, it is crucial that they do so. I am reminded of the parent who told me that she, rather than her daughter, cleans the guinea pig cage at home. When I remarked that her daughter did an excellent job of caring for the class guinea pig, she replied that she cleaned the cage because it was easier for her to do so. It has been said that a classroom teacher makes over three thousand decisions a day. Are we, as teachers, too quick to make decisions for students because it is easier than engaging students to fig-

ure out what to do and what and how to learn?

Second, students need to drive the agenda. The students need to be able to make decisions about what occurs during the day. In our classroom, the students are responsible for many of the daily routines or rituals, such as lunch count, attendance, morning meeting, and class meeting. Although I have done the actual schedule for the day and week, they will identify a need on a particular day and will adjust the schedule to fit the need. For example, if books are needed for independent reading and research, the students will schedule library time. The student in charge of morning meeting also acknowledges transition time. As each activity draws to a close, the student announces that it is time to transition to the next activity.

Third, in a classroom we are all learners and teachers. While it is clear that I know more than the students, I am continually learning about and with them. They teach one another and me. I am always struck by the student who asks me, "Did you know that?" and I did not. I have become comfortable saying, "I never heard of that" or "I didn't know that"; if necessary, we will research together to find more information. By responding honestly, I don't look or act like the adult who has all the answers; I become a learner alongside the students.

Fourth, children need to be physically and verbally active in order to be engaged. Students learn through language and need to be provided opportunities to use language in meaningful ways. Talking among themselves enables students to review and think through what they are learning.

Fifth, teachers need to know their own belief system about learning. Our practices are driven by the belief system we hold. Once we can articulate our beliefs, we can then reflect on whether our practices match our beliefs.

These principles have led to students' becoming central to creating curriculum, as well as teaching and learning from one another. In the fall of 1995 several students asked me if they could use class time to demonstrate some science experiments they had tried at home. Since I was concerned that by setting aside only a few hours for this we would not give their experiments adequate attention, I suggested that we set aside an afternoon, which worked well. Soon after, we became involved in a time-consuming project with two other classes. I suggested that from then on we set aside a whole day for projects. For the past three years my students have been using one day per week to carry out projects by committee.

At the beginning of the year students choose which day of the week will be committee day and assign it a name. Over the past years committee day has been called Project Day, Terrific Tuesday, and Wacky Wednesday. Once the day is established, students are asked to think of a subject area or topic that interests them. After determining their research question and naming their committee, they are encouraged to recruit other students.

After forming the committee membership and refining the research goal, the goal is shared with the whole class so students can help clarify the committee's goal. Next, each committee, to guide their research, charts what they know and want to know. Committees then turn to undertaking their research. Students work on the computer, read encyclopedias, go to the library, discuss with their committee members, and talk with adults about what they have discovered. Students accomplish more on committee day than during the rest of the week.

Near the end of the day, all the committees share with the class the activities they did in working toward their goal. When they have completed all their work, including reports and demonstrations, they present what they have learned to the class. When committees present, they ask for comments and feedback from the whole class. I am continually amazed at the seriousness with which students question and respond to presenters.

After the year has begun, committees form whenever students express an interest that they can entice others to join. After enlisting other members, they develop a goal and describe what they will learn. On committee days each committee's goals are reviewed at the beginning and middle ("halftime") of the school day. Students ask each other to clarify what they are researching and what they think they will learn.

This day remains sacred through the year. Students will add and subtract activities from other days, but committee day remains the same. They express resentment of any activities that interfere with the day. When asked why they value committee day, they consistently answer: "We get to choose what we want to learn about and how we want to share our learning."

Over the last two years, students have investigated a variety of topics, including tsunamis, deserts, bears, parrots, World War I, Germany, newspapers, caterpillars, and butterflies. One summer, two students started a committee to learn about Anne Frank's life, an interest originating with an older sister. The students continued the committee in the fall because they wanted to teach their classmates. "Maybe," they stated, "other kids don't know who she was. We want to tell them." Students often engage in projects not only for their own learning but because they are taking responsibility for one another's learning.

Part of the process of committee days includes assessing the students' learning. For me, assessment is a continuous process of determining where children are in their learning. I've asked my students: "How do you demonstrate to Ms. Seneway what you have learned?" One student wrote: "Look at a project, think about how people would talk about it, like if they did a good job or needed to do better; kids evaluate other kids not in the committee; you evaluate yourself and go back and think [about] what I did, how did I do it, and did I like it or not?"

I've also asked the students how they might assess their other activities. They've responded: "Tests; stuff like cursive papers, one when started and one now; keep a portfolio; tell what happened; math think-alouds [students report on how they think through a problem]; writing letters; projects for science, do problems; make a book or resources about grasslands; retells." Students actively determine how they will be assessed.

In order to carry out a project successfully, the students engage in setting standards to be reached and assessing whether they met them. They use skills from all the disciplines: reading, writing, speaking, social studies, math, science, and the arts. The students and I are, therefore, actively engaged in a democratically organized classroom that achieves the standards without focusing on students' scores on standardized tests.

Committee day is just one feature of my democratic classroom. Students as a group decide how long we will work on an activity and what counts as satisfactory work. Further, we make many decisions by consensus, so students have a real voice in the life of the classroom. We often vote on issues, but rather than a simple yes-or-no vote, I ask students to show "fist, three fingers, or five fingers." A fist means you strongly disagree with the proposal and cannot live with it, three fingers means you are in agreement, and five fingers means you strongly agree. Recently, all the students in our school building began raising money for a playground. In my classroom students had been collecting money for several months to save the rain forest. A student suggested that we donate the money already collected for the rain forest to the playground. Using the consensus method, the class president (an office that rotates weekly) asked for "fist, three, or five." Many fists were raised, and those students had to explain why they could not live with the idea. Debate ensued, and the class officers sought a middle ground. Finally one of the students said, "Even if we don't give money to the playground, it will be built, and the rain forest is more important than what we need." With that comment, those who agreed with the original proposal changed their minds, and all agreed to keep the money for the rain forest.

Reaching High Standards without Standardization

In our own elementary teaching we have aimed, like Dewey, to develop classrooms in which students participate in deciding what and how they will learn within a community that continually asks: "What is worth learning? How will we assess what we learned? How will we teach others?" In this way we collaborate in developing meaningful standards and assessment methods.

Further, we have *not* divided the curriculum into what Dewey described as "formal and artificial" subject areas that are contrary to "the way a child [and, we would add, adults outside of educational institutions] would see them" and that "obfuscate rather than

enhance their relationship to human purpose" (Dewey, 1896, pp. 64–65). Instead, we desired that our students become engaged in asking and answering essential questions that are central to making sense of the world as a whole. For example, David's students, in researching, writing, and producing *MAPA Who?* were engaged in answering questions regarding the goals and issues involved in regional planning. In answering those questions and then presenting them to others, the students learned, at minimum, history, geology, politics, writing, and acting.

Our assessment has focused *not* on how well students perform on centrally created standardized tests but on how well students demonstrate their learning to other students and the teachers. The real test, we feel, of whether students have achieved high standards is in the complexity and sophistication of the students' learning. That kindergartners become excited about geology and fourth graders about Anne Frank and the holocaust demonstrates that high standards can be achieved by developing an environment in which teachers and students engage in the dialogical process of introducing one another to the wider world.

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FROM POSITIVISM TO AN EPISTEMOLOGY OF COMPLEXITY

Grounding Rigorous Teaching

Joe L. Kincheloe

From Barbara Thayer-Bacon's three blind men and the elephant, we come to understand the meaning of epistemology. Building on her essay, I will examine the reductionistic epistemology or positivism that grounds technical standards. Then I will develop an epistemology of complexity that moves us to a far more intricate and sophisticated understanding of the ways our view of knowledge profoundly shapes the nature of the education we embrace. For readers who do not have a background in philosophy, please do not be frightened by the term *epistemology*. The word signifies a very simple concept—the study of knowledge. The word and the concepts it represents are too important to waste only on philosophy majors. Epistemology is important because it invisibly shapes not only the form school takes but also the way we think, our consciousness, the way we see the world, our images of ourselves, even our identities.

Indeed, epistemology matters as it shapes us and the world around us. Epistemological questions might include: How do we know? Is that true? Is this an objective test? Why do you believe that? Is history based on fact or interpretation? Are the answers on the standards exit test based on truth, or are they opinion? What we refer to as knowledge is problematic. Human knowledge—knowledge about humans, groups of humans, human institutions, human interaction, and knowledge derived by research conducted by humans—is constructed by a variety of forces. In this portion of the encyclopedia, we will analyze the complex notion of epistemology in light of its effect on educational standards and the purpose of education in general. Any knowledge, any curriculum, any method of teaching, any

standard assumes—whether consciously or not—an epistemological stance. Standards of complexity maintain that anyone involved with devising standards or with teaching or learning should be keenly aware of these epistemological dynamics.

One task of epistemology is to provide theories of the nature of knowledge, of its genesis and its justification. Traditionally, many scholars have assumed that once we were conversant with theories of knowledge, we would be better prepared to proceed with our research and teaching. These diverse theories of knowledge, of course, conflict with one another over the definition of "true knowledge"; indeed, some epistemologies deny even the possibility of true knowledge. Nevertheless, different epistemologies promote different forms of knowledge along with different methodologies, ways of knowing, and ways of learning. Thus, we accept religious knowledge and ways of knowing, ethical knowledge and ways of knowing, linguistic knowledge and ways of knowing, intuitive knowledge and ways of knowing, and emotional knowledge and ways of knowing. "How do you know you're in love?" "I just know; I feel it very strongly."

In the social and physical sciences and in educational and psychological fields, scholars in the past three decades have been confronted with an epistemological crisis. The crisis has produced some difficult questions for researchers and educators. What is the proper method of pursuing social, physical, and educational knowledge? What constitutes knowledge in these domains? How do we teach such forms of knowledge and knowledge production? How do we—or even should we—teach about the epistemological disagreements among various scholars in classrooms? There is great dissatisfaction among social and physical scientists and educational and psychological researchers with the positivistic definitions of knowledge—though the discomfort is not by any means universal. Among the uncomfortable, no consensus has been reached on a new definition of knowledge. The debate over technical standards and standards of complexity represents its extension into the realm of educational policy. The debate over epistemology and the way the epistemological crisis is resolved will exert a profound impact on humanity—it will shape the nature of what we deem knowledge. And to a significant extent, we are what we know—it shapes us.

No matter what scholarly, social, cultural, educational, or even vocational domain, epistemology is always lurking in the shadows, shaping what is going on. The following is an excerpt from my book *Toil and Trouble: Good Work, Smart Workers, and the Integration of Academic and Vocational Education*. In this section of the book I am exploring the forces that shape our view of workers:

> Contrary to mainstream depictions of it, schooling is always a struggle over particular ways of life and particular epistemologies. Epistemology refers to the nature of knowledge, what consti-

> tutes it and how we produce it. The debate over how America deals with work education is an epistemological debate over what knowledge is of most worth. Two worlds have developed within schools: one, a world that values academic knowledge and prepares students for college; the other, an "antimatter world" that values the knowledge of work and prepares students for jobs. Because mainstream society refuses to value the knowledge of job preparation, the status of work-related knowledge is very low. Thus, society treats vocational high school students as if they are deficient and incapable of thoughtful behavior. These epistemological assumptions structure not only work education but also the nature of work itself. For example, if the knowledge of particular jobs is not valued then low incomes and dehumanized work places are justified. The phrase, "he's just a maintenance worker" reveals so much. Since he works in an unvalued, low-skill job, why should we care if he has input into how the job is performed, or if he makes a livable wage, or if he and his family have health care coverage? These epistemological assumptions also determine what jobs are appropriate for particular demographic groups to perform, e.g., jobs suitable for women, racial minorities, or youths. Struggle after struggle arises as individuals from these groups attempt to obtain "inappropriate jobs." (1995, 32)

It is important to note that any notion of epistemology has been erased from the discussion and debate over educational standards. Such an omission is deeply troubling because educational standards are by nature an epistemological issue. In the following pages, I will delineate two important epistemological stances. In no way do I mean to imply by such a categorization that there are no other epistemological positions possible—of course there are. The reason I chose the epistemology of modernism—positivism—and an epistemology of complexity is because technical standards consistently seem to be influenced by positivism and an epistemology of complexity grounds our standards of complexity. Drawing upon Thayer-Bacon's insights into epistemology and this description of positivism and complexity, readers should enter the standards conversation with an expanded perspective. A key to making sense of many of the entries in this encyclopedia revolves around the epistemological distinctions in this chapter.

The Epistemology of Modernism: Positivism

The epistemological position of Cartesian modernism is known as positivism. Few philosophical orientations have been so influential on the way we live our lives and construct education as modernist positivism. Yet, concurrently, few philosophical orientations have been so little understood. From a technical perspective, the term *positivism* began to be used widely in the nineteenth century. French philosopher Auguste Comte popularized the concept, maintaining that hu-

man thought had evolved through three states: the theological stage, where truth rested on God's revelation; the metaphysical stage, where truth derived from abstract reasoning and argument; and the positivistic stage, where truth arises from scientifically produced knowledge. Comte sought to discredit the legitimacy of nonscientific thinking that failed to take "sense knowledge" (knowledge obtained through the senses and empirically verifiable) into account (Kneller, 1984; J. Smith, 1983). He saw no difference between the ways knowledge should be produced in the physical sciences and in the human sciences, and he believed one should study sociology just like biology. This had a dramatic impact on the way we would approach the educational act. Social knowledge and information about humans would be subjected to the same decontextualizing forces as the study of rocks. Social, educational, and psychological scientists would pull people out of their cultural setting and study them in laboratory-like conditions.

Society, like nature, Comte argued, is nothing more than a body of neutral facts governed by immutable laws. Therefore, social actions should proceed with lawlike predictability (Held, 1980). In a context such as Comte's, education would also be governed by unchanging laws; the role of the educator is to uncover these laws and then act in accordance with them. For example, educational laws would include universal statements regarding how students learn and how and what they should be taught. The positivist educator, in other words, sees only one correct way to teach, one correct body of knowledge to transmit to students, and he or she has unwavering faith that scientific study can reveal these methods and knowledge if we search for them diligently.

The following ten characteristics of positivism help us understand the impact of epistemology on our consciousness, the larger society, and technical educational standards.

1. *All knowledge is scientific knowledge*. First, positivism insists that only scientifically produced information should be regarded as authentic human knowledge. Scientific knowledge can be verified and proven. It is knowledge about which we are positive—hence the name *positivism*. When Newton formulated the theory of gravity, he told us that the apple *always* falls to the ground and that what goes up must come down. No exceptions to these scientific generalizations exist. Scientific knowledge is not merely one form of knowledge, the positivists maintain, for knowledge can be produced *only* by science. Positivists hold nonscience in disdain, and they dismiss ways of knowing through religion, interpretation, metaphysics, intuition, and emotion as unverifiable nonsense. This might help us to understand why indigenous and native people were thought by modernist European colonizers to be ignorant savages.

The positivist view of the world exerts a dramatic impact on all of us, teachers in particular. If expert-

produced scientific knowledge constitutes the only valuable information about education, then schooling should be organized so that experts and administrators simply tell teachers how to perform their jobs. And this is exactly what devisors of technical standards have done. In this situation, experts do all of the thinking, and teachers merely execute plans. Any thoughts about the purposes of education and the daily work of the complex classroom remain separate. The positivistic context denies teachers their skills, and the teaching act and classroom practice are torn apart. Once deskilled, teachers are provided with teacher-proof materials and must simply implement lessons prepared in advance by textbook companies, computer programs, or state and district supervisors—all of these knowledge providers are tied to the standards provided. The teacher then functions as a proctor in an ACT, SAT, or standards-test session by reading instructions, distributing materials, regulating time, monitoring for cheating, and answering questions.

Teacher-proof curriculum materials assume that teachers are incapable of making instructional decisions and must be guided through their daily work. Examples of teacher-proof materials include "scripted" lessons that teachers actually read to their classes.

The teacher says, "OK class, take out your books and turn to page 23. Do not proceed until all books are on desk and open to the appropriate page." Then the teacher says to a selected student: "Read the first sentence on flax production in Brazil, Karen."

Unfortunately, this positivism-inspired school scenario is becoming all too familiar. Standards of complexity fight such positivism and continue the effort to secure or restore teacher empowerment in democratic workplaces where they are viewed as self-directed and reflective professionals rather than monitors. The political implications of teacher-proof materials and the logic behind them alarm those of us who value democracy; thus, standards of complexity challenge this first premise of the epistemology of positivism: that all true knowledge is scientific.

2. *All scientific knowledge is empirically verifiable*. Positivism assumes that when we use the phrase *scientific knowledge*, we are referring to knowledge that can be verified empirically (through the senses). What the eye sees, what the ear hears, what we can count, what we can express mathematically—these things constitute empirical knowledge. But the complexity principle contends that many aspects of education resist empirical validation. These invisible factors might include ways of seeing or sets of assumptions. They might include a student's feelings of hurt or humiliation, the self-esteem of an abused child, or the value positions that move people to join a political revolution—such human dynamics do not lend themselves to quantification or empirical verification. Indeed, the existence of positivism itself as a force that shapes what we "see" cannot be empirically veri-

fied. In other words, positivism cannot study its own assumptions because they are not empirically verifiable.

When we encounter educational knowledge and content standards that use such an epistemological base exclusively, we find it limited in what it can tell us about schooling and the learning process. Indeed, when students learn from materials produced by such a positivist science, they tend to find that the most important aspects of education are left out or distorted. To become the best possible teacher, one should understand the epistemological dynamics of knowledge production. Knowledge about the world and about the educational cosmos in particular is never neutral. It is always based on a set of values and assumptions about the nature of the world and the people who live in it. These epistemological dynamics shape beliefs about the purposes of education, the knowledge it deems valuable, and the way it is taught.

3. *One must use the same methods to study the physical world as one uses to study the social and educational worlds.* Serious problems result when one applies positivistic physical-science methods to the study of the social world, education, or, after Einstein, the physical world itself. A key aspect of positivistic research in the physical sciences involves the attempt to predict and control natural phenomena. When applied in psychology and education, physical-science methods then apply such knowledge as a tool to control human beings. Thus, students come to be viewed, understood, used, and controlled just like any other *thing*. Positivism loses sight of the idea that the objects of social, psychological, and educational research—humans—possess a special *complexity* that sets them apart from other objects of study.

Positivist social, psychological, and educational scientists fail to understand that the physical scientists they emulate impose their observations on the objects under observation. Physical scientists do not have to consider the consciousness of their objects of study or their history and sociocultural contexts. Neither need they consider their own consciousness and assumptions, many argue—though I don't agree. This makes research on humans different from the study of, say, sulfuric acid or field mice. If we fail to understand this difference, then we miss the very elements that make us human, that shape us or restrict our freedom.

Here rests one of the key points in our discussion of epistemology in general and positivism in particular: modernism and its positivist epistemology lead to a devaluation of human beings and a depersonalization of our institutions. People become merely more variables in a larger social equation; our sacredness as spiritual beings disappears. Think of how degraded we feel when we are being processed by large institutions—insurance companies, welfare agencies, university business offices, the court system—that see us as a social security number or Case 5 on the docket. Impersonal positivism promotes this kind of treat-

ment. If for no other reason, anything that exerts this much impact on the social world deserves attention in the analysis of standards and educational purpose.

4. *If knowledge exists, it exists in some definite, measurable quantity*. Positivism teaches that we can express knowledge in mathematical terms. If something exists, positivists argue, we can measure how much of it exists. Indeed, we can express the generalizations, principles, and theories derived from positivistic data in mathematical language (Beed, 1991; Garrison, 1989). Positivists define systematic observation that produces valid knowledge in terms of mathematical experiments. In this context, researchers look for mathematical relations between variables. If such mathematical relations emerge, then they generalize the relationships to produce a universal law.

Many of us who call for standards of complexity and a democratic system of meaning find ourselves uncomfortable with the positivist assumptions that "to be is to be measurable" and that human endeavor can be expressed in mathematical terms. Much of what education researchers have to study does not lend itself to measurability or even direct observation. To address this problem, positivists developed what they call "reduction sentences," which are characteristics that summarize statements in a way that makes them easier to observe and measure. A hard-to-measure concept such as hunger in a positivist epistemology becomes "20 percent loss of original body weight" for a mature man or woman. Since weight is a measurable concept, hunger can be expressed in terms of weight. Behavioral psychologists who operate within a positivistic context label such reduction sentences "operational or working definitions." Thus, we develop operational definitions for concepts such as intelligence (what one scores on an IQ test), productivity (output by workers per hour), and quality education (a 10 percent increase in exit-test scores). Indeed, positivists argue, even concepts such as love or creativity can be operationally defined and measured.

These operational definitions may or may not help us understand the phenomena under investigation. But such an orientation often focuses our attention on merely the symptoms of larger issues or ideas—that is, on the consequences rather than the causes. Thus, a belief in the measurability of everything actually distorts our understanding of reality, because it hides the assumptions often made in the production of knowledge. For example, what mental characteristics do questions on a standardized standards test really address? Short-term memory? The ability to store and call up a wide range of factual data? Certainly, standards tests cannot measure an ability to see connections between ostensibly unrelated concepts or the skill to apply such understandings to the identification and solution of problems. Such tests de-emphasize such difficult-to-measure but important abilities, whereas easy-to-measure but trivial abilities gain center stage. Education is thus undermined, reduced to

memorization, computation, and busywork with little purpose or connection to the passions and complexities of human beings. Examine the way standardized-test scores in Texas were increased in the late 1990s and the early twenty-first century: state educational officials merely eliminated the lowest 20 percent of test takers. In these positivistic testing situations, learning becomes a mindless game, the trivial pursuit of abstract and inert information.

5. *Nature is uniform and whatever is studied remains consistent in its existence and behavior.* Positivists assume that the objects they study will remain constant. They believe in an underlying natural order in the way both the physical and the social worlds behave. These regularities, or social laws, positivists argue, are best expressed through quantitative analysis using propositional language and mathematics. The goal for educational research within this tradition, therefore, is to develop theories that regularize human expression and make it predictable.

An epistemology of complexity posits, by contrast, that human beings are much less regular and predictable than the positivists portray them. As humans exhibit their irregularities and unpredictabilities—their diversity—agents of complexity make the case that men and women defy positivist attempts to reduce their behavior to measurable quantities. Teachers and students, for example, are hardly uniform, predictable, and consistent in their personalities, actions, psychologies, and responses. Contrary to positivist opinions, humans are not machines whose behavior can be easily broken down into separate parts. Thank goodness researchers cannot yet provide full and final explanations of the human dynamic. These should be central issues in the standards debate because we are talking about how the social and human world is studied, taught, and learned. When we find a statistical correlation between social dynamics, we still have not asked what exactly the correlation means. Different observers may *interpret* (a key act in an epistemology of complexity) the correlations very differently. What criteria do we use to determine the validity of different interpretations? And since human beings are constantly changing and evolving entities, is the interpretation we offered last week of the correlation between particular social features still valid this week? At the very least, we recognize a complexity in these matters that modernist positivists often miss. This would seem to lay a firm foundation for a more rigorous form of scholarship, teaching, and learning.

6. *The factors that cause things to happen are limited and knowable, and in empirical studies these factors can be controlled.* Positivists believe that variables can be isolated and studied independently to determine specific causes for individual events. Following Newton's laws of the physical universe, they believe that for every action there is an opposite and equal reaction, and that these actions and reactions can be identified and measured. Positivists

refuse to acknowledge the complexity of the world, especially the world of human beings. The world, they believe, is neat and tidy, and the noise and confusion foisted on it by the "humanness of human beings" makes positivists edgy. Research would be so much easier if researchers and the researched could only avoid this untidy world and the imprecise medium of verbal language.

Positivists dream of a spick-and-span science in which all researchers are identical, unbiased, infallible measuring instruments. Modernist positivism accepts a cause-and-effect linearity that works like a machine. For example, when the human body breaks down, doctors may reliably identify one certain factor immediately contributing to the illness. But in reality, the causes are always multiple. Some are environmental, some psychological, and some physical. Diet, stress, chemicals, exercise, emotions, heredity, and viruses all affect the health of the human body, and these multiple causes rarely function in a simple, easily traced manner. Life processes, like social and psychological processes, are rarely neat and tidy; we must view them in the context that shapes them if we want to make sense of the way they operate.

As we think about the positivistic assumption that causative factors are limited and knowable, imagine the way we study classroom management or, as some call it, discipline. Hundreds of researchers have studied classroom discipline in the past thirty years. In addition to problems of sample size and the relationship between what gets defined as good discipline and desirable educational achievements, the control of variables in discipline research presents several other special difficulties. Literally thousands of unmentioned factors can significantly influence what happens in any classroom (D. Fiske and R. Schweder, 1986; Barrow, 1984). One student may respond to a specific teacher's discipline one way—not because of the discipline itself but because he or she is accustomed to a certain type of discipline at home. For example, a student raised in a permissive home may interpret a subtle, mildly coercive, noncorporal disciplinary act quite differently from a student raised in a strict home where punishment is physical. To the student from the strict home, subtle discipline reveals the teacher's weakness. Another student reacts differently to the subtle, mildly coercive discipline because of the nature of his or her relationship with the teacher. One student, whose parents are long-time acquaintances of the teacher, may know the teacher as a trusted friend. When confronted with corrective action of any kind, this student may feel uncomfortable because he or she is unaccustomed to conflict in his or her relationship with the teacher. What appears to the observer to be a mild admonishment provides a great deal of embarrassment to the student. Another student is affected by the presence of an outside observer and reacts in a way that is inconsistent with prior behavior. Still another student's be-

havior may be triggered by Tourette's syndrome or some other physical condition that may or may not be diagnosed or known to the teacher. A researcher can hardly account for all the possible variables that may affect what is being observed (Barrow, 1984). Veteran teachers recognize this. When a supervisor or observer enters the classroom, the atmosphere changes dramatically. Students who are usually well behaved and participate actively may suddenly become disrespectful or inattentive.

So the various facets of a student's or a teacher's nature, of every individual's background, of every context, and of all the interrelationships and combinations of factors may be each or in conjunction the key elements in explaining what happens in a classroom. This reflects what is sometimes called *chaos theory*, or *complexity theory*. These crucial elements elude positivist researchers. In this context, a professional education that provides a teacher with five scientifically validated "surefire methods" to discipline students no matter who they are is probably worthless. Unless the methods are contextualized by attention to the teacher's philosophical assumptions; the purposes of education he or she embraces; and the ethnic, class, socioeconomic, religious, cultural, racial, and gender backgrounds of the students, such methods generally will lead one astray. In fact, they often can keep a teacher from connecting with students in a way that motivates, validates, and inspires them. This is exactly what classrooms structured by technical standards often do.

7. *Certainty is possible, and when we produce enough research we will understand reality well enough to forgo further research*. The goal of positivist research involves the quest for answers to specific questions, and such a quest implies a definite end point. But because we cannot control all variables, as we just saw—because the factors that cause various behaviors are unlimited—the quest for positivist certainty is futile and quixotic. If we learn anything definite from positivist science, it is that our ideas about the world change with new revelations and that they will continue to change, probably for all time. The chance of arriving at some juncture in human history where research becomes unnecessary because we all understand the nature of reality is slight.

Better, then, to abandon the quest for certainties that focus our attention on the trivial—on only those things we can easily measure. One of the reasons history tests often emphasize dates, people, places, and battles is that teachers find it easy to measure whether students have "learned" this kind of information. They find it much harder to evaluate an essay test, with its potential ambiguity and complexity. In fact, the quest for absolute certainty in testing and evaluation encourages the lowest form of thinking (rote memorization) and dismisses higher-level thinking (analysis, interpretation, contextualization, and application).

For these and many other reasons, democratic educators often view with skepticism the certainty with which positivists make "valid" arguments. Advocates of standards of complexity are generally inclined to have a more humble and limited perspective. Indeed, it seems safe to predict that educational researchers will never determine the five best ways to teach economics, the five steps to teaching excellence, or the eight steps to teacher popularity. There are as many good ways to teach as there are good teachers, and some of them conflict. I am always humbled when I watch great teachers teach and find that they are brilliant at what they do. Though I disagree with their conclusions and many of the decisions they make, I still would argue that they are great teachers who inspire many of the students who may find me boring and even offensive. Indeed, what we do successfully in one context may fail in another. The best teachers adjust lessons and adapt to changing classroom environments. This relatively simple concept is exactly what technical standards don't understand. All teachers, technical advocates argue, must teach alike. Standards of complexity reject this "Stepford teaching."

Discuss this concept with an experienced teacher in a departmentalized school who teaches five periods of math every day, and he or she will tell you that even though the lesson plans may be identical, each period proceeds differently. The teacher may gain an insight in the first period that is applicable in the next four periods. A student in the second period may ask a question that alters the structure of the lesson. Students in each class ask different questions, have different personalities, have unique learning styles and learning needs, and respond differently because of the time of day, weather conditions, events in the school schedule, and so forth. A uniform lesson plan for all five sections of the class may be possible, but because of the complexity teachers cannot control, uniform lessons are not. In fact, even if teachers could control every lesson, such control would hinder learning. The best teachers are comfortable with the variety of interpretations, paradigmatic insights, experiential understandings, political perspectives, and historical analyses their students bring to class.

8. *Facts and values can be kept separate, and objectivity is always possible.* Unlike positivists, I do not consider scientific research a value-free activity. The popular image of science reflects the belief that the only parameters that limit a scientist's activities are intellect and curiosity. This belief is misleading because values and power dynamics continually shape research. If educational researchers operate in a college of education dominated, for example, by positivist assumptions about the nature of research, then they might lose such career benefits as tenure if they attempt to conduct research that deviates from the rules of positivist methods. More important, because financial grants from govern-

ment and private foundations often determine the type of research that takes place, funded inquiries typically reflect the values and interests of funding agencies. A brief survey of accepted and rejected grants will illuminate the political values that drive knowledge production in education and elsewhere.

Nevertheless, positivist educators continue to insist that researchers suppress their personal value judgments, convictions, beliefs, and opinions (Beed, 1991). They insist that empirical inquiry should remain value free and objective and that values are tainted because they are subjective. Thus, the proclamations issued from the positivist pulpit project the illusion of political and moral neutrality. Accordingly, the wizard may be exposed, and the epistemological rules that dictate exactly what we can and cannot count as facts must be uncovered (Garrison, 1989).

The implicit rules that actually guide our generation of data almost always reflect specific worldviews, values, religious and political perspectives, and definitions of intelligence. Research can never really be nonpartisan, for we have to choose the rules that guide our research. Inquiry, teaching, or standards development can never really be nonpartisan, for we have to choose the rules that guide our research, our methods, and our choices. Particular rules focus our attention on certain aspects of education and deflect it from others. Positivism, for example, focuses our attention on education as a technical act. When we measure certain aspects of education to determine how well school systems or particular schools or teachers are doing, we cannot separate this question from the political issue of what schools *should* be doing. Therefore, if positivist research can establish the criteria by way of research instruments that measure how well we are doing, it has also established what we should be doing. If I believe the role of schools is to develop critical, democratic citizens who seek to do away with social injustice, I will develop different educational standards than someone who does not hold these beliefs. Positivism becomes a political instrument of social control, even while its adherents proclaim their neutrality, their disinterestedness, and their disdain for mixing politics and education (Bowers, 1982).

For example, if researchers describe students' readiness for work as the ability to follow orders, respect authority, and function as team players, the schools with good evaluations teach these skills. The "objective" process of defining work readiness conceals some very specific values: From a variety of ways to define *work readiness*, the researchers choose the definition closest to their political and economic beliefs. They want to prepare a society of compliant workers who obey orders without raising questions or challenging authority. Having made a value-driven choice, the researchers, contrary to their protestations, are no longer political innocents.

The same holds true for the teacher who gives a multiple-choice test. The

test appears to be an objective, value-free instrument of evaluation, but closer examination reveals a set of hidden value assumptions. In constructing the test, the teacher had already chosen the textbook on which the test material was based, a value choice that prioritized one book over several others. The teacher also considered particular material from the book to be more important than other material, a value choice of some "facts" over others. The teacher chose a multiple-choice format over other evaluation formats, a value choice that advanced certain forms of learning (fact memorization) over others (for example, analysis, interpretation, and application in an essay or a series of short written answers). Such value choices are inherent in teaching and living. Although we can hardly avoid them, we should understand that we are making them. This awareness is a key goal of a democratic education and the type of rigorous standards it demands. With this understanding, we can change the world of education. Such recognitions ground a democratic form of education and constitute a cardinal aspect of higher-order thinking.

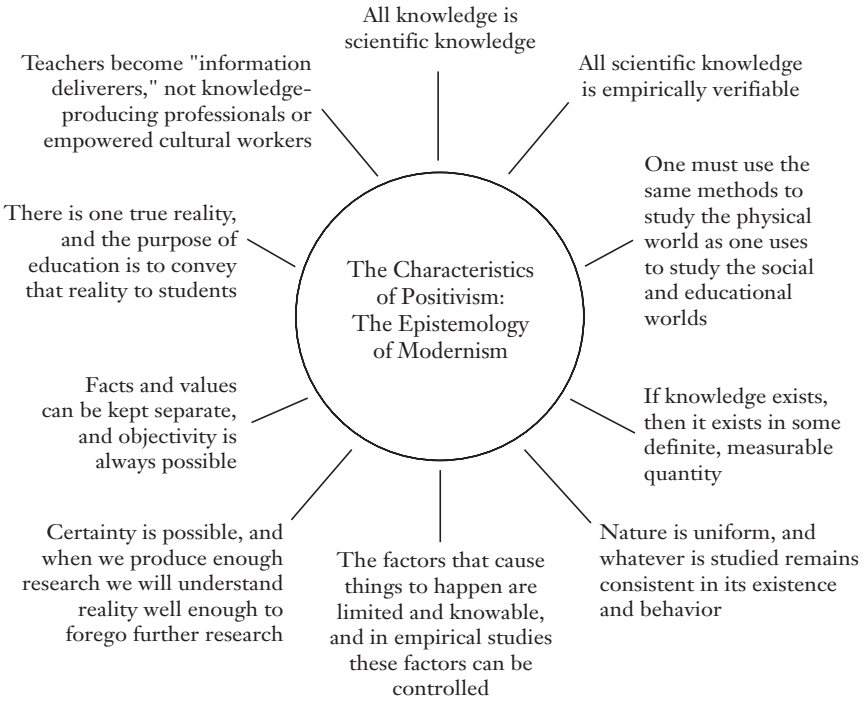
9. *There is one true reality, and the purpose of education is to convey that reality to students.* Positivists generally contend that one best way to accomplish a task exists somewhere. For example, given one undisputed best way (best method) to teach, the purpose of the positivist teacher educator is to pass that method along to students; the purpose of the positivist biology teacher is to pass along the "truth" about biology. Advocates of complexity know that the truth about biology is not simple. At the very least, it depends upon whom you ask. Educational science grounded in positivist research assumes that the laws of society and the knowledge of human existence are verified and immutable and ought to be inserted directly into the minds of children. Operating on this assumption, educational "engineers" devise curricula and organizational strategies for schools as if no ambiguities or uncertainties in the social, physical, and educational worlds exist. Nothing is problematic: "Columbus discovered America." "The Indians were an impediment to westward expansion, but by the turn of the century this hindrance had been removed." "After the Mexican War ended and land disputes had been resolved, the size of the United States increased." All of these "facts" express points of view that many scholars don't accept. Pass the facts along to students; don't ask too many questions about the values and assumptions embedded within them. In standards of complexity, an understanding of these embedded values and assumptions in a variety of fields is important to becoming an educated person.

Contemporary culture teaches us to revere science and the scientific method and, interestingly enough, to accept its primacy on faith, which is to say, unscientifically. The authoritarian voice of positivist science silences our languages of intuition, aesthetics, spirituality, and insight. The view of sci-

ence that regards the aesthetic and subjective as soft, effeminate, impressionistic, and nonscientific devalues such articulations. Cowed by the authority of positivist science, we accede to its demands and allow it to define teachers as mere practitioners (Aronowitz, 1983; Koller, 1981; Eisner, 1984; Hinchey, 1998; Hicks, 1999; Britzman, 1991).

In his studies of the street-corner culture in Toronto's Jane-Finch Corridor, Peter McLaren found students from lower socioeconomic classes questioning the school's view of themselves as passive recipients of sacred and official facts. The teachers less frequently questioned their own passive position in relation to the expert producers of knowledge (McLaren, 1989). When positivists control knowledge and student-teacher evaluations, we find the range of behaviors considered to be good teaching considerably narrowed. Many positivistic educational supervisors find it easy to label creative lessons that fail to follow the "one best method" unsatisfactory. Thus, teachers earn rewards less for their sophisticated notions of competence and creativity and more for their adherence to a prescribed format. Like workers on a factory assembly line, teachers in positivist school systems become rule followers with little influence over how the rules are made. They become the executors of managerial strategies for keeping students on the task of rote memorization. Even among the best teachers, the passion for creativity and engagement slowly erodes as positivistic science becomes ever more deeply entrenched in our schools and society. Blind faith in positivism may be one of the great tragedies of our era. But along with many researchers and scholars who are aware of epistemological complexity, we are trying to reverse its philosophical dominance.

10. *Teachers become "information deliverers," not knowledge-producing professionals or empowered cultural workers.* In such a positivist context, we wonder why society should bother with teacher-education programs or even with educating teachers past the eighth grade—and among many right-wing advocates of technical standards, there are calls to end the type of teacher education advocated here. If teachers are merely information deliverers, we need hire only those with the abilities to read the scripted teacher-proof material and intimidate and control students. In the technical standards–driven schools emerging in the early twenty-first century, managers are calling for exactly these types of teachers. In such a context, the idea of a scholarly teacher with interpretive, analytical, or research abilities becomes irrelevant. School is simply a memory game in which the more creative teachers make memorization palatable by creating contests and mnemonic devices designed to ease rote learning. Only a desire to compete or to please their teachers or parents can motivate students in such an educational purgatory. Education has no intrinsic value, no connection to the lived world of human beings.



The Epistemological Assumptions behind Technical Standards

Indeed, knowledge-producing, scholarly teachers who understand the tenets of positivism can be viewed as dangerous undesirables in unreflective, technical standards–driven schools. In my own teaching experience, I have been viewed by administrators as a subversive who exerted a negative influence on my students. When I was teaching geography and history in high school, my principal told me after observing a geography class: "Why don't you get rid of all that interpretation and analysis crap and just give the students the facts they need to know? They'll be happier and I'll be happier." I couldn't do it. I had to get behind the epistemological curtain and find out why these facts and not others. My view of teaching transcended mindless, positivistic information delivery. If I had wanted to be a deliverer, I could have gone to work for Domino's. In a positivist, technical standards–driven system, I will probably be better off there. Certainly, my administrators and supervisors will be happier with my career decision. Indeed, technical standards–driven, positivistic schools will drive the best and brightest teachers away from the profession. Such teachers will find it increasingly difficult to deal with the black-and-white authoritarian orders given to them. They will find a new vocation where they can exercise their own professional judgment and retain a degree of creative control. Epistemology matters.

Understanding Epistemology—We Appreciate the Need to Respect Our Teachers and Raise Our Expectations of Them: Complex Teachers as Scholars

After all the technically rational studies of "what works" are completed, all the practical methods are disseminated, and all the standards are written, teaching will still primarily be a scholarly activity. What does this mean? It implies that educational leaders and teachers must be capable of creating an environment in which scholarship can thrive and analytical thinking can develop. To accomplish such difficult tasks, teachers must be capable of analysis and synthesis themselves. A complex teacher education must do its part to contribute to such abilities. Teacher educators must be aware of the ways in which positivist epistemology structures the school in a way that subverts such abilities. Teachers must be prepared for the assault on their psyches that they will face in schools marked by prespecified objectives, top-down standards, and strict accountability based on standardized posttests.

Analysis, synthesis, interpretation, research skills, and epistemological awareness are the martial arts for the twenty-first-century teacher. Given the threat against teacher conceptualization and teacher control presented by the positivist structure of many technical standards–driven schools, educators need black belts. Teachers so equipped will be able to take data, concepts, methods of knowledge production, and social and pedagogical theories and adjust them to the demands of diverse learning situations. Such teachers by necessity must be committed to independent democratic thinking rather than to an unanalyzed allegiance to positivistic, prespecified practices. Teacher education that promotes such professionalism emphasizes the type of contextual studies that aids teachers in their quest to formulate questions of purpose. When they are able to formulate and contemplate such questions, teachers are ready to assume a larger role in redefining the nature and spirit of what an educator does. Empowered by such abilities, they are now ready to help change the conditions under which they work. These intellectually capable, self-directed, empowered teachers will create a workplace in which scholarly work is nurtured and teacher control of the conceptualization of their own teaching is jealously guarded. Incompetent and authoritarian administrators will not survive very long as leaders of such a competent and self-confident teaching force that understands the dangers of positivistic technical standards.

Teachers armed with historical and epistemological understandings will ask good questions of education. They will be seekers of patterns, revealers of hidden agendas and ideologies, and agents of educational progress. Such educators will demand modes of teacher evaluation that go beyond assessment of classroom cleanliness, order, and student test scores. First, the new evaluation will demand evaluators

who themselves possess the aforementioned analytical skills; second, it will respect and appreciate the potential diversity of individual teacher goals, while it facilitates the attempts of teachers to work out the relationship between curricular conception and execution; and third, it will patiently observe and aid the efforts of educators to glean meaning from the plethora of elements that continually shapes and reshapes a learning environment (Mathison, 2000).

Teachers who are good question generators and question askers will hold subject-matter knowledge up to creative critical inquiry. Teachers in higher education, though often possessing superior command of a body of information, sometimes fail their students as they fail to question the significance of certain knowledge in the overall education of an individual. The study of education promoted in an epistemology of complexity concerns itself with questions about the meaning of the knowledge of a discipline, its connection with the lived world, its role in education, its proper place in a course of study, and its contextual relationship to the lives of the students (Cadenhead, 1985).

As standards of complexity view teaching as a critical scholarly activity, educators automatically begin to think of such questions. Teacher education operating in the epistemological zone of complexity may choose to examine the great teachers of the past, focusing on the relationship between educational purpose and pedagogical methods. As individuals note the diversity of methods and purposes utilized by successful teachers throughout history, they begin to recognize the positivistic attempt to foist on teachers rationalized, predetermined, standardized methods applicable in all circumstances as an unfortunate expression of a rationalized bureaucracy. Such standardization serves the ideology of deskilling and reductionism as it attempts to control teachers by specifying instructional behaviors and rendering them measurable. Thus, accountability is facilitated and quality is undermined.

Teachers who are empowered by their ability to analyze and synthesize are free to choose pedagogical methods that are based on their own knowledge production, consistent with their own epistemological beliefs, compatible with their own temperaments, and contextually sensitive to their students' needs. They are not obliged to follow a manual written by someone else; they are capable of determining their own guidelines. There is no finite quality of good methods; there are as many methods as there are imaginative teachers to think of creative ways of approaching, producing, and delivering information. An understanding of an epistemology of complexity alerts teachers to their limitless options. It frees them to consider possibilities congruent with informed notions about ideal classrooms. An epistemology of complexity provides teachers the metaperspective that enables them to talk about the language, discursive location, and ideological assumptions of a body of knowledge. In this way, it

takes teachers and students to a social and cognitive place where few educational experiences can go. Standards of complexity push the frontiers of learning and human possibility.

A rigorous, complex teacher education takes these epistemological understandings to rethink the nature of the knowledge acquired in the classroom, how it was presented, and the ways it was learned. Was it presented unproblematically as truth? Were alternate interpretations provided? Were the values implicit in the information exposed? What were the epistemological assumptions of the teacher? What were the student's epistemological assumptions now that you understand what epistemology is? With these understandings, teachers become scholars who move to a new level of consciousness. They see pedagogical and ideological features of schooling that were previously invisible. With this new knowledge and set of conceptual understandings, they are prepared to turn the rigor and value of their teachings up a couple of notches. They now have the ability to connect their lessons to the lived worlds of their students and to engage them in a rigorous exploration of themselves, the world, and their relation to it. This is no simple task.

Constructing an Epistemology of Complexity

To escape from the TV-dinner pedagogies and the covert ideological distortions of technical standards while at the same time pushing for new understandings and life-changing modes of teaching, it is important to understand an epistemology of complexity. In this context, we can construct our own democratic system of education and imprint our creative stamp on professional practice. In that spirit, the following is a delineation of a democratic transformative epistemology that recognizes the complexity of the lived world and the teaching act. To be a scholarly researcher and knowledge worker who is capable of creating rigorous schools that offer quality education for everyone regardless of race, ethnicity, or economic background, this epistemological understanding is basic.

Knowledge Is Socially Constructed

What we designate as knowledge is complex and always problematic. Social knowledge, knowledge about humans, and knowledge produced about education are all shaped by a variety of forces—they are always constructed by human beings. The angle from which an entity is seen, the values of the researcher that shape the questions he or she asks about it, and what the researcher considers important are all factors in the *construction* of knowledge about the phenomenon in question. Any knowledge presumes an epistemological stance. Most of the time, knowledge producers don't even know their own epistemological stance. Such a lack of consciousness exerts a dramatic effect not only on the nature of knowledge production but also on how the social, physical,

and educational spheres operate. Positivist educators do not understand the epistemological assumptions they are making. As democratic educators, it is our charge to understand our own and other people's epistemological stance, to understand how the knowledge we come into contact with has been constructed. Such an understanding changes the way we see the world around us, as we begin to understand the problems and limitations of what is known.

Thus, if knowledge is socially constructed, then democratic educators are interested in the nature and effects of that construction. If knowledge about the world does not just exist "out there," waiting to be discovered, but is more of a construction of human minds, then democratic educators want to understand that process. This constructivist epistemological view holds profound implications for knowledge production and teaching in that democratic teachers seek no final perspective on a topic—they know different constructions of events will continue to be produced as times and thus perspectives change. Knowledge is always in process, always subject to new perspectives molded by social and historical change. Thus, constructivist teachers, for example, are very suspicious of those who would offer the "final truth" or the "last word" on the Mexican War or the role of African Americans in U.S. history. In this same context, science teachers understand that after Albert Einstein our view of the nature of gravity was dramatically different.

The epistemological crisis I referenced earlier in this essay is real. Many researchers and educators are horrified by the constructivist contention that findings in the sciences depend on the research methods employed. The uniqueness of the information obtained from different approaches to research has led to the existence of separate bodies of knowledge. When the same event or phenomenon is studied by a variety of methods, the information produced has little covariation. This means that researchers using different methods share so little common ground that they have no way to relate their diverse findings.

Understanding that knowledge is a social construction, democratic teachers come to realize that their job is much more complex than once perceived. Whose knowledge do we teach? Positivistic knowledge? Socially constructed knowledge? Neither? Both? Why or on what basis do we write our educational standards and choose our curriculum? These are not simple questions, but if educators are to rise above a deskilled status, then they must deal with them. In the domain of educational psychology, for example, consider how this dynamic plays out. When a specific intelligence test is examined by a complexity-grounded sociologist and a psychometrician (a psychologist who statistically measures different aspects of cognitive functions), divergent constructions of the test's use and meaning emerge. To the sociologist who assumes the value of an epistemology of complexity, the

test reflects an unexamined set of socioeconomic and cultural assumptions about the nature of intelligence. To the psychometrician, the test may suffer from internal inconsistency—that is, its rank ordering of individuals relative to their intelligence differs significantly from other intelligence tests. Thus, from the psychometrician's perspective, it is a flawed instrument. The point, of course, is that depending upon the paradigm (the model used for making sense of a body of knowledge), our views of this test may vary widely. A rigorous education must understand these epistemological dynamics.

Consciousness Is a Social Construction

This constructivist theme runs throughout our epistemology of complexity. As with knowledge, human consciousness is not something that exists independently of the world. Our consciousness, identity, self-concept, and view of our relationship to the world and other people are shaped by the culture in which we live, our historical era, our family, our peer group, and the information with which we come into contact. In part, we are what we know. For example, if, as Tom Puk (1994) argues, students are taught a false history, a view of the past that never existed, then our understanding of knowledge as a social construction assumes even more importance. Our study of epistemology and knowledge production takes on (in the language of philosophy) ontological dimensions (ontology is the branch of philosophy that studies the nature of being, what it means to be human). If we are what we know, then our very being is shaped by these epistemological issues. In my opinion, that makes them more than worthy of study.

Although we appear to one another as single, bounded identities, an epistemology of complexity maintains that we humans are socially superabsorbent—like humanoid Husky paper towels. This simply means that our consciousness is shaped by that with which we come into contact. Again, we are more complex social beings than the Cartesians imagined. In hyperreality, we are all part TV gameshow host, evangelist, interviewee in a breakfast cereal commercial, cop or criminal, and local news anchor. All personalities are latent and, given the right stimuli, are ready to come alive. Thus, the boundaries of individualism begin to fade like the chalk lines of a late inning batter's box. As they do, we become more aware of a critical constructivism's (the term is used here to denote a consciousness of the effects of power) notion of the social construction of the individual. Indeed, we even begin to recognize the limitations of middle-class notions of individualism. In the name of individualism, we are taught a "me-first" perspective on self-gratification that renders us vulnerable to appeals such as "I believe in equality; everyone gets a tax cut—rich or poor!" This emphasis on self-gratification trivializes critical conceptions of citizenship, friendship, and sexual relationships, as each

becomes something designed to get what we want. Of course, technical standards use testing not only as a sound way of assessing the value of education, but also as a means of motivating our individualistic students. As we gain an awareness of the construction of our consciousness, maybe it becomes possible to critically reconstruct our understanding of the nature of individualism and interdependence.

Always concerned with power, this epistemology of complexity studies the exaggerated role it plays in the social construction of consciousness. Teachers employing the democratic system of meaning analyze their own and help students analyze their consciousness constructions, especially around the ways race, class, gender, and religious dimensions of power contribute to the process. Novices in this context would explore the historical purposes of schooling and how these purposes were manifested in their own school lives and their own consciousness constructions. In other words, an epistemology of complexity would transform teacher education into an intense sociopsychological and cultural analysis of the effects of schooling. The ways that women and men construct their consciousnesses and the role that education plays in that process would become a guiding concern of college and university teacher education and school and community consortiums—an innovation that would necessitate interdisciplinary connections and research alliances across universities, school districts, and local communities.

Democratic teachers use this epistemological understanding of consciousness construction to shape the purposes of their teaching and self-explorations. In this context, such teachers seek a variety of methods to heighten individual awareness. Edmund Husserl, the great phenomenologist (phenomenology is concerned with the study of consciousness, as it attempts to grasp the ways individuals make meaning among themselves and other people), delineated research methods designed to facilitate understanding of the structure of consciousness and its relation to the world. One aspect of this method, bracketing, involves consciously setting aside everyday, accepted assumptions about one's immediate perceptions (Chamberlin, 1974; Schwandt, 2000). Once this bracketing of assumptions takes place, the individual examines and makes explicit all the meanings that were hidden in initial perceptions. In this way, individual awareness is heightened as previously hidden assumptions are revealed. The individual thus finds himself or herself more in touch with the values, political forces, fears, and associations that unconsciously direct his or her actions. Continued analysis of such factors may uncover their origins, thus contributing to greater self-understanding and self-knowledge. The foundations of the phenomenological method must rest on a self-knowledge that, once gained, allows teachers and students to turn their focus outward to more textured understandings of the interior experiences of others. Thus, we become more sen-

sitive to the ways consciousness is socially constructed. We begin to understand the impact certain forms of education make on individuals and groups of students. In this way, the scholarly rigor of the educational enterprise is intensified.

Power Plays an Exaggerated Role in Shaping the Production of "Truth," of Constructing Our Consciousness

An epistemology of complexity understands that there is simply no such thing as neutral or unpoliticized knowledge, no matter what advocates of technical standards may argue. In its social construction, knowledge is shaped by the dynamics of power. Who's producing it and for what purposes? In the construction of our consciousness, power plays an exaggerated role in the process as one must hold power to produce certified public knowledge. Epistemologically aware educators reject the reductionistic notion of politically neutral research into social phenomena, arguing that such a stance constitutes a form of ideological mystification—that is, an attempt to hide the political interests of educational practice and the research about it. For example, when Lynne Cheney as the head of the National Endowment of the Humanities fought against the history standards developed by professional historical associations, she charged them with a politicization of history education. How could they produce such a biased curriculum, she asserted, mentioning, for example, Harriet Tubman more than Nathan Hale? As with most advocates of technical standards, she put forth her content standards as politically neutral. If researchers fail to keep the normative, political, or value dimension of educational research in mind, the research they produce and the ends to which it is applied will simply serve to reproduce hegemonic social relations—in Cheney's case the exclusion of African Americans from the curriculum. Thus, from a complex epistemological perspective, an awareness of the value orientation of research is essential, as it brings to consciousness the fundamental embodiments of power that move social and educational events (Soltis, 1984; Kincheloe and Steinberg, 1997).

Beloved emancipatory educator Myles Horton put this power-related concept so simply in his conversation with Paulo Freire in 1990:

> When I first started thinking about the relationship of learning and social change, it had nothing to do with Highlander [the Highlander education center in Tennessee]. It was years earlier when I was debating with myself this whole idea of neutrality. Academicians, politicians, all the people that are supposed to be guiding this country say you've got to be neutral. As soon as I started looking at that word *neutral* and what it meant, it became very obvious to me there can be no such thing as neutrality. It's a code word for the existing system. It has nothing to do with anything but agreeing to what is and will always be—that's what neutrality is. *Neutrality is just following the crowd.*

> Neutrality is just being what the system asks us to be. Neutrality, in other words, was an immoral act. I was thinking in religious terms then. It was to me a refusal to oppose injustice or to take sides that are unpopular. It's an excuse, in other words. So I discarded the word neutrality before I even started thinking much about educational ideas. Of course, when I got more into thinking about educational ideas and about changing society, it became more and more obvious that you've got to take sides. You need to know why you take sides; you should be able to justify it. (Horton and Freire, 1990, 171)

Thomas Popkewitz (1981) maintains that educational research expresses the researcher's interests in at least two important ways:

1. The research we undertake reflects our view of sociopolitical values. Our research allows us to reconcile what we see as social contradiction and to ponder the consequences of the actions of institutions. For example, we may see a class-stratified society beset by problems resulting from the existence of a so-called permanent underclass. We want to know how the arrangement of educational institutions affects this situation. Our research questions and the manner in which we approach our study have been shaped by our value orientations.
2. Since scientific research (especially quantitative research) holds such a high status in the society, many individuals promote the belief that educational problems can be solved only through the application of rigorous science. Thus, solutions that emerge from community participation and democratic negotiation are dismissed—society has come to rely on the cult of the expert, those social scientists with precise, dispassionate answers to technical problems.

When researchers fail to note the existence of this omnipresent value dimension, Kenneth Howe (1985) contends, unpleasant outcomes typically result:

1. The research will be useless as information that informs practical action. Value judgments are inseparable from educational descriptions because of the relationship between educational research and educational practice. If researchers do not allow values to serve as a link between research and practice, educational inquiry will be irrelevant to what teachers and administrators actually do. In other words, the relationship between what we know and how we act upon the knowledge is problematic. Values inform not only what we claim to know but the actions that we take as a result of the knowledge as well.
2. Value-free research will be insufficient. If research in the field is not grounded upon explicitly

stated values that are open to evaluation, little benefit will ever be derived from such research. Thus, energy and resources will have been wasted.

3. Value-free research holds the potential to produce harmful results. When research purports to be value free but covertly promotes specific values, various groups and individuals are rendered quite vulnerable. Students who are culturally different may be labeled emotionally disturbed, young girls and boys who attempt to transcend gender restrictions may be seen as maladjusted, or thoughtful young people with intelligent questions about social convention may be labeled as troublemakers. Power's ability to dominate hides in the shadows of knowledge producers' claim to neutrality and objectivity.

Obviously, values in social knowledge production affect human beings in very concrete ways. If the values of research are typically hidden, then the justifications for the educational politics that are based on them are also concealed. When such restrictions are out of sight, teachers have only a restricted view of why they do the things that they do. An analysis of the historical forces that have structured values is an integral part of a democratic education. As we know, research is never a neutral means to a particular end. Research and its methodology grow out of the values of a particular worldview. This particular worldview, this paradigm, determines what constitutes legitimate research or an acceptable way of thinking. Even though positivistic, instrumentally rational research models have been challenged in some academic settings, they still dominate the mind-sets of many elementary and secondary schools. Emerging from business and military sources, contemporary manifestations of positivistic research inject the values of business management and the military into the life of the school. Here is where phenomenological, semiotic, and ethnographic forms of research become so important to the democratic teacher. They provide the tools with which we reveal the forces that make schools what they are, that tacitly construct the goals of education (Orteza, 1988; Cherryholmes, 1988).

Why do social and educational researchers use particular words, metaphors, and models when they design their inquiry, interpret it, and suggest policies based on it? Their research language reflects the effects of the influence of power in the larger society. Power, as Michel Foucault has argued, has served to censor, exclude, block, and repress like a great superego; but, he continues, it also serves to produce knowledge, creating effects at the level of consciousness construction. As a censor in educational research, power serves to limit what constitutes a legitimate question, excluding "dangerous" investigations such as explorations of how class factors affect student performances in school. As a producer in social and educational re-

search, power serves to reward particular ways of seeing and particular activities. For example, educational researchers who desire success in the field learn and follow particular research norms that allow them the rewards of funded grants and promotions based on scholarly productivity. The way different research orientations draw boundaries between what is acceptable and what is not constitutes the ideological dimension of the act of inquiry (Cherryholmes, 1988). Here, power is at work, promoting particular views of educational excellence and educational failure—often around race and class demarcations.

As democratic teachers, we make a mistake when we assume that this power is always consciously exercised by a cabal of conspirators seeking to control the educational world. Much of the time, the ideological construction of consciousness emanating from sources of power does not take place at the level of conscious intention. For example, positivistic educational researchers most of the time do not seek to design research that results in the perpetuation of business and military values in school practices. School administrators do not typically seek to use educational research that represses ethical considerations and questions of justice in their efforts to run their schools. And teachers most of the time certainly do not consciously attempt to suppress their students' ability to think at a more critical level, nor do they try to punish the underprivileged or reward the privileged. But all of these unfortunate things happen, and most of the time we have no clue why. We don't catch on because we don't understand the subtle dimensions of power reproduction, that is, how codes, symbols, and signs subtly construct our worldviews. As teachers who are researchers, we begin to see how educational research produced by such subtle forces legitimizes particular values and delegitimizes others, and we begin to expose the false neutrality of technical standards and the ways particular students are hurt by this erasure of power interests.

Emphasis on Consciousness Even Though It Is Hard to Measure Empirically: William Pinar's Currere

This point in our delineation of an epistemology of complexity is an extension of the above subsection "Consciousness Is a Social Construction." We begin with this assumption and extend it by arguing that even though consciousness does not lend itself to positivistic quantitative measurement, it still is the most important domain in the educational process. The behaviorist psychologist B.F. Skinner was so disturbed by the positivistic immeasurability of consciousness that he simply proclaimed that it didn't exist. Skinner was the perfect example of a modernist positivist, and his pronouncement about consciousness is quite revealing for democratic teachers guided by standards of complexity: even though consciousness is the domain that may best express our humanness, if it didn't lend itself to positivist methods then it was nonexistent. Skinner's pronounce-

ment once again illustrates the way the world is socially constructed by the hidden power of our epistemological assumptions. The existence of consciousness was not as important in Skinner's formulation as the framework he used to understand reality.

Consciousness is obviously an essential part of what it means to be human, many analysts, including the phenomenolgists, have argued, and should be studied if we are ever to gain significant insight into the affairs of human beings. However, the study of consciousness, phenomenologists warn, is limited by two important factors: (1) consciousness is not an object that is similar to the other objects of nature; and (2) there are aspects of consciousness that cannot be studied via traditional quantitative methods of science. Ever fascinated with the content of elusive consciousness, therefore, phenomenologists cannot be concerned with the empirical question of what is or is not real. They simply begin with the nature of consciousness—whatever that nature might be—as significant data to be studied. At the very least, the study of human consciousness is different from the study of nature in that humans—unlike rocks, acids, and atoms—are meaning-making entities. This meaning-making or thinking process will shape humans' behavior in ways that differentiate people from rocks. If you kick a rock, for example, you know pretty well how it will react. Kicking a human, however, will elicit a wide variety of actions depending on the human kicked and the context in which he or she is kicked. Such a human response does not lend itself to precise measurement and predictability.

Phenomenology attempts to render problematic all presuppositions about the nature of its own activity, the object being investigated, and the method appropriate to this kind of inquiry (Husserl, 1970). The attempt to rid oneself of as many presuppositions as possible grants phenomenology the prospect of unmasking hidden assumptions about the nature of reality. Phenomenologists also attempt to view consciousness as intentional, meaning that it is directed toward a specific object. Another way of expressing this thought is that consciousness is consciousness of something. Thus, phenomenologists think that it is absurd to divide reality (or the research process) into subjects and objects. The two cannot be separated, and the attempt to do so distorts reality (Steward and Mickunas, 1974; Schwandt, 2000).

Thus, an important concept about knowledge production that holds profound implications for the scholarly insights of complex educators emerges in this context. As these educators attempt to evaluate, produce, and teach information, they begin to differentiate between research that does and does not understand the special status of human consciousness and the epistemological insights it necessitates. Democratic teachers operating in the zone of complexity are suspicious of data that are produced by experts who don't grasp the difference between human beings and sedimentary rocks.

They are also suspicious of the content standards grounded in such information. Phenomenology may provide one of the best methodological pathways for educators to grasp the specifics of this epistemological problem. It is obsessed with the effort to discern the meaning individuals ascribe to their lived worlds. Phenomenological understanding involves putting oneself in place of another person and attempting to re-create his or her feelings in oneself. Using this empathetic function, phenomenology provides a much thicker, deeper, and useful form of social knowledge than the Cartesian attempt to record the frequency of particular behaviors.

It is easy to see the impact of phenomenology on modes of research such as ethnography. When researchers ask not about the absolute meaning of a work of art but instead of its meaning for a certain individual or a group, they move research in new directions. The qualitative knowledge that emerges when researchers ask about and attempt to interpret the meanings that particular persons give to particular phenomena allows us new understandings and unique perspectives on social events and the human beings who participate in them. The human realm of intersubjective meaning becomes accessible in a way never imagined by positivistic researchers, as scholars interrogate the conventions, forms, and codes of everyday life (J. Smith, 1983; Donmoyer, 1985; Soltis, 1984; Denzin and Lincoln, 2000; Kincheloe and McLaren, 2000).

Phenomenologically produced understanding of the way individuals construe their world and their place in it is one way in which intersubjective knowledge leads us to new dimensions of seeing social experience. In educational inquiry, such ways of seeing allow educators to understand how teachers and students give meaning to their lived worlds in light of social and cultural forms that they reflect and help produce. Indeed, such forms of inquiry facilitate our understanding of the often hidden and always ambiguous process by which education initiates us into our culture (Carspecken, 1996, 1999). Positivism and the technical content standards it justifies are totally uninterested in these dynamics. "Why should we bother with phenome-what-ya-may-call-it? All we need to do is teach students the truth."

Phenomenology is a qualitative alternative to the epistemology of positivism. It presents in a sense a starting point for a democratic teacher in standards of complexity to move beyond the positivistic, reductionistic mindset that too often runs the schools, perpetuates teacher deskilling, and makes schools bad workplaces. Using our democratic system of meaning and its concern with understanding and acting justly in the sociopolitical world, we embrace a phenomenology of complexity that helps us abandon the role of teacher as a deskilled implementer of administrative policy; no longer do we see research as a part of a process of explaining, controlling, and predicting. Phenomenology teaches us that we cannot understand an edu-

cational act without understanding the framework, the context within which teachers, students, and administrators give meaning to their thoughts, feelings, and actions. Our *critical* phenomenology takes us one step *beyond* traditional conceptions of phenomenology by adding our concern with power to the mix. We must question the power relations, the ideological forces that shape that framework, the context that helps construct our thoughts, feelings, and actions (Fowler, 1984; Wilson, 1977; Kincheloe and McLaren, 2000). We are comfortable on this difficult terrain because ours is an epistemology that understands and seeks to deal with the complexity of the world.

Phenomenology teaches scholarly teachers to abandon positivistic, deductive devices such as prior hypothesis formation that restricts researchers by directing their attention to often irrelevant variables. As with qualitative forms of research in general, the focus of our study in phenomenology emerges as the inquiry progresses. We focus on the perceptions of individuals, seeking the insider's perspective. Of course, at the critical level, we search for the various ways this perspective is constructed by larger social forces. To the critical phenomenologist, the most influential reality of the many realities with which humans must deal is human perception. This reality is more important than any so-called objective reality because people act on what they perceive—perceptions have consequences, they move events, they shape lives. Consider how these ideas affect teaching and knowledge work, for example. While the positivist seeks objective, factual, verifiable portrayals of reality, phenomenologists will seek to understand the participants' comprehension of what is happening and how such perceptions affect their lives. Because they hold such different goals, research data derived via the two approaches will present quite different perspectives on the world, the school (Fetterman, 1988). They will construct profoundly different curricula. Which one will you teach? I don't think a teacher can stay neutral here.

Certainly, one of the most important thinkers of the late twentieth and early twenty-first centuries about these issues is educator William Pinar. His work in this epistemological domain is essential knowledge for democratic teachers. In his attempt to develop a practical method of analyzing the educational experience of the individual, Pinar takes this phenomenological orientation and fuses it with psychoanalysis and aesthetics. He calls his analytical form *currere* (the Latin root of the word *curriculum*, meaning the investigation of the nature of the individual experience of the public). We are returned once again to the inner psychological world (the *Lebenswelt*) and to its relationship to the educational experience. A traditional criticism of much of the theoretical work in education is that it is not connected with the everyday experiences of teachers and students. Pinar's use of the concept of *currere* helps bring about the synthesis of theorizing and *Lebenswelt* with all the benefits that are to be accrued from

such a fusion (Pinar, 1975, 1994, 1999).

Pinar claims that in *currere*-based research and teaching, meaning is typically derived from the analysis of the relationship between signs and experience. Taking his cue from Maxine Greene (1975), Pinar contends that the quest for an understanding of experience impels researchers to tap their own subjectivity so that common sense may be transcended—that is, we must go beyond what we take for granted. As knowledge workers in schools, we must ask questions such as: What is involved in moving beyond the commonsense world? How does one initiate the process? What possible benefits are to be derived? Are there examples of other individuals who have accomplished such a complex move, and what did they gain? How do such attempts affect what we know in education? It is through such questions that we approach the *Lebenswelt*, or, in Pinar's words, "that realm of the *Lebenswelt* associated with *currere*" (Pinar, 1975, 396).

As we engage in this phenomenological bracketing of experience in our own lives, Pinar argues that we are better prepared as researchers and teachers to apprehend the contents of consciousness as they appear to us in educational contexts. The liberation that results involves a freedom from modes of perception that reflect cultural conditioning and result in inauthentic and counterdemocratic behavior. We must loosen our identification with the contents of consciousness so that we gain some critical distance from them—a metaperspective. From our new vantage point, we may be able to see those psychic realms that are formed by conditioning and unconscious adherence to repressive social convention. Using *currere*, teachers in the complexity zone demystify the ideological construction of their own and their students' consciousnesses. Empowered with this ability, teachers in schools shaped by standards of complexity are able to move beyond pseudoneutrality and help students examine and participate in the great issues of our time.

Once we have embarked on our quest to understand *currere*, Pinar tells us, we will uncover a great diversity of formats and sources. Teachers will gain great insight into the consciousnesses of themselves and their students. The educational *Lebenswelt* comes in a variety of packages—one package may contain historical information, another the insights of free association, another the contemplations of specific literary passages, and still another ostensibly insignificant slices of school life. Both cognitive and intuitive insights (or a creative synthesis of the two) will inform our perception of *currere.*

At first, Pinar concludes, the information derived from our attempt to examine *currere* may be idiosyncratic. Eventually, however, our examinations will uncover aspects of a collective or transpersonal realm of educational experience. In other words, once we transcend the unique details of an individual's biography, we may unlock the doors to a secret room where fun-

damental structures of human experience have been hidden from view. Such structures may, as phenomenologists have anticipated (Merleau-Ponty, 1962), appear very different when viewed at the stratum of individual personality but may be very similar when analyzed at the level of their roots. The understanding of these basic structures and their relationship to the sociopolitical world and thus their impact on education may be one of the most important outcomes of phenomenological research applied to the educational *Lebenswelt* (Pinar, 1975, 1994; Pinar et al., 1995). Instead of just throwing out fragments of data and hoping students commit them to memory, teachers using *currere* in standards of complexity help students make meanings that are connected to their individual lives. Education can never be the same.

Concern with Logic and Emotion and Feeling in the Process of Knowing: The Importance of Empathy

With a little reflection, we realize that in our everyday life we often speak of different epistemologies, different ways of knowing, without even thinking about it. We all have some idea of a positivist epistemology when we say that science proves that nicotine causes cancer in lab rats. But most of us make counter-Cartesian epistemological knowledge claims as well. Consider for instance: "I knew when I met him that he couldn't be trusted"—intuitive knowing; "My heart told me I loved her"—emotional knowing; "My 'gay-dar' went off the screen when she walked in the room"—empathetic knowing; "I know there is more to life than meets the eye. I plan to enjoy the afterlife immensely"—spiritual knowing; "Don't tell me there's no God. I know Jesus is my personal savior"—divine knowing; "If I have to explain rap music to you, you'll never understand it"—cultural knowing. An epistemology of complexity recognizes that there are many ways of knowing, some more appropriate in particular situations than others. For example, I did not use a positivistic way of knowing to discern whether or not to marry my wife, Shirley. I relied much more on an emotional form of knowledge, a feeling. If I ever have to have my appendix removed, I hope my surgeon uses a different epistemological perspective as she decides where to make her incision—you get the idea. The epistemological concept I want to get across here is that both logical and emotional ways of knowing are important in schools shaped by standards of complexity. I will lay out how educators can use both epistemological orientations, sometimes together, sometimes separately, for emancipatory effect.

Feminist educator Madeline Grumet (1988) extends our understanding of the epistemologically complex attempt to transcend sole reliance of logic (logocentrism) by connecting with an epistemology of the body, of feeling. Science, she argues, has been emeshed in a male-dominated snare of logical abstraction. Grumet has sought new methods of inquiry that

are capable of drawing the body and feeling into the public conversation about education. Making use of qualitative research methodologies such as history, theater, autobiography, and phenomenology, she confronts androcentric abstraction with the uncertainty, specificity, and contradiction of the private, the corporeal, the feminine. From the perspective of the guardians of the positivistic tradition, such epistemological confrontations constitute overt subversion. After exposure to such concepts, inquiry can no longer be viewed as a cold, rational process. As feeling, empathy, and the body are injected into the research and teaching process, as the distinction between knower and known is blurred, as truth is viewed as a *process* of construction in which knowers play an active role, passion is injected into inquiry. Democratic teachers see themselves as passionate scholars who connect themselves emotionally to that which they are seeking to know, understand, and teach.

Several decades ago, Michael Polanyi wrote about personal knowledge—that is, a way of knowing that involves the passionate participation of the knower in the act of knowing. Guided by such notions, complex educators embrace a passionate scholarship, a reconceptualized science that is grounded upon and motivated by our values and solidarities (Belecky et al., 1986). Passionate knowers use the self as an instrument of understanding, searching, as Madeline Grumet has, for new methods to sophisticate the way the self is used in research. Søren Kierkegaard anticipated this notion of feminist passion, arguing in the first half of the nineteenth century that there *is* an intimate connection between commitment and knowing. Subjectivity, he maintained, is not simply arbitrary; instead, it reflects the most profound connection between an individual thinker and the world.

As inquirers grow passionate about what they know, they develop a deeper relationship with themselves. Such a relationship produces a self-knowledge that initiates a synergistic cycle—a cycle that grants them more insight into the issue being investigated. Soon, Kierkegaard argued, a form of personal knowledge is developed that orients the mind to see social life as more than a set of fixed laws. Social life is better characterized as a process of being, a dialectic where the knower's personal participation in events and the emotional insight gained from such participation move us to a new dimension of knowing. Not only did Kierkegaard anticipate the concept of passionate knowing and Polanyi's personal knowledge, but he also foreshadowed a post-Piagetian, postformal mode of thinking; produced knowledge; and developed curricula that ground our notion of a rigorous education (Reinharz, 1979; Kincheloe, Steinberg, and Villaverde, 1999).

Another precursor of the notion of passionate scholarship that shapes our rigorous education (and should serve to humble Eurocentric academicians) concerns the ways that indigenous peoples have defined knowing. Note the similarities of Afrocentric and

American Indian ways of knowing with the counterpositivistic perspectives of Kierkegaard, Polanyi, and advocates of an epistemology of complexity. To such peoples, reality has never been dichotomized into spiritual and material segments. Self-knowledge lays the foundation for all knowledge in the African and Native American epistemologies. Great importance has traditionally been placed on interpersonal relationships (solidarity), and a connected logic has moved these traditions to appreciate the continuum of spirit and matter, individual and world.

Indeed, indigenous ways of knowing and the European positivistic tradition come into direct conflict over the epistemological issues of mind and body, individuals and nature, self and other, spirit and matter, and knower and known—a conflict that has generated serious historical consequences. It is only in the past thirty years that some Eurocentric people have come to recognize the epistemological sophistication of indigenous ways of seeing that discern a unity in all things and a connected spiritual energy embedded in both human and natural elements. Thus, that deemed primitive by traditional Western scholars becomes, from the perspective of democratic teachers, a valuable source of insight into our attempt to extend an emancipatory education (Myers, 1987; Nyang and Vandi, 1980; Semali and Kincheloe, 1999).

The ability to create a new form of thinking that brings together logic and emotion and the human capacity for empathy is dependent on our understanding of the forces that shape the self—a theme that emerges time and again in our quest for a democratic pedagogy and rigorous education. Knowledge of self allows researchers to understand how social forces and research conventions shape their definitions of knowledge, of inquiry, of effective educational practice. Knowledge of the self allows them the consciousness to choose between epistemologies that depersonalize the process of knowing in hopes of gaining certainty and producing pure objective knowledge and research orientations that assert that since the mind of the observer is always involved, it should be utilized as a valuable tool. Humans possess a tacit knowledge that can be drawn upon to make sense of social and educational situations. Such tacit, intuitive knowledge guides researchers as they conduct interviews, make observations, document analyses, and so on. A primary purpose of the democratic form of knowledge work is to connect teachers to the nature and formation of such tacit knowing and, in turn, to help them learn how to employ it for maximum benefit.

Can't Separate Knower from Known—Thus, the Questions the Knower Asks Shape What Can Be Known

Throughout this discussion of an epistemology of complexity and what it means for democratic teachers, I have alluded to the inseparability of the

knower and the known. This point is a brief extension of this basic epistemological understanding and its highlighting of the profound importance of question formulation in shaping the knowledge we produce. Simply put, there is no knowledge without a knower. As a living being, a perceiving instrument, the *perspective* of the knowledge producer must be granted the same seriousness of attention as is typically accorded the design of research, the research methods in traditional forms of inquiry (Lowe, 1982; Gordon, Miller, and Rollock, 1990). This understanding should be a central feature of every rigorous classroom.

Like knowledge, the knower also belongs to a particular, ever changing historical world. The human being as a part of history is a reflective subject, meaning, an entity who is conscious of the constant interaction between humans and their world. Such a critically conscious knowledge worker–teacher recognizes that all knowledge is a fusion of subject and object. In other words, the knower personally participates in all acts of understanding. Moreover, the world in general, the educational world in particular, is not an objective structure, but a constructed, dynamic interaction of men and women organized and shaped by their race, class, gender, and countless other features. Thus, it is impossible from the perspective of an epistemology of complexity to conceive knowledge without thinking of the knower (Reinharz, 1979; Lowe, 1982).

This separation of the knower and the known is a cardinal tenet of the positivist epistemology and the educational standards it supports. The impact of this "way of seeing" on the theory and practice of Western science and education has been profound. As discussed elsewhere in the encyclopedia, René Descartes's analytical method of reasoning, often termed *reductionism*, has formed the foundation of modern scientific research. Cartesian reductionism asserts that all aspects of complex phenomena can be best appreciated by reducing them to their constituent parts and then piecing these elements together according to causal laws (Mahoney and Lyddon, 1988). This is the opposite of an epistemology of complexity.

The educational implications of this epistemological understanding are compelling. In particular, such an epistemological awareness highlights the importance of the questions an educator might ask. What knowledge is produced in the teaching domains depends on the questions asked about the topics at hand. Democratic educators engage themselves and their students in the process of revealing the questions and the values that generate them that stand in the shadows of all data. This ability is necessary to the formulation of a complex, rigorous, and democratic education as it helps unlock the secrets to why a curriculum contains this information and not other types of knowledge.

Such an epistemological analysis forces us to move beyond positivism's concern with simply answering unanalyzed questions or solving pre-

arranged, structured problems. This question-formulating, problem-posing stage, Albert Einstein argued, is more important than the answer to the question or the solution to the problem. Critical democratic teachers are question analysts and problem posers. When epistemologically naive teachers set up a problem, they select and name those things they will notice. Thus, questioning is a form of world making—how we select the problems and construct our worlds is based on the values we employ. Without an epistemological consciousness, teachers and administrators learn how to construct schools but not how to determine what types of schools to construct. In other words, teachers, school leaders, and teacher educators need to realize that school and classroom problems are not generic or innate. They are constructed and uncovered by insightful educators who possess the ability to ask questions never before asked, questions that lead to innovations that promote student insight, sophisticated thinking, and social justice (Schon, 1987; Ponzio, 1985).

If the genius of, say, an Einstein revolved around his ability to see problems in the physical universe that no one else had ever seen, then the genius of a teacher in standards of complexity revolves around his or her ability to see physical, psychological, social, and educational problems that no one else has ever seen (Kincheloe, Steinberg, and Tippins, 1999). The application of such skills moves education to a level unimagined by teachers trapped within the positivistic tradition. Not only is such an educational orientation grounded in a democratic conception of teacher empowerment, but it also serves to expose previously hidden forces that shape the consequences of the educational process. It is a testimony to what can happen, what can be revealed, when teachers transcend the limitations of positivistic definitions of research and explore the relationships between the knower and the known.

With these understandings in mind, the very source of the knowledge found in classroom texts and curriculum guides involves the asking of value-laden questions. Julie Ellis (1998) writes that in her classroom, she assigns interpretive exercises where students attempt to make sense of the texts they have encountered in class. In this context, she asks students to identify the questions that drive their interpretations and the origins of such inquiries. In this way, students can understand that questions produce knowledge, values produce questions, and that one's location in the web of reality produces the values we hold. Such recognitions provide students and teachers a far more sophisticated view of why individuals (themselves included) believe what they do, why the world operates the way it does, and what they might do to bring about democratic and egalitarian change. This is one example of a rigorous classroom in schools shaped by standards of complexity. Such activities can be adapted for use even in early elementary education.

Starting with questions such as: Why does this exist? Or more specifically, why does homelessness exist? Or what can be done to improve the situation? teachers engage students in a reflective awareness of their own questioning processes. Being exposed to that which is different from our common experiences—different cultural understandings and epistemologies, for example—may be central to our attempt to raise new questions, to become the Einsteins of education. Paulo Freire helps us in this context not only as he teaches how to expose the questions hidden in all knowledge forms but also as he demonstrates his ability to formulate critical democratic questions concerning information with which we are confronted. When we are aware of our values and how they help shape our questions, we are much better equipped to make sense of an incoherent body of data. We become in this context interpreters of the social world who understand the roots of our own and other people's explanations of human affairs (Freire and Faundez, 1989). What dramatic cognitive leaps such understandings catalyze.

Our View of the World Is Grounded on the Perspectives of Those Who Have Suffered as the Result of Existing Arrangements

Often those who produce knowledge about the world come from the dominant culture—academics infrequently base their views of reality on the viewpoints of marginalized and excluded individuals. Because of this tendency, scholars who validate the views of the marginalized have in essence encountered "difference." And as we have contended, our consciousness is raised when we take difference seriously. Valuing the productive power of difference, democratic teachers take a cue from liberation theologians in Latin America and begin their analyses of social and educational institutions by listening to those who have suffered most as a result of their existence. This understanding constructs a key distinction between technical standards and standards of complexity.

Derived from dangerous memories of history that have been suppressed and information that has been disqualified by educational gatekeepers, the perspectives of those who have suffered or "subjugated knowledge" play a central role in an epistemology of complexity. Through the conscious cultivation of these low-ranking forms of knowledge, alternative democratic and emancipatory visions of society, politics, education, and cognition are possible. In a democratic curriculum, subjugated knowledge is not passed along as a new canon but becomes a living body of knowledge open to different interpretations. Viewed in its relationship to the traditional curriculum, subjugated knowledge is employed as a constellation of concepts that challenges the invisible social and cultural assumptions embedded in all aspects of schooling and knowledge production. The subjugated knowledge of African Americans, Native Americans, working-class people,

women, and many other groups has contested the dominant culture's view of reality.

Confronted with subjugated knowledge, individuals from white mainstream culture begin to appreciate the fact that there are multiple perspectives on all issues. Indeed, they begin to realize that textbooks discard data about unpopular viewpoints and information produced by marginalized groups. Curricula that include subjugated perspectives teach a lesson on the complexities of knowledge production and how this process shapes our view of ourselves and the world around us. The curriculum cannot stay the same if we take the knowledge of working-class men and women seriously; if we get beyond the rosy, romanticized picture of immigration to the United States and document the traumatic stories of the immigrants; if we seek out women's perspectives on the evolution of Western culture; or if we study the culture that enslaved Africans brought to the New World.

The white cultural power blocs that dominate North America in the first decade of the twenty-first century seem oblivious to the need to listen to marginalized people and take their knowledge seriously. Western power wielders are not good at listening to information that does not seem to contribute to hegemony—their ability to win the consent of the subjugated to their governance. Knowledge that emerges from and serves the purposes of the subjugated is often erased by making it appear dangerous and pathological to other citizens. Drawing up work within the discipline of cultural studies that seeks to reverse conditions of oppression, subjugated knowledge seeks new ways of validating the importance and relevance of divergent voices. Technical standards, it must be pointed out, want not an inclusive curriculum of multiple perspectives but information to be accepted as truth with no dissenting voices—an authoritarian curriculum. Subjugated viewpoints are excluded not merely from schoolrooms and curriculum guides, but from other sites of knowledge production, such as popular culture, as well. Having become a major pedagogical force in Western societies over the past few decades, the popular culture "curriculum" is monitored for emancipatory expressions of subjugated knowledge. Though not always successful, power wielders attempt to neutralize the subjugated forms of knowledge that find their way into TV, the movies, popular music, the Internet, and other popular cultural sites (Dion-Buffalo and Mohawk, 1992; J. Fiske, 1993; Mullin, 1994; Nieto, 1996; McLaren and Morris, 1997).

Thus, teachers devoted to the value of subjugated knowledge uncover those dangerous memories that are involved in reconstructing the process through which the consciousness of various groups and individuals has come to be constructed. Such an awareness frees teachers, students, and other individuals to claim an identity apart from the one forced upon them. Indeed, identity is constructed when submerged memories are aroused—in

other words, confrontation with dangerous memory changes our perceptions of the forces that shape us, which in turn moves us to redefine our worldviews, our way of seeing. The oppressive forces that shape us have formed the identities of both the powerful and the exploited. Without an analysis of this process, we will never understand why students succeed or fail in school; we will be forever blind to the tacit ideological forces that construct student perceptions of school and the impact such perceptions have on their school experiences. Such blindness restricts our view of our own and other people's perception of their place in history, in the web of reality. When history is erased and decontextualized, teachers, students, workers, and other citizens are rendered vulnerable to the myths employed to perpetuate social domination.

When we study social domination along with subjugated histories and cultures such as those of women and non-Western societies, we are able to expose the socially constructed nature of Western science, the logic implicit within it, and the curriculum derived from it that often accepts ecological destruction and the exploitation of nature. Science is not the only area where an epistemology of complexity searches for alternative subjugated knowledge, for such information exists around each axis of domination. In the domain of gender, for example, critical analysts value ways of knowing that have traditionally been viewed as feminine. Such forms of knowledge expose the hidden gender assumptions as male centered, as they provide alternative ways of looking at the sociocultural world. Ways of understanding and functioning in the world employed by disabled people, such as the use of sign language, are forms of subjugated knowledge that can be taught in a multidimensional, complex curriculum. Also important in this context is gay and lesbian subjugated knowledge that provides significant insight into the construction of sexual preference, sexual desire, and the cultural dynamics of gender-role production. Both homosexually oriented and heterosexually oriented individuals can gain insight into the production of their identities from a confrontation with such subjugated knowledge.

Because of their race, class, and gender positions, many educators are insulated from the benefits of the double consciousness of the marginalized and are estranged from a visceral appreciation of suffering. Until I was placed in a lower-track set of courses as a high school student—I was not viewed as a good student—I never understood what it felt like to be viewed as "slow." Such an experience alerted me to the pain of my fellow slow students and provided me with a deeper, lived understanding of students in such a position. Such empathy has, in my opinion, served as one of the most important insights I have brought to my career as an educator. Such awareness is a subjugated knowledge, a way of seeing that has been ignored in too many educational situations, technical standards in particular.

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and its sanctioning of the suffering of various individuals and groups such as low-track students are often viewed as acceptable in the curriculum of technical standards. Educational leaders who often come from dominant groups don't typically challenge the ways of seeing that justify the prevailing social and educational system. What lived experiences would create a cognitive dissonance within the minds of such leaders that would make them uncomfortable with the status quo? The oppressed—though often induced by the mechanisms of power to accept injustice and to deny their own oppression—often use their pain as a motivation to find out what is not right and to discover alternate ways of constructing social and educational reality. Standards of complexity draw upon this epistemological dynamic and make it a central aspect of their efforts to develop curriculum. The benefits of such an educational orientation are dramatic as students gain the cognitive benefits of seeing the world from different angles.

There Are Multiple Realities—Realities Constructed by Our Location in the Web of Reality

An epistemology of complexity teaches us that the reality we construct depends on our location (or placement) in the web of reality. Cartesian reductionism privileges a single, scientifically validated vantage point from which we can perceive "the one true reality." With different locations in the web of reality come different perspectives on the world around us (Lincoln and Guba, 1985; Denzin and Lincoln, 2000; Briggs and Peat, 1989; Slaughter, 1989). Educators who understand an epistemology of complexity understand that reality, schools, and texts of all types hold more within them to be discovered than first impressions sometimes reveal. In this sense, different frames of reference produce multiple interpretations and multiple realities. Contrary to the problem solving of positivism, an epistemology of complexity sees the mundane as multiplex and continuously unfolding (Greene, 1988, 1995; Haggerson, 2000).

An epistemology of complexity constructs a distancing from reality that allows an observer diverse frames of reference. The distancing may range from the vastly distant astronauts looking at Earth from the Moon, to the very close, as in Georgia O'Keeffe viewing a flower. At the same time, this complex epistemological perspective values the emotional intimacy of feminist connectedness that allows empathetic passion to draw knower and known together. In the multiplex vision of reality, linearity often gives way to simultaneity, as texts become a kaleidoscope of images filled with signs and signifiers to be examined. William Carlos Williams illustrated such complex qualities in the early twentieth century as he depicted multiple, simultaneous images and frames of reference in a verbal manner. Williams attempted to poetically interpret Marcel Duchamp's *Nude Descending a Staircase* with its simultane-

ity serving as a model for what might be labeled *cognitive cubism*. Democratic teachers in standards of complexity use such ideas to extend the holographic nature of their own and their students' memories, as they create situations where students come to view reality from as many frames of reference as possible. The single angle of the traditional photograph is replaced by the multiple angles of the holographic photograph (Dobrin, 1987; Mandell, 1987; Talbot, 1986, 1991).

Armed with their cognitive cubism, democratic teachers come to understand that the models of teaching they have been taught, the definitions of inquiry with which they have been supplied, the angle from which they have been instructed to view intelligence, and the modes of learning that shape what they perceive to be sophisticated thinking all represent a particular vantage point in the web of reality. Like reality itself, schools and classrooms are complex matrices of interactions, codes, and signifiers in which both students and teachers are interlaced. Just as epistemological complexity asserts that there is no single, privileged way to see the world, there is no one way of seeing the classroom, intelligence, the purpose of education, or teacher or pupil success. Once teachers escape the entrapment of the Cartesian-Newtonian way of seeing, they come to value and thus pursue new frames of reference in regard to their students, classrooms, and workplaces.

In this context of complexity with its multiple frames of reference, the Cartesian-Newtonian quest for a final certainty about the knowledge we produce and consume seems limited and parochial. If we have learned anything in recent years, it is that our ideas about the world change and that they will continue to change in the coming years. The chance of arriving at some juncture in human history where further research will become unnecessary because we will understand the nature of reality—as many social scientists and psychologists predicted rather recently—is slim. There is unlikely to be any single research strategy or theoretical view that will allow us to grasp the whole of reality. In this context, the multiple perspectives of an epistemology of complexity expose the tyranny of technical standards' one-dimensional, authoritarian view of the world.

Given such prospects, an epistemology of complexity tells us that knowledge workers should welcome a proliferation of research paradigms and take advantage of the new angles they provide for viewing the world. This epistemological pluralism or eclecticism will take our understanding of the world to previously unexplored dimensions. Those who accept pluralism will recognize that divergent theoretical systems and research paradigms designate different phenomena as data and that what we consider reality cannot be separated from the methodological procedures employed to produce those conclusions (Eisner, 1984). The path to such eclecticism, however, is beset with obstacles. Indeed, philosophers of science speak of

a crisis in inquiry. It is a crisis with roots in two attempts: (1) the fight to free science from the positivistic quest for certainty; and (2) the struggle by those freed from the first quest to figure out what to do with their freedom—in other words, how to cope with the choices presented by accepting multiple frames of reference.

Evidence of the crisis is manifested by an inability to agree upon standard criteria for judging the progress of a field of study. With so many frames of reference available, many scientists find it increasingly difficult to make evaluations across the wide range of activities undertaken in the name of their disciplines. Maybe even more disconcerting is the inability of knowledge producers to understand the assumptions, aims, and languages of one another. Yet, what is the alternative? The attempt to bond our studies in a common language with shared assumptions takes us back to a positivistic quest for a universally understood language of research—an Esperanto of inquiry.

Shared aims in knowledge production, advocates of an epistemology of complexity maintain, stifle our creativity and interpretive possibility. Much of the great physical and social scientific research of the past seemed irrelevant to the patriarchs of the disciplines when it was first encountered. In the most healthy scientific situation, there is generally little consensus about what the next step should involve, which method should be utilized to pursue the next step, or how exactly success should be measured. The price of our abandonment of the quest for certainty is untidy diversity, but the world itself (especially the educational world) is not all that neat (J. Smith, 1983; Eisner, 1984).

Thus, We Come to Understand Where We Are Located in the Web of Reality: Becoming Humble Knowledge Workers

From the previous point, we can appreciate that individuals cannot separate what they perceive from where they stand in the web of reality. By understanding an epistemology of complexity, educators can become more aware of where they stand in the web and how it shapes their views of world and self. These epistemological concepts lay the foundation for the concept of positionality. Positionality involves the notion that since our understanding of the world and ourselves is socially constructed, we must devote special attention to the differing ways individuals from diverse social backgrounds construct knowledge and make meaning.

Thus, depending on our location in the web with its diverse axes of power, we will designate what constitutes the most important information in the curriculum very differently. For example, when I read E.D. Hirsch's construction of what essential knowledge citizens should know, I never cease to be amazed at how his location as a white, upper-middle-class, American male shaped his choice of knowledge—it is predominantly made up of data about white, upper- and upper-

middle-class males from a Western heritage. I want Hirsch (and myself) to understand the ways his (and my) location in the web of reality shapes his (my) perspectives about such content standards.

An epistemology of complexity teaches us about the world's complicated weblike configuration of interacting forces. Knowledge producers, like all of us, are entangled in, not disengaged from, the web. As previously asserted, knower and known are inseparable—both a part of the web of reality. No one in this weblike configuration of the universe can achieve a godlike perspective—no one can totally escape the web and look back at it from afar. We all must confess our subjectivity; we must recognize our limited vantage point. To recognize how our particular view of the web shapes our conception of educational reality, we need to understand our historicity—our position in time and space. Positivist epistemology and the knowledge production it supports tend to ignore the way our historicity shapes our consciousness; as a result, our concept of the world is stripped of its complexity and reduced to a static, one-dimensional frame. Thus, the positivistic knowledge producer feels confident that he or she can make precise predictions, settle controversial questions once and for all, and ignore the complex, interactive process within which all social activity is grounded. From this positivistic perspective, linear mathematics controls the variables, eliminates extraneous influences, and paints a "realistic" Norman Rockwell portrait of education (Doll, 1989; Slaughter, 1989). In this context, advocates of technical standards confuse the painting with reality.

Because democratic teachers understand their limited view of the world from their locations in the web of reality, they embrace a new humility in their knowledge work. They claim new perspectives, not truth, when producing information about the social world. For example, democratic teachers avoid particular forms of patriarchal, positivistic knowledge production that promote a particular view of the world as simply right or wrong. Drawing upon feminist research methods, democratic teachers understand that our location in the web of reality undermines the possibility of an absolute pronouncement about physical scientific, mathematical, historical, social, or political "truth."

Thus, democratic teachers operating in standards of complexity always pause before announcing an interpretation. In a patriarchal culture, such a pause may not be viewed as a bow to complexity as much as it is perceived as a sign of weakness, an inability to "shoot from the hip" like John Wayne as researcher. Feminist analysts thus tend to avoid the either-or thinking that can serve as an obstacle to the complex epistemological ability to conceptualize multiple frames of reference, to imagine a variety of solutions to perplexing situations. Positivistic either-or thinking promotes less investigation of the "whys" in a physical scientific or sociopolitical situation; an

epistemology of complexity, always digging deeper, places great value on the asking of "why" questions. "Why" questions lead to ambiguity, uncertainty, and, one hopes, humility that shakes up the dominant epistemological terrain of certainty (Greene, 1988, 1995; Anderson, 1987).

As we confront the new electronic world with its globalization, exploding imagery, and cultural interchange, our epistemology of complexity with its self-reflection based on an awareness of where we are situated in the web of reality becomes extremely valuable. No longer are we comfortable with macho proclamations of our ability to totally comprehend reality. We begin to speak in terms of constructions of reality. With our awareness of the various information filters that are employed by the media and other power groups, we begin to understand the process by which things get constructed. As democratic teachers reject positivism's universal reason as the supreme form of knowing the sociopolitical world, they seek alternate forms of thinking and epistemological approaches that are historically and socially contingent, that are grounded in an awareness of what can be seen from particular locations in the web of reality. The view one gets of Manhattan standing in the canyons of Wall Street is very different from what one sees of the same island in an airplane making a low approach into JFK Airport. Both views are partial—just like all other perspectives on the city. There is no one correct point in the web from which we can see everything large and small about Manhattan. What is a "true" picture of Manhattan? Concurrently, what is a true picture of chemistry?

Understanding Where We Are Located in the Web of Reality, We Are Better Equipped to Produce Our Own Knowledge

As complex democratic teachers learn their location in the web of reality, understand the ways it affects them and other producers of knowledge, and appreciate the contingency of social information, they begin to grasp the need to become producers of their own knowledge. In positivist teacher-education programs, and the technical standards they support, teachers don't produce knowledge. James Garrison (1988) finds such a situation strange and remarkable. No wonder teachers are disempowered, Garrison argues; they are not even viewed as professionals. The knowledge they convey to students is on loan from the experts; it is not the property of the teachers and their students. Teachers as researchers audaciously claim the right to participate in the production of knowledge, while at the same time retaining their humility concerning the tentative, provisional nature of the knowledge. Standards of complexity cannot operate without scholarly teachers capable of conducting research and teaching such abilities to their students.

The production of new knowledge gleaned from the lived world of the students and the members of the com-

munity surrounding the school is very much a part of a critical, democratic effort to reconceive the role of education around a democratic system of meaning and an epistemology of complexity. As long as officially certified experts retain the power to determine what counts as knowledge, little educational reform is possible. Education will continue to be pushed and pulled every few years by fads moving schools in one direction or another. If we hold the power to produce our own knowledge, then we are empowered to reconstruct our own consciousness. The tyranny of expert-produced interpretations of traditions can be subverted and our futures can be reinvented along the lines of a critical epistemology of complexity.

This issue of knowledge control moves us into a direct confrontation with teacher power. We cannot maintain a view of students as democratic participants and teachers as disempowered technicians. More than sixty years ago, John Dewey argued that teachers must assume the power to assert their perspectives on matters of educational importance with the assurance that this judgment will affect what happens in schools. Present technicist models of teacher education do not accept this argument, often teaching novices not to seek empowerment, not to think in an independent manner. Indeed, the hidden curriculum of technicist teacher education and technical standards promotes a passive view of teachers; they are seen as rule followers who are rendered more "supervisable" with their standardized lesson-plan formats and their adaptation to technical evaluation plans. Such a reality teaches a hidden curriculum of disempowerment to students. Complex, democratic teachers, for their students' sake, must rebel against such totalitarianism, encourage their students to be uncomfortable with authoritarian pronouncements of truth in texts, and help them become researchers of multiple perspectives on any data confronted. Both teachers and students in standards of complexity become knowledge producers.

This ethic of teacher and student as researchers is central to the notion of rigorous educational reform promoted here. Our epistemology of complexity pushes this ethic even further, asserting that if we are serious about our work as agents of democracy, then we must help *all citizens* become researchers—the future of democracy depends on it. Dewey argued that in a truly democratic society where all parties have a voice in the formulation of policy, parents and community members must be participants in the public conversation about education. These citizens need the empowerment that an understanding of primary and secondary research can provide. One of the most democratic roles a public educator might play involves sharing research skills with the public, especially the disempowered public. This is a radical action on a number of levels. First, it negates the cult of the expert. It helps destroy the myth that men and women should seek guidance from those blessed with society's credentials

to direct them. In this way, it celebrates human self-direction. Second, it expands the role of the teacher. The teacher moves from classroom technician to active political agent, as he or she views education as a vehicle to build an egalitarian community. And third, it positions the school as an agent of democracy that is dedicated to an ethic of inclusion and negotiation. Operating as a democratic agent, the school seeks to uncover those forces that thwart participation as its teachers carefully map the web of reality that supports such powers.

Research, of course, involves the production of new knowledge. Paulo Freire and Ira Shor (1987) write of a complex concept of knowing, arguing that there are two moments of knowing: (1) the production of new knowledge; and (2) when one knows the existing knowledge. What typically happens is that we separate these two moments. Rigorous research in standards of complexity insists that they be brought together. Knowledge in technicist classrooms is produced far from the teacher and the students. Knowing is thus reduced to taking existing knowledge and transferring it. The teacher is not an inquirer who researches existing knowledge; he or she is merely a specialist in *knowledge transference*.

Teachers in this situation lose the indispensable qualities that are mandated by scholarly knowledge production: critical reflection, a desire to act, discomfort, uncertainty, restless inquiry, and the like. When such qualities disappear in teachers, schools become places where knowledge that supports dominant interests is stored and delivered. Knowledge is produced by official researchers, scholars, textbook writers, and sanctioned curriculum committees—it is not created and re-created by teachers and their students in the daily life of the school. Teaching and researching, the official story goes, are separate entities. Rigorous teaching is not viewed as a form of inquiry. The symbiotic ties between teaching and research are not seen.

In this context, we begin to get a more specific perspective on the nature of a complex and rigorous form of knowledge production in U.S. classrooms. We are attempting to create not objective knowledge for storage in a warehouse, but a useful form of knowledge that can be applied to teaching and social problems, that is connected to the lived world and the complex web of reality. If educators don't possess an understanding of the purpose of knowledge production and its relationship to their teaching, then studying research methods and epistemology is irrelevant. In my next point, I will explore this dynamic in more detail, focusing on a form of knowledge production that produces practical knowledge for social and democratic action.

Producing Practical Knowledge for Social Action

Knowledge based on connections, John Dewey (1916) argued, is concerned not only with the immediacy of the knowledge itself but also with

the vantage point it creates from which to consider a new experience. To Dewey, the *content* of knowledge is what has happened, that is, what is considered finished and settled. But the *reference* of knowledge, he argued, is the future. Knowledge in the Deweyan sense provides the means of understanding what is happening in the present and what is to be done about it. In a typical pragmatist context, Dewey was concerned with the consequences of ideas—in the lexicon of this section, the practical value of knowing something. It is this pragmatic aspect of Dewey's theory of knowledge that informs the *critical* intent of education itself. As Aronowitz and Giroux (1985) put it: "the ability to connect contemporary experience to the received information that others have gained through their generalized experience" (9). Here rests a central feature of an epistemology of complexity and standards of complexity: knowledge in complex epistemology does not simply rest after it is produced and learned. It goes to work, it has use value, it is worth the process engaged in learning it.

Positivist educators have never understood the notion of practical knowledge, of knowledge based on connections. This lack of understanding has profoundly shaped the history of U.S. education and the type of knowledge that has been included in its curriculum across the decades. The notion of epistemological complexity is lost in this positivistic context, as curriculum developers failed to comprehend the inexact and ever changing nature of practical knowledge. Technicist educators, Dewey maintained, regard knowledge as an entity complete in itself. Dewey's Hegelian background, with its emphasis on the dialectic, helped move his view of knowledge beyond the "knowledge in isolation" format. The dialectical notion of process grounded his view of the nature of knowledge. Knowledge from this perspective could never be viewed outside the context of its origins and its relationship to other information. We have to call to mind, Dewey wrote, only what passes in our schools as acquisition of knowledge to understand how it lacks any meaningful connection with the experience of students. A person, he concluded, is reasonable in the degree to which he or she sees an event not as something isolated "but in its connection with the common experience of mankind" (342–43). Of course, positivists do not possess the evaluative ability to measure such a practical, connected form of knowledge. Thus, they assume that it doesn't exist.

As we know, positivists seek to produce a form of knowledge—sometimes referred to as a *formal* knowledge—that is a timeless body of truth. Such a formal knowledge is removed from connection with the world, from consideration of its consequences. Privileged in the schools, formal knowledge is viewed as separate from issues of commitment, emotion, or ethical action. Indeed, such a formal knowledge often privileges social adaptation rather than social action. The objectivity inscribed in formal

knowledge often becomes a signifier for political passivity and an elevation to an elite sociopolitical and economic location. Thus, in its "esteemed position," formalism refuses to analyze the relationship between knowledge production and democratic and professional and vocational practice. Teachers obtain formal knowledge and then are expected to directly insert it in their classes.

Such application of formal knowledge involves, for example, pronouncements such as: "The research tells us to teach language and literacy in this way." The problem here involves formalism's failure to study the complex relationship between professional knowledge about education and educational practice. Formalism fails to discern the phenomenological complexity of teaching—that is, the complicated ways knowledge, consciousness, everyday life, and professional practice intersect. Without this critical recognition, knowledge production is irrelevant to school teachers. Formal knowledge production too often fails to question the relationship between professional knowledge and indeterminant zones of practice characterized by complexity, conflict, ambiguity, and uniqueness. Such a practical zone exists outside the boundaries of positivism and the formal knowledge it produces. Epistemological formalism can't cope with everyday life's and the classroom's ill-formed problems.

With this type of understanding, complex, democratic teachers can develop new epistemologies of practice that employ multiple frames of reference. Such different views allow us to observe professional practice from the perspectives of different stakeholders in the educational process. We begin to understand that knowledge about practice is not universal but contingent on the particular context in which it is applied. Viewing from the perspective and needs of marginalized groups, we may see that practices that might work with students from privileged backgrounds may serve to further oppress students facing the forces of class bias and racism. Teachers with this epistemological understanding begin to understand in a very practical way that there is not one answer to any question, one accurate representation of an event, or one right way to teach macroeconomics or biology.

Educators guided by their epistemology of complexity seek to produce a *dialogical* form of knowledge. Such knowledge is many times expressed as a series of questions and tentative answers rather than an arrogant factual knowledge. In this complex context, educators produce knowledge that is less linear and procedural (for example, the four steps to teaching the way a bill becomes law) and more circular and recursive (for instance, how do we help a group of low-achieving students to perceive research abilities as important in helping them achieve personal goals?). In this way, teachers as knowledge producers are emancipated from formalistic, decontextualized, and universal rules for conducting research and teaching their students.

Such positivistic rules often allow

teachers and educational leaders to see only "what is there." That which is readily apparent often involves the least significant aspects of a situation. As they are emancipated from the formalistic, teachers as knowledge producers decenter their perception in ways that allow them to see previously occluded relationships among entities—not just discrete features. Informed by these insights, researchers produce a practical knowledge characterized by three features: an integrative dimension, an applicative dimension, and a hermeneutic (interpretive) dimension.

The integrative dimension constructs meaning for isolated facts in the process, placing data into a larger perspective, connecting it to understandings emerging from a variety of disciplines, and questioning its moral and political inscriptions. The applicative dimension questions how knowledge can be applied to important problems. The hermeneutic dimension searches for the variety of ways knowledge can be interpreted and the various horizons (contexts) within which it can be viewed. In all of these dimensions, emphasis is placed on the process of knowing rather than the production of a final, positive knowledge.

The practical knowledge championed here cannot even be produced by positivist researchers—positivist formal knowledge and complex practical knowledge are incommensurable, an epistemological mismatch. Complex practical knowledge must be produced by a process informed by and contingent on context. It is an embodied form of knowledge that cannot be separated from specific contexts. Like indigenous knowledge, practical knowledge is less informed by abstract rules of research procedures than by an intimate understanding of a specific situation. In line with the various features of an epistemology of complexity, practical knowledge is produced by a form of research that uses the human self as an instrument of inquiry and emotional and logical insight. Democratic teachers in standards of complexity feel they have contributed to the production of practical knowledge when they are able to describe the living context in which the knowledge is based. Human interactions and experiences that take place in these breathing contexts are not events to be simply described but complex circumstances to be interpreted.

In their awareness of these living contexts, democratic educators expose the values and contradictions in values that shape the contexts themselves and their own questions about them. Thus, the level of awareness of social and physical complexity is raised. The practical benefits of such a heightened awareness of complexity help us escape the simplistic, reductionistic data of more traditional epistemologies. Awareness of such omnipresent values helps us explain the meaning of the context and the uses to which such meaning can be applied. In this context, the knowledge producer comes to understand that these values are not absolute qualities but perpetually subject to questioning, interpretation,

clarification, and transformation. Appreciating the complex relationship connecting knowledge, values, and context, critical analysts can cope with random occurrences via their self-reflective, self-evaluating, and self-adjusting orientation. Thus, they are attuned to and undaunted by the messy aspects of everyday life.

The move from explanatory knowledge to practical knowledge demands a profound sociocognitive and epistemological leap. Such a move constitutes a criterion for a reconceptualized notion of rigor. Such a criterion falls outside the boundaries of formal research with its prearranged, operational definition of rigor as fidelity to an objectivist methodological procedure. It is important to delineate this new notion of rigor in relation to the language of educational excellence and calls for high standards. Our reconceptualized notion of rigor and the epistemology of complexity that grounds it can help teachers reshape the public conversation about high-quality, rigorous education. This new notion of rigor is also important as democratic teachers and students produce practical knowledge for inclusion in the curriculum.

How do we exercise courageous and smart citizenship in diverse communities? How do we reconceptualize our social values in light of the epistemological concept of difference? Where do we begin the process of helping the public rethink its notion of intelligence as more than high scores on standardized tests? How do we help students and other teachers understand the ways poverty and racism inscribe themselves on the consciousness of the oppressed and undermine their relationship with learning? All of these questions form the basis for the production of practical forms of knowledge that sets up the possibility for individual self-direction and community-building action. With such questions in mind and an understanding of an epistemology of synthesis, integration, and application, we can begin to produce knowledge and engage consciousness in a way that leads to progressive social and educational change. As epistemological horizons are expanded, human possibility is enhanced. We can all become people who push the moral, civic, cognitive, and democratic envelope. Standards of complexity can help us get on with this task.

Appreciating the Nature of Complexity: Overcoming Reductionism

In this context, a brief review of the nature of complexity may be in order. The web of reality is composed of too many variables (or, as Nobel Prize winner Ilya Prigogene puts it, "extraneous perturbations") to be taken into account and controlled. One extraneous variable, for example, in an educational or any other experiment can produce an expanding, exponential effect. Inconsequential entities can have a profound effect in a complex, nonlinear universe. The shape of the physical and social world depends on the smallest part. The part in a sense is the

whole, for via the action of any particular part the whole in the form of transformative change may be seen. To exclude such considerations is to miss the nature of the interactions that constitutes reality. The development of a counter-Cartesian reconceptualization of education and educational knowledge production does not mean that we simplistically reject all empirical science—obviously, there are questions in education that involve counting, figuring percentages and averages, and so on. It does mean, however, that we conceive of such empirical questions as one part of the web, that is, the interactive configuration.

A complex epistemological reconceptualization of education means recognizing, as Dewey did, as feminist epistemology does, that the knower and the known are intimately connected, that a science that separates fact from value, purpose, belief, and complexity is a pseudoscience divorced from the *Lebenswelt*, the lived world of human consciousness. Such a reconceptualization reminds us as knowledge producers that we can display our findings and argue for their value, but always with a hesitation, a stutter, a tentativeness—never as the simple truth (Besag, 1986b; Doll, 1989; Briggs and Peat, 1989).

The complexity of reality may be illustrated by medical and mechanical examples. When the human body breaks down, doctors may identify a certain factor, but the "cause" of the illness is always multiple. Living entities are always composed of a multitude of feedback loops—a cardinal concept in chaos theory. A home furnace is one of the most familiar forms of a simple feedback loop. We all know that when the room cools down below the temperature set on the thermostat, the thermostat responds by switching on the furnace. As the furnace heats up the room to a point above the second temperature set on the thermostat, the furnace automatically shuts off. The ear-splitting screeches produced when a microphone is placed close to a speaker, feedback, is another example of a feedback loop. Output from the amplifier is detected by the microphone and looped back into the amplifier. The chaotic sounds that result are the consequence of a feedback loop where the output of one stage turns into the input of another. Because human beings are composed of so many feedback loops—for example, the transformation of food into energy, the increase in heart rate in the presence of danger, and so on—the attempt to study them takes on far more complexity than traditional conceptions of cause-effect linearity could imagine (Lincoln and Guba, 1985; Briggs and Peat, 1989; Capra, 1996; O'Sullivan, 1999).

In order to study such complex systems, educators have to move from hierarchic to heterarchic conceptions of order. Positivism saw an inherent order in the physical and social world: for example, the divine right of kings to govern or Carl Brigham's (the founder of the Educational Testing Service) hierarchy of the intelligence of ethnic groups. Researchers operating in an epistemology of complexity

maintain that if orders exist, then they exist side by side; if one order dominates, it is merely temporary and is subject to a variety of rapidly shifting forces. Because of this heterarchic conception of order, any simplistic notion of determinism is destroyed. In a hierarchic universe, positivists have maintained that if a knowledge producer knows the location and velocity of all the bits and pieces of the world, then the future can be predicted and controlled. But change is complex, and qualitative researchers informed by a complex epistemological understanding have to accept the notion that change occurs dramatically and unpredictably (Lincoln and Guba, 1985; Denzin and Lincoln, 2000; Briggs and Peat, 1989).

Operating in a closed system where variables are controlled, positivists have often promoted an orderly and predictable view of change. When the variables were controlled and protected from outside contamination, equations could be formulated and exact predictions about the physical, social, and educational worlds could be devised. But even ostensibly very minor variables could have dramatic effects, sometimes not exhibiting themselves for long periods of time. When they did manifest themselves, their effect seemed to the positivistic researcher as an aberration, probably a mistake in the construction of an equation. Not only does the critical analyst in the counter-Cartesian context lose the possibility of certainty, but he or she is also faced with a need to find methods of exploring these complex, multiple constructions of reality.

In this context marked by complexity, think of an everyday classroom. A wide variety of kids with different backgrounds, special needs, different home experiences, diverse strengths and weaknesses, and changing moods and dispositions inhabit those desks in our rooms. As we survey our classrooms, we come to realize that there is more to teaching than meets the modernist eye, more than is included in technicist teacher-education programs. The purpose of an epistemologically complex teacher education is not to learn the right answers, the hand-me-down knowledge of the research experts; on the contrary, a complex, democratic teacher education consists of making the most of the unanticipated complications of the classroom. Technicist methods courses and student teaching do not address the innate and complex uncertainty of teaching—they attempt to deny it. Thus, complex teacher educators refuse to promise the provision of a generic form of teaching applicable to all students in all contexts. Neither does it promise to reduce the uncertainty of the profession by the application of quick technical fixes. The counterreductionist turn implies an admission that teacher educators also agonize over the confusing uncertainties of everyday practice. To do otherwise would be to revert to the dishonesty of modernism's veil of simplicity and certainty (Clark, 1987).

An epistemology of complexity

adopts a progressive view of knowledge that even as information is being gathered by researchers, it is being analyzed and interpreted. A more positivistic view of knowledge assumes that only after one knows the facts is he or she ready to analyze. Such a view misses the important point that what we designate as the facts is an act of interpretation—in the case of positivistic research, it is an unconscious act of interpretation. Privileged knowledge producers often assume that knowledge is a static or inert entity—writers of elementary and high school textbooks and content standards often take this viewpoint. Knowledge production operating with an understanding of an epistemology of complexity proceeds tentatively, ever mindful of ambiguity and uncertainty. When we know for certain, little need exists to pursue alternative ways of knowing. "Deviant ways of seeing" are dismissed as irrelevant; they are not viewed as an important source of new insight and socioeducational innovation (Romanish, 1986; Schon, 1987).

This view of knowledge production and teaching within an epistemology of complexity revolutionizes the way we conceptualize education. The negative consequences of the quest for certainty are avoided, as teacher-researchers and teacher educators begin to imagine and construct new ways of thinking about teaching and teacher education. If the act of teaching was known and constant, teachers could act on empirical generalizations and teacher educators would know exactly what teachers needed to know to perform successfully. But teaching is not constant and predictable; it always takes place in a microcosm of uncertainty. Thus, what we call valuable practitioner knowledge is elusive. How to teach teachers what to do in conditions of uncertainty is even more elusive.

The positivism of professional schools of education in the early twentieth century used Cartesian science to eliminate the uncertainty of professional practice and replace it with empirical knowledge about the teaching act. The cult of the expert in the educational sphere precluded an admission of uncertainty. The uniqueness of particular teaching situations was ignored by educational researchers or experts whose clients demanded official knowledge—knowledge that specified the scientifically sanctioned "right way" to proceed (Schon, 1987). In a culture that relies on the expert for guidance, uncertainty doesn't play well; indeed, denial of the useless complications of complexity with the attendant certainty that can be asserted signifies strength and positive, affirmative leadership in a macho, patriarchal culture. The higher our levels of epistemological understanding, the weaker our perspectives often appear to a culture that has been conditioned to buy into a quest for certainty. This cruel irony tends to impede the attempt to teach complex, sophisticated, critical thinking and to retard the movement to put teachers into positions of control over their

workplaces. Teachers with an epistemological consciousness of complexity must resist asking experts to tell them *what to do* when they experience difficulty. This does not mean they can't ask experienced educators for advice; they must also adeptly resist frustrated students' calls to "just tell us what you want us to memorize and we'll do it." Teaching with an understanding of epistemological complexity is a subtle task that takes practice and patience.

One of the major problems of U.S. schooling involves its inability to understand this epistemology of complexity, its inability to deal with ambiguity, to perceive ambiguity as a valuable characteristic. Without such an understanding, educational leaders have continually sought naïve and simplistic answers to the complex social and cognitive questions that confront education—a reflection of the epistemological predisposition of modernism to seek certainty in its inquiries about human and educational affairs. Rigorous education operating in standards of complexity attempts to overcome our socially engrained discomfort with the enigmatic, our desire to have something we can all subscribe to together, and our need for a shared certainty.

Critical, democratic teachers who embrace an epistemology of complexity deal with a realm so complex that they must accustom themselves to the mistakes they will make in their attempt to make sense of it all. We will never have enough data to be assured that we "have it right." In this complex context, our goal for teachers is not that they parlay the truth to their students, but that they turn out students who are aware of both the complexity of the process and their own and other individuals' fallibility in their quest to understand the world and themselves. What an amazing scholarly insight this would be.

All Knowledge Is in Process, a Part of a Larger Process

An epistemology of complexity is inseparable from an epistemology and pedagogy of process. Positivism and the educational standards it supports see the fundamental nature of reality as "separate things." Reality and consciousness itself in a process-oriented epistemology are seen as fundamentally a collection of processes, always interacting with other things and processes, and thus always changing. Process, thus, is the fundamental state of the physical and social worlds. Processes are more fundamental to reality, therefore, than separate entities—a notion that flies in the face of Cartesianism (Mashalidis, 1997). Knowledge in this epistemological context has a past and a future; we always see it in a particular stage of its development. When knowledge is removed from its process(es), it is no longer capable of *being* known—it has *become* known, resulting in its life force being stripped away (Postman, 1995; Krievis, 1998). When teachers witness such a move in the top-down technical-content standards they are provided, they witness an epistemological murder.

Aware of a complex epistemology of process, democratic teachers understand that the knowledge of today changes tomorrow. It is not stable, immobile, or static. Albert Einstein clearly understood this dynamic and used it to change the way we understand the world around us. Using his understanding of nineteenth-century German philosopher George W.F. Hegel's concept of process, Einstein walked through a conceptual window unimaginable to most individuals trapped in a Cartesian-Newtonian house. Writing in the nineteenth century, Hegel was conceptually uncomfortable with Isaac Newton's absolutist explanation of gravity and the way things work. Most important for our educational, social, and cognitive concerns, Hegel was unimpressed with the manner in which Newton reached his conclusions about the physical universe. From Hegel's perspective, every entity's existence could be understood only in relation to other things. In his philosophical view, the concept of relationship took on an importance not valued by Newton and his scientific descendants.

Relationship was so significant to Hegel that he described the interaction between entities as a living process. In such a process all things in the world are affected and shaped by all other things—just as in Einstein's relativity theory, mass works on space and space works on mass ("Einstein on spacetime," 1998). Operating without the benefit of this lesson, educators fall into the *irrationality of the fragmentation of conventional reason*. We see the importance of the world in things in themselves, in isolation from their contexts, removed from the larger processes that provide their meaning. Informed by Einstein's lesson, the curriculum becomes more than fragments of data. In the call for educational standards over the past few years, we have seen the effects of this failure to learn Einstein (and Hegel's) lesson: We judge educational quality by the quantity of data accumulated (Woods and Grant, 1998; Madison, 1988).

An epistemology of process was so important to Einstein that he could not have developed the general theory of relativity without it. A quick look at the relationship between process and the genesis of the theory is instructive to all teachers. Picking up where we left off in the introduction to the encyclopedia, Einstein often used the notion of a rubber sheet stretched over a baking dish to explain the complex notion of space. When a bowling ball or a BB is placed on it, the sheet is bent or warped around the objects. This distortion exemplifies what massive objects such as the sun or the moon do to the fabric of space. This is one of the basic concepts of Einstein's general theory of relativity. The rubber sheet is flat when no objects are placed upon it; Einstein referred to this as the absence of gravity. When the bowling ball depresses the sheet, the curvature around the depression represents a gravitational field. A BB rolled along the sheet will fall into the trough, just as an asteroid will fall to Earth if it gets too close to its gravita-

tional field. The more massive the object, the greater the bending of space. The bowling ball will distort the sheet more than the BB.

So, according to Einstein, mass causes a depression in space. If a comet, for example, moves too close to a star, then it is drawn into its gravitational well and seized. Thus, entities in space follow the shape of the universe when they fall to Earth. They are not pulled by some gravitational force! Whereas the rubber sheet is merely a metaphor and reduces the complexity of Einstein's relativity, it does help us appreciate the structural unity of space, matter, and motion—the *process* of space. (A tricky part is that we have to add time to that unity as well.) Gravity, therefore, is simply a part of the structure of the universe—and, amazingly, Einstein figured that out. Objects fall into the valley in space-time produced by the bowling ball or sun. In this context, the orbits of the sun's planets can be better conceptualized; Mercury and Venus as well as Neptune and Pluto "roll" around the indention in space caused by the sun's gravity trough.

The general theory of relativity even asserted that if a massive object in space is disturbed, then it will cause ripples in space like ripples from a rock splashing in a pond. In space, these "gravity waves" are illustrated again by the rubber sheet, as we imagine dropping a ball bearing on it. BBs and bowling balls placed on other portions of the sheet will be affected by the dropping of the ball bearing. Einstein asked us to use our rubber sheet to imagine a massive object that revolves. In this situation, the "gravity well" it produces in space is not just a depression in the rubber sheet but a spinning indentation that twists space. Such twisting induces other objects around it to move in particular ways. Although the general theory of relativity is, undoubtedly, very complex and mysterious, the point I am making about it is quite easy to understand. This point holds revolutionary significance for our analysis of epistemology and educational reform.

As Einstein sought to understand the force of gravity, he discovered that there is no such thing as "nothingness" in the structure of the universe. Space, like everything else, *is something*—it is an intrinsic part of the fabric of the cosmos. Space is neither empty nor separable from matter. The *relationship* between space and matter is central to making the universe what it is. In light of Einstein's assertion, the old Newtonian notion of gravity was destroyed; but most important to our point, the Newtonian universe and the Cartesian-Newtonian *way of looking at the universe* (epistemology) were overturned. When Newton developed his universal theory of gravitation in the 1600s, he focused on gravity as a thing-in-itself. If gravity, as he believed, was simply a force, why would one look at it in any other way? Thus, he and especially those who came after him, followed the emerging scientific method and removed gravity from its larger process so it could be efficiently analyzed. And this was exactly their mistake ("Astronom-

ical instruments," 1999; "Gravitational radiation," 1998; "Still right. . . . ," 1998; Evans, 1997; Woods and Grant, 1998; Peoria Astronomical Society, 1998).

Einstein operating in the first decades of the twentieth century was able to escape the Newtonian mistake that had misled physicists for a quarter of a millennium by one conceptual move. Instead of searching for gravity as a *thing*, he saw it as a *relationship*, a part of a grander process. Einstein saw gravity *in relation* to other aspects of the universe. Indeed, he understood that the relationship between matter and space—illustrated by the rubber sheet, bowling balls, and BBs—is exactly what makes the world what it is. What we experience as gravity is not a force made up of tiny gravitons but a reflection of the structure of the universe moving us along a path existing in curved, multidimensional space. Space, he figured, is not the package in which the universe is stored—it is a key aspect of the process of creation. For those who understood the basic idea of Einstein's theory, the physical world could never be viewed the same way again (Woods and Grant, 1998).

The focus on process connecting space, time, and matter that eventuated in Einstein's revolutionary theories can also change our social consciousness, cognition, and education. As we pursue modes of thinking that account for changes and interactions in the physical, social, and psychological domains, we begin to gain dramatically different and more *complex* perspectives on that which surrounds us. In this concept of interactive processes, the etymology of Shirley Steinberg and my concept of postformalism or postformal thinking is revealed. At this point, however, it is important to explain Einstein's role in leading us to new ways of making meaning, to new appreciations of the process of both being and becoming (Kovel, 1998).

Using Einstein's example of thinking in physics and Hegel's dialectical insights, we are led to post–Cartesian-Newtonian forms of analysis. In this context, we begin to appreciate the hidden processes that place the physical, social, psychological, and educational worlds in a sea of constant change. Newtonian and Cartesian ways of seeing often provide a metaphorical photograph of an entity. This photograph is an isolated moment in time, a still life that may miss the significance of the larger dynamic of which it is but a part. When we see—as postformalism labels it—facts as a part of a larger process, we begin to understand how things move beyond what they are but still retain their identity. For example, though gravity no doubt exists, it moves far beyond its existence as an entity involved merely with the attraction of one object to another when conceived as a part of an inclusive whole—the structure of the universe. Imagine the difference between a science lesson taught to middle school students about gravity that takes this processual feature into account and one that doesn't.

The process-based thinking delineated here is a form of holistic analysis that insists on the inseparability of

mind and body, politics and economics, math and science, consciousness and cultural context, facts and values, the biological and the social, and gravity and matter. What education in its disciplinary organization or in its fragmentation of information treats as separate, an epistemology of complexity considers parts of larger processes. There is nothing wrong, process analysts maintain, with separating entities for the purpose of labeling and analysis as long as this step is followed by the act of putting them back together. Step 1: gravity is defined as the attraction of one object to another; step 2: this attraction is viewed as a result of the interrelationship among space, mass, time, and motion. Thus, this mode of analysis can be described as examining an entity from differing vantage points: (1) gravity as experienced by an earthling throwing a baseball into the air and watching it return to Earth; and (2) gravity from the perspective of one who views (or, like Einstein, is capable of imagining) the universe as a whole and frames it in such a perspective. Understanding both modes and their relationship is important in the complex effort to make sense of gravity (Bookchin, 1995; Kovel, 1998; Levins, 1998).

Thus, informed by these ways of seeing, an epistemology of process and complexity assumes that little in the universe is as it appears to be. In this context, democratic teachers argue that considering an entity only as a thing-in-itself can be viciously misleading. The reason for this examination of Einstein's general theory of relativity in an educational context involves his phenomenal ability to avoid this Cartesian-Newtonian quicksand and to model a rigorous form of process-oriented cognition that can lead us out of the cognitive and educational briar patch in which we are presently ensnared. The implications of such a critique of Cartesian-Newtonian logic (conventional reason) are sobering and are not offered frivolously. Based on Einstein's mode of thinking and numerous analyses of the limitations of mainstream Western epistemology, complex, democratic teachers come to understand that there are important flaws in accepted forms of logic, research, and knowledge production.

Do not misread this assertion. I am not arguing that we throw out the Cartesian-Newtonian baby with the bathwater—that is, that mainstream science is of no benefit. Of course, it is; its contributions are significant and well documented. An epistemology of complexity maintains, however, that we can do better, go further, and address the limitations inherent in the Cartesian-Newtonian system—in particular, the limitations Einstein had to overcome to develop his frame-shattering theories. An epistemology of complexity demands a new rigor in cognition and education. Such an epistemological approach helps teachers develop ways of transcending conceptually impoverished definitions of high educational standards grounded in recall of fragmented bits of knowledge—long on memorization and recitation, short on an understanding

of larger processes, interpretation, applicability and transferability, and connectedness. When students and teachers move into the processual realm, they gain the ability not only to explain the dynamics that move events but also, like Einstein, to develop the capacity to transform them in progressive ways (Kovel, 1998; Woods and Grant, 1998; Lawler, 1975).

With these Einsteinian insights into an epistemology of process, we begin to notice the processural nature of other aspects of the lived work. Consciousness, for example, can be understood as a process-oriented dynamic. Consciousness and knowledge acquisition in this context are not separate entities, things-in-themselves, but parts of a mutually constructive process. As with the process connecting the knower and the known, consciousness cannot be understood separate from the world. With this understanding, we can reconceptualize education not only as an epistemological dynamic but also as an ontological force as it shapes who we are as human beings (Mashaldis, 1997). In such a processural context, disciplines of knowledge cannot be arbitrarily separated from one another but must be viewed as parts of larger multidisciplinary contexts.

Teachers who attempt to act on their understanding of this epistemology of process, of course, have to continually battle the forces of positivism within the schools—especially in technical standards. Instead of exploring and constructing new insights into mathematical, physical, linguistic, social, cultural, and political processes, teachers and students in the grips of Cartesianism are fed a diet of isolated, unproblematized data. Such a pedagogy works not to promote analytical thinking and stimulate the social imagination but rather to adjust one uncritically to the status quo. Contrary to such Cartesian teaching, a complex epistemology of process alerts teachers and students to the realization that meanings are never closed but remain forever open in light of the appreciation of another process in which they can be understood. Positive knowledge doesn't age well; it often turns to vinegar. New facts come to light, and fresh interpretations uncover new processes that render traditional accounts passé. Albert Einstein the student is viewed as a failure, the scientist as a genius. Yesterday's certainties are tomorrow's superstitions (Slaughter, 1989; Rineharz, 1979; Lincoln and Guba, 1985; Denzin and Lincoln, 2000).

The Importance of Interpretation: Hermeneutics

Ever since positivists applied physical science methods to social science research, there has been a struggle to address those aspects of the human condition that need not just counting but understanding. The information that social analysts collect may include observed behavior, documents, and artifacts, but these source materials cannot be separated from the meanings granted them by past, present, and future human agents. The hermeneutic

dimension of research attempts to appreciate this question of meaning by focusing on the interpretive aspects of the act of knowledge production. In positivism, this hermeneutic dimension is typically dismissed. Understanding that all knowledge is an interpretation, teaching based on an epistemology of complexity places great emphasis on the hermeneutic dimension.

An epistemology of complexity appreciates that in knowledge production—no matter how much Cartesian experts may argue that the facts speak for themselves—interpretation is always at work. Sometimes it is a conscious process (as in education based on standards of complexity); many times it is unconscious (as in positivistic education and research). Nevertheless, it is always there (Grondin, 1994; Gross and Keith, 1997; Rosen, 1987; Vattimo, 1994). The hermeneutic act of interpretation involves, in its most elemental articulation, making sense of what has been observed in a way that communicates understanding. Not only is all knowledge production merely an act of interpretation, but, hermeneutics contends, perception itself is an act of interpretation as well. Thus, the quest for understanding is a fundamental feature of human existence, as encounters with the unfamiliar always demand the attempt to make meaning, to make sense. The same, however, is also the case with the familiar. Indeed, as in the study of commonly known texts, we come to find that sometimes the familiar may be seen as the most strange. Thus, it should not be surprising that even the so-called objective writings about both the physical and the social domains are interpretations, not value-free descriptions (Denzin, 1994; Gallagher, 1992; Jardine, 1998; D. Smith, 1999).

Learning from the hermeneutic tradition and an epistemology of complexity, educators have begun to reexamine textual claims to authority. No pristine interpretation exists; indeed, no methodology, social or educational theory, or discursive form can claim a privileged position that enables the production of authoritative, unquestionable knowledge. Knowledge producers must always speak and write about the world in terms of something else in the world, "in relation to. . . ." As creatures of the world, we are oriented to it in a way that prevents us from grounding our theories and perspectives outside of it. Thus, whether we like it or not, we are all destined as interpreters to analyze from within its boundaries and blinders. Within these limitations, however, the interpretations emerging from the hermeneutic process can still move us to new levels of understanding, appreciations that allow us to "live our way" into an experience described to us.

Despite the impediments of context, hermeneutically informed teachers can transcend the inadequacies of thin descriptions of decontextualized facts and produce thick descriptions of social texts characterized by the contexts of their production, the intentions of their producers, and the meanings mo-

bilized in the processes of their construction. The production of such thick descriptions and interpretations follows no step-by-step blueprint or mechanical formula. As with any art form, hermeneutical analysis can be learned only in the Deweyan sense—by doing it. Researchers in this context practice the art by grappling with the text to be understood, telling its story in relation to its contextual dynamics and other texts first to themselves and then to a public audience (Carson and Sumara, 1997; Denzin, 1994; Gallagher, 1992; Jardine, 1998; Madison, 1988; Ellis, 1998).

These concerns with the nature of hermeneutical interpretation come under the category of philosophical hermeneutics. Working this domain, hermeneutical scholars attempt to think through and clarify the conditions under which interpretation and understanding take place. The hermeneutics that grounds complex knowledge production moves more in the direction of normative hermeneutics in that it raises questions about the purposes and procedures of interpretation. In its critical context, the purpose of hermeneutical analysis is to develop a form of cultural criticism revealing power dynamics within social and cultural texts. Teachers familiar with critical hermeneutics build bridges between reader and text, text and its producer, historical context and present, and one particular social circumstance and another. Accomplishing such interpretive tasks is difficult, and researchers situated in normative hermeneutics push ethnographers, historians, semioticians, literary critics, and content analysts to trace the bridge-building processes employed by successful interpretations of knowledge production and culture (Gallagher, 1992; Kellner, 1995; Kogler, 1996; Rapko, 1998).

Grounded by the hermeneutical bridge building, educators in a hermeneutical circle (a process of analysis in which interpreters seek the historical and social dynamics that shape textual interpretation) engage in the back-and-forth of studying parts in relation to the whole and the whole in relation to its parts. No final interpretation is sought in this context, as the activity of the circle proceeds with no need for closure (Gallagher, 1992; Peters and Lankshear, 1994; Pinar et al., 1995). This movement of whole to parts is combined with an analytic flow between abstract and concrete. Such dynamics often tie interpretation to the interplay of larger social forces (the general) to the everyday lives of individuals (the particular). A critical hermeneutics brings the concrete, the parts, and the particular into focus, but in a manner that grounds them contextually in a larger understanding of the social forces, the whole, and the abstract (the general). Focus on the parts is the dynamic that brings the particular into focus, sharpening our understanding of the individual in light of the social and psychological forces that shape him or her. The parts and the unique places they occupy ground hermeneutical ways of

seeing by providing the contextualization of the particular—a perspective often erased in positivism's search for abstract generalizations (Gallagher, 1992; Kellner, 1995; Miller and Hodge, 1998; Peters and Lankshear, 1994).

When these aspects of the interpretation process are taken into account, analysts begin to understand Hans-Georg Gadamer's (1975) contention that social frames of reference influence researchers' questions, which, in turn, shape the nature of interpretation itself. In light of this situating process, the positivist notion that a text has one valid interpretation evaporates into thin air. Researchers, whether they admit it or not, always have points of view, disciplinary orientations, and social or political groups with which they identify (Kincheloe, 1991; Lugg, 1996). Thus, the point is not that knowledge producers and teachers should shed all worldly affiliations but that they should identify those affiliations and understand their impacts on the ways a researcher, a teacher, or a standards writer approaches educational issues. Gadamer labels these world affiliations of researchers their "horizons" and deems the hermeneutic act of interpretation the "fusion of horizons." When researchers and teachers participate in the fusion of horizons, they enter into the tradition of the text. Here they study the conditions of its production and the circle of previous interpretations. In this manner, they begin to uncover the ways the text has attempted to represent truth (Berger, 1995; Ellis, 1998; Jardine, 1998; Miller and Hodge, 1998; Slattery, 1995). Is it not obvious that such a process moves the quality of education, the rigor of teaching and learning, to a new level?

The hermeneutic tradition puts the politics of interpretation at center stage in education and knowledge production. Like ordinary human beings, complex knowledge workers make history and live their lives within structures of meaning they have not necessarily chosen for themselves. Understanding this, students of hermeneutics realize that a central aspect of their sociocultural analysis involves dissecting the ways people connect their everyday experiences to the cultural representations of such experiences. Such work involves the unraveling of the ideological codings embedded in these cultural representations. This unraveling is complicated by the taken-for-grantedness of the meanings promoted in schools and other social institutions and the typically undetected ways these meanings are circulated into everyday life (Denzin, 1992; Kogler, 1996). The better the analyst, the better he or she can expose these meanings in the domain of "what goes without saying," that activity previously deemed "noise" unworthy of comment. Schools need a healthy dose of this analysis of what goes without saying. The interpretive rigor of the hermeneutic tradition is an essential ingredient in our recipe for rigorous educational reform.

Locating the Frontier of Classroom Knowledge at the Points Where One's Personal Experience Intersects with Academic Information

In an epistemology of complexity, teachers are hermeneutical scholars who engage in rigorous thinking, extensive reading, ongoing dialogue, thorough analysis, and synthetic reflection. Technical standards and the teaching they support are grounded in the positivist epistemological assumption that knowledge is an external body of information independent of human beings. The teacher's role in this context is to *insert* this knowledge into the minds of students. Frequently, this "knowledge" is a body of isolated facts (factoids) to be committed to memory by uninterested students. Evaluation procedures that emphasize the retention of isolated bits and pieces of data strengthen this view of knowledge.

Conceptual thinking vanishes as technical standards–driven classes trivialize learning. Students are evaluated on the lowest level of human thinking—their ability to memorize. This "stupidification" process is directly related to the unstated, tacit positivist epistemology lurking in the hallways of the school. Thinking skills involving the ability to ask unique questions, to see connections among concepts, or to apply conceptual understandings lose importance. Empowered teachers aware of this epistemology of complexity focus on using these thinking skills to guide the interaction between them and their students and the content and learning processes that they all want to engage. In this situation, both students and teachers reinterpret their own lives and in the process uncover new insights and talents. Unless students and teachers can incorporate academic information into their lives to produce new knowledge, their schooling will remain an ideological rite of passage into an existentially unconscious adulthood.

If teachers cannot engage their students in the development of an epistemological consciousness where they can produce knowledge, then my effort to educate thoughtful, emancipated, knowledgeable teachers is quite irrelevant. Why bother requiring a college degree if teachers simply deliver factoids? Why struggle to interest teacher-education students in the task of knowledge production, the quest for an epistemological consciousness, the effort to expose the values hiding in particular kinds of information and modes of teaching, or the formulation of questions about the effects of social context or power? The genius of great thinkers lies much less in their ability to retain the information they encounter than in their ability to produce new knowledge. When teachers gain an epistemological consciousness and come to understand that the collision of student experience with the information of the humanities, social sciences, and physical sciences produces new knowledge, then traditional information is not

simply discarded. Complex, democratic teachers indeed reexamine what constitutes traditional knowledge, the traditional canon, but at the same time recognize value in the knowledge that others have produced.

The important epistemological point here is that we interrogate this knowledge and consider it in light of new contexts and questions. As we develop this point, the new contexts and questions on which we are focusing here involve our personal experiences and consciousnesses. How does this academic information, we ask, help us rethink, reinterpret, our prior experiences? How does it affect our political beliefs, our view of citizenship, our view of the way the physical world operates? How does it help (or hinder) us from becoming the people we want to become? What does it mean to us, given where and how we have lived our lives? These questions and others like them are important steps in the creation of emancipatory knowledge because they preclude the epistemologically reductionistic, concrete-level "mastery" of secondary (secondhand) data and the disempowerment they leave in their wake. There has to be more to education than this. Brilliant teachers are always working on new ways to help their students connect their lives to secondary academic data in ways that create new syntheses of knowledge, new ways of being.

Appreciating the epistemology of complexity, teachers understand that there is nothing simple about setting up this synthesis of secondary or academic information and personal experience. Such teachers grow comfortable with the uncertain, tentative syntheses that they and their students develop. They are keenly aware of the presence of contradiction and treasure the effort to integrate ostensibly dissimilar phenomena into new revealing combinations. Teachers conscious of these epistemological dynamics escape the confines of Cartesianism and set foot into new pedagogical, ontological, and even cosmological (used here to mean the nature of the universe and the inseparability of the nature of life and human consciousness from this larger whole) realms.

Only an individual with a consciousness of epistemological complexity who understands self in its critical, cosmological (interconnected) context is ready to jump into this new realm. Whereas the formal, operational orientation of Cartesianism functions on the basis of isolation of parts, linear causality, and determinism, the epistemology of complexity assumes a holism based on a complex, nonlinear interconnection of events. In particular in the context of my previous point, this holism involves the continuum of cosmos and self. Where does the cosmos end and the self begin? The frontier that connects (not separates) world and self is a living part of both (O'Sullivan, 1999; Van Hesteran, 1986; Kramer, 1983).

As democratic teachers grow accustomed to this self-world connectedness, they are reminded once again of the epistemology of complexity's rejection of universal, *correct* ways of viewing the social, physical, and edu-

cational worlds. Such teachers not only will see multiple interpretations of social phenomena but also will be able to identify the contexts from which they emanate and the ways they intersect with the life experiences of themselves and their students. They appreciate what systems of meaning various knowledge producers have employed to shape the data they disseminate—from whose perspective their stories are told.

With these understandings, educators emancipate themselves from Cartesianism and the structural forces that limit human ability to see the world from outside our restricted place in the web of reality. In logic-centered modernism, this monitoring of self-perception was subverted in positivism's discounting of the centrality of the terrain of private, inner reality. In line with the modernist impulse, what purpose did the realm of consciousness serve in the process of industrialization, the quest for material progress, or the manly conquest of nature? As epistemological complexity rediscovers the sensuous and erotic dimensions of humanness, it incorporates such notions into new ways of exploring and perceiving the social, physical, educational, and even intrapersonal domains (Gordon, Miller, and Rollock, 1990; Kramer, 1983; Slaughter, 1989).

Such new modes of thinking, producing knowledge, and teaching incorporate sensual and self-knowledge in interesting and rigorous ways. Teachers, researchers, and teacher-researchers who do not understand the way information interacts with their own experiences and shapes their own consciousnesses tend to misconstrue the pronouncements, actions, and feelings of others. The multiple readings characteristic of a complex epistemology are remote to modernist, formal teachers and knowledge producers, as they seek comfort in the prescribed methods, the objectivity, and especially the depersonalization of traditional positivistic social and educational science. Such positivistic teachers and knowledge producers are nervous purveyors of the *correct answers* of traditional positivistic science (Van Hesteran, 1986; Steinberg and Kincheloe, 1998).

In a sense, the positivist, objectivist tradition provides a shelter in which the self can hide from the deeply personal issues that permeate all social and educational phenomena. Such personal issues, if it were not for the depersonalization of Cartesian knowledge production, would force an uncomfortable element of researcher self-disclosure. Epistemologically conscious teachers, of course, move beyond this positivist veil of secrecy, exploring and revealing how their own perspectives and values came to be constructed—how the information they encounter shapes their pedagogies and worldviews. They transcend Cartesian formalism's concern with problem solving by seeking the genesis of the problems they discern. In this way, they develop a form of intrapersonal intelligence, as they learn to contextually examine the origins and nature of their own thinking—a

key aspect of becoming an educated person.

Reflective Ontology: Searching for New Forms of Human Being

One of the most important ways that a complex education moves us to new levels of consciousness and being involves gaining awareness of ourselves as social and historical beings. Individuals who gain such an awareness understand how and why their political opinions, religious beliefs, gender roles, or racial perspectives have been shaped by dominant perspectives. Our epistemology of complexity plays such an important role in this attempt to gain new understandings and insights as to who we could become. As it exposes the particular ways knowledge is produced and the impact it exerts on the shaping of self, we all begin to understand that our present state of being (our ontological selves) is in part a social and historical construction. Just as it has been shaped by social action, it can be rethought and reshaped by social action. This subsection, our last feature of an epistemology of complexity, blurs the lines of knowledge production and being (ontology), as we focus on how we move from the gaining of epistemological consciousness to new ways of being human. In this context, teachers and their students move into a realm where they pursue what might be labeled a "reflective ontology."

A critical epistemology of complexity promotes self-reflection that results in attitudinal changes. The basis of these changes rests on insights into the scars and traumas of the past. Teachers thus help their students begin the process of understanding themselves by bringing to consciousness the process by which their identities were formed. Action that is to be taken by students to address social pathologies such as racism, sexism, or class bias that shape individual consciousness can begin to be negotiated once self-reflection has taken place. Prudent ontological action that involves asking questions of ethics, morality, politics, emotion, and gut feeling does not take the form of rules and precise regulations. Our understanding of a democratic system of meaning vis-à-vis an epistemology of complexity provides a framework of principles around which can be discussed action rather than a set of procedures. Teachers who engage in the quest for new, expanded, more just, and interconnected ways of being human—a democratic, reflective ontology—are never certain of the exact path of action they will take in such a pursuit. An awareness of contextual factors will always complicate the effort.

A part of the democratic, reflective action we might take involves questioning accepted definitions of particular social entities such as intelligence, school success, a good society, popularity, or competence. As active interpreters with a social and ontological imagination, we can redefine such notions in more just and conceptually expanded ways. In such a context, we can involve ourselves and others in a process of social reconstruction, edu-

cational reconceptualization, and self-improvement. According to an epistemology of complexity, we hold the power to reconstruct our consciousness. If this is the case, then in a reflective ontological context, we possess the ability to reshape ourselves—a process that given our location in the social web of reality concurrently demands that we reinterpret our traditions and reinvent our futures together in solidarity with other self-directed human agents.

The thinking of teachers and students is intimately connected to these ontological features. As epistemologically conscious teachers and students get behind the curtain of the lived world, they come to understand both the complexity and the limitations of history. Teachers ask not only how do we know but also why does knowing matter to us in this particular place and time? How does this knowledge shape me? What does it demand of me now that I know it? Such questions are central to the reconceptualization of the civic self and to the future of democracy in a world where power squashes democratic impulses (Pang, Gay, and Stanley, 1995). Given such hostile sociopolitical circumstances, democratic educators seek catalysts for ontological evaluation. How do we use our epistemological consciousness to push the boundaries of humanness?

A key step involves freeing ourselves from the machine metaphors of positivism. An epistemology of complexity recognizes the reductionism of viewing the universe as a well-oiled machine and the human mind as a computer. Such ways of seeing subvert an appreciation of the amazing life force that inhabits both the universe and human beings. This machine cosmology positioned human beings as living in a dead world, a lifeless universe. Ontologically, this positivism separated individuals from their lifeless surroundings, undermining any organic interconnection of the person to the cosmos. The life-giving complexity of the inseparability of human and world was lost, and the study of people was *abstracted*—removed from context. Such a removal has had disastrous ontological, psychological, and social effects. Human beings in a sense lost their belongingness to the world and people around them (O'Sullivan, 1999).

Again, Ladi Semali and my (1999) concept of the importance of indigenous knowledge in the twenty-first century emerges. With the birth of modernism and the scientific revolution, many premodern, indigenous epistemologies, cosmologies, and ontologies were lost—ridiculed by European modernists as primitive. Although there is great diversity among premodern worldviews, there do seem to be some discernible patterns that distinguish them from modernist European perspectives. In addition to developing meaning systems that were connected to cosmological perspectives on the nature of creation, most premodern viewpoints saw nature and the world-at-large as living systems. Western, often Christian, observers condescendingly labeled such perspectives as *pantheism* or *nature worship*

and positioned them as an enemy of the notion of monotheism. As such, they needed to be stamped out and replaced with a belief in the one true God. Not understanding the subtlety and nuance of such indigenous views of the world, Europeans subverted the sense of belonging that accompanied these enchanted views of nature. European Christomodernism transformed the individual from a connected participant in the drama of nature to a detached, objective, depersonalized observer.

The modernist individual emerged from the process alienated and disenchanted. As Edmund O'Sullivan (1999) puts it, Cartesianism tore apart "the relationship between the microcosmos and the macrocosmos" (82). Such a fragmentation resulted in the loss of cosmological significance and the beginning of a snowballing pattern of ontological imbalance. A reflective ontology involves the process of reconnecting human beings on a variety of levels and in numerous ways to a living social and physical web of reality, to a living cosmos. Teachers in this context help students connect to the civic web of the political domain, the biotic web of the natural world, the social web of human life, and the epistemological web of knowledge production. In this manner, we all move to the realm of reflective ontology where new ways of being and new ways of being connected reshape all people.

Philip Wexler (2000) picks up on these ontological issues, arguing that an intuitive disenchantment with positivist fragmentation and its severing of the self-environment relationship are fueling a diffuse social revaluation. He employs the term *revitalization* for this mass decentered movement taking place throughout Western societies. It constitutes an attempt, he contends, to resacralize our culture and ourselves. Such an effort exposes the impact of Eurocentrism and positivism on what human beings have become, as at the same time it produces an ontological "change from within." Understanding the problems with positivism's lack of self-awareness or concern with consciousness and interconnectedness, Wexler's resacralization picks up on wisdom traditions to construct an ontology of complexity. In this context, the Cartesian bifurcation of the mind and body is repaired, and new relationships and comfort with the body, mind, and spirit are pursued. In the transcendence of modernist notions of bodily ego-greed, a new understanding of the body's role in meaning making is obtained.

Resacralization positions the body in relation to cognition and the process of life itself. The body is a corporeal reflection of the evolutionary concept of *autopoiesis*—self-organizing or self-making of life. *Autopoiesis* involves the production of a pattern of life organization. Cognition in this ontological context involves the process of self-production. Thus, life itself is a cognitive activity that involves establishing patterns of living, patterns that become the life force

through self-organization. If life is self-organized, then there are profound cognitive, epistemological, and ontological implications. By recognizing new patterns and developing new processes, humans exercise much more input into their own evolution than previously imagined.

Human evolution (and, in the context of our discussion, cognitive evolution) is not as random as previously thought. Life is self-produced in forms of escalating diversity and complexity. The interaction of different living forms can catalyze the self-production feature of living systems. In both its corporeal and its cognitive expressions, the *autopoietic* life process reaches out for difference, for novelty, to embrace its next ontological level (Wexler, 2000; Capra, 1996). Teachers who understand an epistemology of complexity can use these ontological notions to rethink their lives and their teaching. With these understandings, we can "self-organize and reorganize" education to achieve new levels of complexity where new patterns and processes allow us to rethink the nature of our being and the possibility of our being. Schooling in this complex context takes on an unprecedented importance, as it pursues ways of knowing and being that shape the evolution of the human species. Thus, standards of complexity and the epistemological complexity on which they rest not only can improve schooling but also can place education where it should have been all along—at the forefront of our journey into the future.

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AN EXAMINATION AND REDESCRIPTION OF EPISTEMOLOGY

Barbara J. Thayer-Bacon

The Blind Men and the Elephant

There were six men from Industan
to learning much inclined
who went to see the elephant
though each of them was blind
so that by observation
each might satisfy his mind.[1]

Many of us are familiar with this poem, having read it in school and laughed at the silly blind men who didn't know they were feeling different parts of an elephant: One felt the tail and thought the elephant was like a rope, another felt a leg and thought the elephant was like a tree. One felt the ear and decided the elephant was like a fan, one felt the trunk and reported the elephant was like a snake, one felt the side of the elephant and suggested the elephant was like a wall, and the last man felt the elephant's tusk and announced the elephant was like a spear.

The poem serves as a metaphor for this chapter. Maybe the six blind men from Industan are not so silly after all; maybe they represent all of us, as we struggle to make sense of the complex world in which we live. I plan to refer to the elephant poem and see if it can't help us understand the world in a new way and from a different perspective than we've been taught.

Richard Rorty describes philosophers as poets, prophets, and soothsayers. Theirs is the task of trying to envision the world in new ways, trying to redescribe the familiar through the use of imagination and metaphors (Rorty, 1989). Philosophers do not have a "God's-eye view" or an "inside line to truth." Their skills, the ability to reason and envision, are ones that are available to all, as are their tools, including logic and critical thinking. With this in mind, I plan to use the metaphor of the six blind men from Industan and their elephant to take another look at knowledge. I will look at the distinctions and categories

people have created to describe knowledge and suggest that perhaps these past descriptions are in need of revision. I will suggest that defining and describing *epistemology*, a study of theories of knowledge, the way many others have described it leads to a narrow representation of the world and creates serious problems that need to be addressed. Is it possible that in defining knowledge we have excluded qualities that are essential to knowledge? Have we focused on parts of the elephant and lost sight of the larger animal? Is what we are each describing part of something much larger and more comprehensive then any of its parts? I strive to soften distinctions and encourage a more interactive perspective among categories such as epistemology, metaphysics, and psychology; the knower and the known; and belief and knowledge.

This examination and redescription of epistemology as a branch of philosophy is necessary in order for me to be able to offer my own epistemological theory, what I wish to describe as the nurturing of a *relational epistemology*.[2] This chapter is meant to motivate the development of an expanded conception of epistemology. The further development of a relational epistemology is published in another article.[3] In this chapter I look at others' contributions to epistemological theory. In doing so, I hope to bring out some important issues and concerns, as well as others' attempts to address these concerns. I intend to highlight past epistemological theories and then turn my discussion to some key theorists who are currently working in the field of epistemology, hoping that the past theories, which have influenced the current theories, will indirectly be included in the conversation. I have chosen these people based on their extensive contributions to the discussion and my judgment that they represent different perspectives that need to be heard.[4] The second section of the chapter highlights key classical epistemological answers to the question, What is it to "know"? The third part describes current epistemological theories and uses these theories as a way to examine the questions and concerns others have raised about a traditional approach to epistemology. The fourth part concludes with the need to redescribe epistemology.

The Elephant Poem in Relation to Past Theories

Please imagine that the elephant poem is a metaphor for theories that explain what it is to know—epistemological theories. There are many examples of important theories from our past, and it is impossible for me to do any of them justice in the space allowed. But I hope that by highlighting some and comparing them to the elephant poem, I will demonstrate the need to reexamine our conceptions of epistemology.

Plato described knowledge as something that was Ideal, beyond the grasp of the world that we experience as reality (Plato, 1970a, p. 17). Even though we may each experience a different kind of elephant, we can all un-

derstand what an elephant is, because we each have an idea of "Elephantness" in its Ideal Form. According to Plato, our souls have all knowledge before they are born and inhabit a physical body. It is the inhabiting of a physical body that causes our souls to forget that knowledge. Learning is remembering what we each already knew: "The soul, then, as being immortal and having been born again many times, and having seen all things that exist, whether in this world or in the world below, has knowledge of them all; . . . for as all nature is akin, and the soul has learned all things, there is no difficulty in a man eliciting out of a single recollection all the rest . . . ; for all inquiry and all learning is but recollection" (Plato, 1970a, p. 17).

It does not matter to Plato that each of us experiences the world in a different way; because we are souls inhabiting our bodies, we are blind to knowledge (what is true), just like the six blind men. We cannot trust our senses and be sure we really know what it is we are experiencing. We must tune in to what our souls know. Only by tuning in to the knowledge one's soul already possesses can a person hope eventually to realize the truth of what he experiences. Others, such as teachers, may act like midwives and help guide the soul on its journey, but ultimately each soul must find the answers by itself. Finding the answers, realizing the Ideals, is to have knowledge of what is true, according to Plato.

"The Myth of the Cave," in Plato's *Republic*, is a wonderful story that presents "reality" as something that is socially constructed. The people in the cave experience what they think is "reality"; but what they are really experiencing are shadows on the wall, as they sit, chained and unable to move or turn their heads to see there is a fire behind them; objects they thought were real are just shadows, the real objects being carried by people behind them. Like the blind men from Industan, their senses deceive them, and they cannot trust their experiences: "The prison-house is the world of sight, the light of the fire is the power of the sun, and you will not misapprehend me if you interpret the journey upwards to be the ascent of the soul into the intellectual world, . . . my opinion is that in the world of knowledge the Idea of good appears last of all, and it is seen only with effort" (Plato, 1970b, p. 85).

Many students who read Plato's *Republic* and "The Myth of the Cave" are struck by the profoundness of his description. He has escaped the problem of our experiences of "reality" being partial and flawed by saying we should not trust our experiences anyway. What we need to do is trust our souls. Plato points out one of the key tools available to any person striving to know truth: what he calls *divine contemplation*. Divine contemplation is the tuning in to one's soul in search of answers.

> Whereas our argument shows that the power and capacity of learning exists in the soul already; and that just as if it were not possible to turn the eye from

> darkness to light without the whole body, so too the instrument of knowledge can only by the movement of the whole soul be turned from the world of becoming to that of being, and learn by degrees to endure the sight of being, and of the brightness and best of being, or in other worlds, of the good. (Plato, 1970b, p. 86)

Aristotle argued that knowledge was obtained through tuning in to the soul, to one's ideas, and testing out those ideas through one's experiences (Aristotle, 1970). He presented the case that ideas can be deceptive and misleading, just as our experiences can be deceiving. We know that six blind men can feel different parts of an animal, develop ideas of what they are experiencing, and never realize they are each feeling the same animal. If each of these six men never have an idea of elephant, but rather have ideas of ropes, snakes, spears, fans, walls, and tree trunks, their ideas will not help them see the truth about what they are experiencing. Aristotle hoped that the use of both our ideas and our experiences would lead us to knowledge: "Reasoning on matters of conduct employs premises of two forms . . . one universal is predicated of the man himself, the other of the thing" (Aristotle, 1970, p. 117).

Stating that one's ideas and one's experiences can both be flawed, Aristotle sent the Western world philosophers off on a task that still has not been resolved. Some philosophers have developed epistemological theories that have leaned in Plato's direction and favored ideas, such as Descartes (1960); some have made suggestions that have leaned toward favoring experiences over ideas, such as Locke (1894). Descartes recommended that the blind men use a doubting method whereby everything they can doubt, they should dismiss, until they reach that which they take to be self-evident; what is beyond doubt is what they can be sure is true. This view says that what our minds believe to be self-evident we can trust to be a mirror of the world as it exists. Locke recommended that, since each of us came into this world as a blank slate (*tabula rasa*) with no knowledge prior to birth, it is our experiences we must rely on, along with our ability to reason.

Others have tried to find a balance between ideas and experience, as Aristotle recommended. Kant suggested that what we can know is not independent reality, "the thing in itself," but always reality as it appears to human beings. Our perceptions of the world are a result of our interaction with the external world and the active powers of our minds (Kant, 1966). C.S. Peirce suggested that since all of us are flawed individuals who can't trust our ideas or our experiences, what we need to do is work with others, as a community of rational inquirers, to help further our knowledge and understanding (Peirce, 1958).

Like Aristotle, Peirce approached truth from a scientific perspective. Peirce said we seek answers, new solutions, and therefore get closer to truth, as we run into problems with our current beliefs and start to have

doubts about what we thought was "truth." For Peirce, the only method other than a priori speculation (Plato's Ideals) is the "self-corrective" scientific method, whose experimental results are always subject to revision on the basis of further evidence (Peirce, 1958, p. 92).

Truth, for Peirce, is absolute, but none of us will ever know absolute truth, because we are all limited beings. This is Peirce's theory of *fallibilism*. Truth is something we are emerging toward, for with each generation of inquirers we have more understanding. "The opinion which is fated to be ultimately agreed to by all who investigate is what we mean by the truth, and the object represented in this opinion is real. That is the way I would explain reality" (Peirce, 1958, p. 133). Truth is not something one person can find, all on his own; it is found through the collection of all rational inquirers' investigations; because it takes all of us, the truth in the end will be the same for all of us. "The method [for fixing beliefs] must be such that the ultimate conclusion of every man shall be the same, or would be the same if inquiry were sufficiently persisted in. Such is the method of science" (Peirce, 1958, p. 107). As Peirce described truth, it is something the last person on earth will know: "True opinion must be the one which they would ultimately come to" (Peirce, 1958, pp. 133–134).

Kant would advise the six blind men from Industan that they can never know the elephant as the-thing-in-itself, Elephant, but only the elephant as it is represented in relation to their experiences and their minds. Peirce would advise the six blind men to start talking to each other and share the information each of them has. Only by acting as a community of inquirers can they hope to gather a more complete understanding of elephants, one they can all agree upon. But they had better be cautious and aware that because they are limited human beings, they will likely not understand all there is to know about elephants because the next generation will build on the knowledge they have gained through sharing with each other, and the next generation will reach an even better understanding of elephants than current inquirers can possibly reach.

The Elephant Poem in Relation to Current Theories

The issues and concerns about epistemology are still debated today as heatedly as they were in early Greece. If we look at the debate in the present, it can be described this way: We begin with the world as a given (there is an elephant), and then say any description of the world, the sense that is made of the world, is something people create; the meanings people give to the world derive, in part, from the descriptions people develop to explain the world, "reality." So the blind men of Industan offer descriptions of what they experience, each experiencing a different part of an elephant; this feels this way, based on their past experiences and the meanings that have been attached to those experiences.

When one man feels a snakelike shape, the trunk of the elephant, he describes the elephant as a snake, based on the meaning he has attached to an object having that particular shape. Attaching meaning to what each man describes helps each person make sense of the world he is experiencing, the part of the elephant.

Sociologists have labeled this making sense of the world the "social construction of reality" (Berger & Luckmann, 1966).[5] People give meaning to the reality they experience, through language, and then pass that meaning on to their children through conversation and education. Children internalize their parents' socially constructed "reality" through the language they learn and what they are taught. "The child does not internalize the world of [his or her] significant others as one of many possible worlds. [She or he] internalizes it as the world, the only existent and only conceivable world, the world tout court" (Berger & Luckmann, 1966, p. 134). One could imagine that each blind man from Industan had children whom he proceeded to teach that an elephant is a fan, a snake, or a spear, because that is "reality" as he knows it. He has pieced together that "reality" and then passed it on as "reality" to his children. His children do not know that this view of elephants is partial or flawed; they take it to be truth, the only way an elephant could possibly exist, for example, is in the shape of a fan. Elephants as fans (or snakes, or walls) is the only way they can conceive of "Elephantness."

If descriptions of the world are created by people, that means they are open to reexamination, criticism, and possible redescribing. For we know from the six blind men poem that people are fallible and flawed in their understandings; their experiences and insights are partial and limited, and their views are affected by their surroundings. Descriptions of the world and theories of why things are so are explanations that are socially constructed by people, who are contextual beings. People exist in relation to other people,[6] and they are "embedded and embodied" (Benhabib, 1992). People are born into a setting, a certain time and place, surrounded by a certain culture, inhabiting a body that is uniquely their own, relating to at least one other person (even in utero), their mother. All of this social context makes it necessary to assume that people have a past and have been affected by other people's views. They are not neutral, impartial, objective beings; their approach to the world is transactive (Dewey, 1965), meaning that people affect the world and each other, individually and collectively, just as the world affects people. My belief is that people are able to become reflective and critical of their context, but how that happens will need to be discussed. Improving people's skills necessary for the development of knowledge, such as reasoning and critiquing skills, imagining and intuiting skills, and communicative and relational skills, makes it possible for knowledge to continue to grow and

develop, as well as be redescribed and become more beautiful.[7]

Dividing Up the Elephant

Fields of study such as philosophy, psychology, sociology, and anthropology are descriptive categories people have developed over time as a way of making sense of the world. (I am referring to the descriptive categories that have been developed by the Euro-Western world, as those are the ones of concern here.) Branches within those fields provide further descriptive categories. For philosophy these branches include metaphysics, aesthetics, ethics, politics, and epistemology. Epistemology, as it has been defined historically by philosophers, involves study of the justification of people's beliefs, not how people come to believe certain things (the province of sociologists and psychologists). Philosophy is concerned with the normative status of knowledge claims and what warrants those claims (the evidence for the claims); psychology and sociology are concerned with causal questions of how beliefs are developed.

Epistemology is a branch of philosophy that considers theories of knowledge and looks at truth as a necessary condition for knowledge. One cannot "know" something that is false; such knowledge would not be classified as knowledge, but rather as a belief. Beliefs are not necessarily true. Mere beliefs, or right opinions, are stated as "S believes that p." "S" is the subject, and "p" is the object of the proposition. Rational beliefs are ones that are supported by compelling reasons ("S has good reason to believe that p"). "S knows that p" means that S has evidence for the truth of p, S believes that p, and that p is true.[8]

If we compare the preceding statements with our elephant poem, we recognize that the blind men take their study of elephants (the world) and divide it up into more manageable categories. When they are trying to understand how they have come to know about the elephant, they say they are studying psychology. When they are looking at themselves in relation to others studying the elephant, they say they are studying sociology. They say that with either of these kinds of studies, the kinds of claims they will be making are causal ones.

When the blind men are trying to make universal claims of truth about elephants, they are studying philosophy. They say they offer evidence to support those claims. When they are trying to make universal claims about the beauty of elephants, the blind men say they are studying aesthetics. When they are looking at the essence of elephantness, and the necessary and sufficient qualities of elephants, the blind men say they are studying metaphysics. When they are trying to make claims about what they know about elephants in a universal sense, they are studying epistemology. As the blind men define knowledge, they will only say that they know something that is true. In order for something to be true, they say, they must believe that

something is true, have compelling reasons to support their belief about such-and-such being true, and such-and-such must be true.

Let us consider these categories and distinctions, as the blind men have defined them, and see if there are any problems in dividing the world (elephants) up in this way. Have we missed anything by focusing on elephants in parts? When we divide the elephant into parts in order to handle better the studying of it, have we stopped understanding the whole? Have we ever been able to understand the whole elephant? Do these categories provide the best way to consider elephants, or should we redesign our categories and redescribe our studies of elephants (the world)? In separating the study of the people who study the elephant from study of the elephant itself, have we created any problems or concerns? I will begin in the middle, with the field of epistemology, as commonly defined, then move to the distinctive studies within philosophy, then look at the field of philosophy itself, in relation to others, in hopes of teasing out some problems and concerns that dividing up the world this way may have caused or overlooked. As I do so, I plan to add some "blind women's" perspectives into the discussion.

Belief, Knowledge, and Truth

Given that I am hoping to offer an improved theory of knowledge, a relational epistemology, I begin with epistemology and the suggestion that we take a closer look at how the field has been defined. The Enlightenment conception of epistemology assumes "(1) that knowledge properly so-called is autonomous in that it is of no epistemological significance whose it is; (2) that knowledge acquisition may be of psychological interest but it is irrelevant to an epistemologist's quest for criteria of justification, validity, and verification; and (3) that knowledge is objective in the sense that discussion of the character and epistemic circumstances of subjects has nothing to contribute to the proper epistemological task of assessing the product" (Code, 1987, pp. 25–26). In other words, the blind men are trying to gather knowledge of elephants. Who these blind people are or how they derive this knowledge is not of concern; from an epistemological perspective, what's of concern is the knowledge they derive. That derived knowledge is separate from the blind men who have derived it, and if what they derive is in fact knowledge, it should be true for any of us, no matter who we are, what our perspective is, or what our situation is. From the perspective of the field of epistemology, as commonly defined, what the blind men need to be concerned with is what evidence they will have in finding knowledge.

Remember my earlier statement that the blind men would define as knowledge only something that is true. In order for something to be knowledge, the blind men (S) must believe that such-and such (p) is true, they must have compelling reasons to support their belief that p is true, and

p must be true. The first requirement, that the blind men must believe that p is true, doesn't help find knowledge very much, for we know it's possible for the blind men to believe that an elephant is a fan or a spear or a rope! (Just as we know it is possible for people to believe the world is flat.)

How about the second requirement? The blind men need "compelling reasons" to support their belief, but what counts as "compelling reasons"? This has been a heatedly discussed topic since the beginning of the study of philosophy. Remember, Plato said we can't trust our experiences alone to give us good reasons, and Aristotle said we can't trust our ideas alone, either. The criteria philosophers have used to help judge reasons include clarity, consistency, coherency, cohesiveness, and comprehensiveness. Are the reasons clearly stated, do they follow logically and not contradict each other, do they make sense, do they answer all the questions we can ask, do the reasons fit together with other beliefs we consider knowledge? Isn't it possible to imagine that our blind men are very clever and can give reasons to support their beliefs about elephants that are clear, consistent, coherent, cohesive, and comprehensive, and yet not be true? (We certainly had good reasons to believe the world was flat.) And isn't it possible to imagine that each of our six blind men would have different interpretations of what they take to be clear, or consistent, or coherent? In other words, aren't the criteria themselves subject to different interpretations?

This leads us to the final criterion for knowledge, that p is true. According to Enlightenment epistemological theory, the ultimate object of knowledge is reality itself. Even though one blind man may believe that the elephant is a fan and have compelling reasons to justify his belief, that does not make the elephant a fan, unless it is true that it really is. But how is the blind man ever going to know whether what he believes is true or not? We seem to have ended up in a circular theory. Does this mean that there is nothing we can say that we know for sure? Is knowledge ultimately based on faith? Somehow such a theory of knowledge does not appear so helpful after all. What's the point of having a theory of knowledge about the world when there is nothing we can say that fits safely into that theory, for there is nothing that we can say for sure that we know?

Maybe we can find some help in understanding the value of *epistemology* as a category by turning to a current epistemologist. I will describe Harvey Siegel's position because it is clearly an absolutist one and contrast it with a qualified relativist position embraced by many "blind women" feminist philosophers such as Flax, Code, Jaggar, and myself.

Absolutism versus Qualified Relativism

Siegel has been complimented by philosophers such as Burbules for moving epistemology away from vulgar absolutism to an absolutism that is

less dogmatic, one that opens the door to fallibilism and pluralism. Siegel says that "contemporary epistemologists—absolutists and relativists alike—reject certainty, dogmatism, and all the other features of vulgar absolutism" (Siegel, 1987, p. 164). The sort of absolutism he recommends is a "non-dogmatic, non-certain, corrigible, fallible, non-unique absolutism" (Siegel, 1987, p. 164).

Translated to our elephant metaphor, Siegel is saying that all of us who are currently working in the field of epistemology realize that we cannot be certain we understand all there is to know about Elephants (the world, as reality, as truth). We all understand that people are limited and make mistakes and that people have many different views and perspectives on elephants.

Although such a description of absolute may not sound very absolute, for Siegel, "*absolutism is a necessary precondition of epistemological inquiry*" (Siegel, 1987, p. 165; italics added). What's absolute about a "non-dogmatic, non-certain, corrigible, fallible, non-unique absolutism" is "the possibility of objective, non-question begging evaluation of putative knowledge claims, in terms of criteria which admit of criticism and improvement" (Siegel, 1987, p. 162).

In other words, Siegel believes there must be some way to evaluate our different theories on elephants and judge that some are better than others; at the same time he acknowledges that what we use as criteria for judging people's theories on elephants could also be flawed and must be open to criticism as well.

For Siegel, a "relativist must regard epistemological debate as pointless, insofar as there is, for the relativist, no possibility of genuinely answering central epistemological questions" (Siegel, 1987, p. 165). The relativist "gives up the absolutist conception of rightness" and therefore "cannot assert that foundationalism (non-foundationalism), correspondence (coherence) theories of truth or justification, causal (reliabilist, defeasibility, etc.) theories of knowledge, or the like are non-relatively right. *But genuine epistemological debate does have as its aim the determination of the non-relatively right answers to these questions*" (Siegel, 1987, p. 166; italics added).

While Siegel goes to great length in his book, *Relativism Refuted*, to distinguish absolutism from "vulgar absolutism," he is not so gracious with *relativism*. According to Siegel, only a "vulgar absolutist" believes that it doesn't matter what one's perspective is, in relation to the elephant; one can still know the elephant in its entirety (truth). Vulgar absolutist epistemological orientations have been labeled by feminists, such as Lorraine Code, with the help of Donna Haraway's astute observation, as "the view from nowhere." But is there only one view of relativism, or is it possible that there is a "vulgar relativist" view as well as a "qualified relativist" view? "Vulgar relativism," the belief that it doesn't matter what one's perspective is, in relation to the elephant, for all perspectives are right (true), has been labeled

by Code and Haraway as "the view from everywhere." "Relativism is a way of being nowhere and claiming to be everywhere" but "absolutism is a way of being everywhere while pretending to be nowhere"(Code, 1993, p. 40).

We saw from the preceding discussion concerning the way epistemology has been defined, and the guidelines that have been given for helping to find knowledge, that indeed the guidelines seem rather circular and potentially pointless. They don't seem to help us find knowledge (what is true). At most, we can hope that Peirce is right in saying that we are getting closer to truth. Believing that we cannot find the truth about elephants does not mean we have to embrace all theories about elephants as being true. What it does mean is that we must acknowledge that we don't know the Truth about Elephants. We still try to describe elephants and seek to find out more information and learn more about elephants. We continue to inquire. And we try to support our understandings about elephants with as much "evidence" as we can socially construct, qualified by the best criteria upon which we can agree. A qualified relativist, such as Jaggar, Flax, Code, or myself, grounds her claims "in experiences and practices, in the efficacy of dialogical negotiation and of action" (Code, 1993, p. 39).

While Siegel agrees with the need to reject a formal conception of rationality and to "regard rationality as a substantive epistemic notion, involving the contents of sentences rationally related" (Siegel, 1992, p. 228), he says that if rationality is determined by "the actual activities, decisions, and judgments which people make, then I see a big problem: namely, there is no room on this view for actual activities, decisions, and judgments to be irrational, for there is no role for criteria to function in assessing specific activities, decisions, and judgments as rational (or not)" (Siegel, 1992, p. 229). Siegel wishes to argue that "rationality" (as a concept) is dependent on the idea of "absolutism," and "absolutism" is dependent on a criterion of "rightness" (truth) that must be objective and nonrelative, not something socially constructed. Yet he has agreed that the criteria used to judge rival claims must be subject to critical assessment and improvement. Siegel says he is not saying philosophers have a "God's-eye view of truth" or claiming that he has found an Archimedean point. If the presently accepted criteria (the absolutist's belief system) can be critically assessed, Siegel suggests the criteria can be self-correcting and corrigible.

> Principles embody rationality and define and assess reasons in a tradition at a time. As the tradition evolves, so do the principles which define and assess reasons. So what may count as good reason in a tradition may change over time; today's compelling reason may be seen as less compelling tomorrow . . . Still, the principles which determine the compellingness of reasons at a time apply to all putative reasons impartially and universally. . . . [T]he principles

> which define reasons and determine their force may change, but rationality remains the same. (Siegel, 1987, p. 251)

But if one embraces fallibilism and pluralism, one has to admit that the criteria as presently accepted could be wrong, *right now*. A qualified relativist position, such as the one I am proposing, says that, given the presently accepted criteria, this is the best judgment I can make, but I am aware that my criteria may be limited and I could be wrong. Although this statement seems to be exactly what Siegel is saying with his definition of "absolute," as cited previously, it really is not, as Siegel believes he can say even more. Here is where I think epistemologists who embrace an Enlightenment conception of epistemology, as defined previously, overestimate their abilities. I believe fallibilism and pluralism are theories that admit to the social construction of reality. Siegel does not agree with me. While he admits that what he believes, right now, might be wrong—the possibility is there—that does not itself show that he *is* wrong, right now. If it did, then everything would in fact be wrong, since everything could possibly be wrong. If not wrong, Siegel says, then what he believes is right: *absolutely* right (right/wrong being understood as contradictories). And his reasons can also be absolute, as he has defined *absolute*.[9]

I think Siegel's point is: "As long as I believe p is true, and I have compelling reasons to believe p is true, I can claim to be right, because p is true, even though my claiming to be right is always subject to fallibilism. My being right, absolutely, is independent of my showing that I am." This is because there is a p that is true, independent of me and whether I can show that I am right or not. There is an elephant, who is an elephant, absolutely, independent of what any of us think about elephants and how any of us have defined elephants. Siegel is saying: "I am right, absolutely, if what I believe is right." What I am saying is: "I believe I am right, qualified by a socially constructed view of knowledge, so I know I could be wrong."

Enlightenment philosophers have defined epistemology in such a way that *the concept of absolutism is built right into the definition of what epistemology is*. Siegel, who embraces this definition, helps us to understand a central concern that all epistemologists must address. The Enlightenment conception of epistemology implies that people must have something absolute that they can appeal to, theory, or they cannot claim to know what is right. Unfortunately, or fortunately (depending on one's view), in the end the criteria used to support theories are fallible themselves, and that must be admitted. I cannot offer truth claims that are absolute any more than Siegel or anyone else can. I can offer new theory to try to explain how it is we know and argue and debate with people as to why I think my description of reality is more inclusive or beneficial than others presented previously. That is all any of us can do.

Historically, epistemologists have assumed the value of absolutism in the

very way they have defined the field of epistemology. Absolutist epistemologists have argued for the value of absolutism because it offers people the opportunity to judge what's right; qualified relativists, such as myself, push for the inclusion of context because it forces people to open the door toward acknowledging they could be wrong, that "right" is judged from a social perspective. We are all, as epistemologists, hoping to warrant our theories in reality and to arrive at knowledge, but qualified relativists are acknowledging how extremely difficult that is to do, given that each of us is so embedded within our own socially constructed "realities."

Philosophers who embrace the Enlightenment conception of epistemology not only overestimate their abilities; they also tend to act as gatekeepers to the field of epistemology. Absolutist epistemologists do not consider qualified relativists even to be epistemologists due to the fact that qualified relativists have not embraced the field of epistemology as absolutist epistemologists have defined it, with an assumption of absolutism. Whereas some feminists, such as Code, conclude there can be no feminist epistemology given the Enlightenment conception of epistemology, I choose to try to broaden the definition of epistemology.

I would also like to present the case that the way the branch of philosophy called epistemology has been defined, in terms of distinguishing it from other branches, limits the possible questions and concerns an epistemologist can address to a dangerously thin level. Let me elaborate further.

Ontology and Epistemology

Philosophers have distinguished ontology as a branch of philosophy, separate from epistemology, since the days of the early Greeks. By making such a distinction, philosophers have assumed that being can be separated from knowing, for ontology is the study of being (what is, the essence of things) and epistemology is the study of knowing (what is truth). These categorical distinctions separate knowers from knowledge/ideas. The distinctions treat knowledge as if it has a life of its own. This seems to me to be another central problem for philosophers.

As I have established, philosophers have created categories, distinguished fields of study, and branches within those fields, which are based on certain values and, therefore, biases. I explained in the discussion on belief, knowledge, and truth that those categories are based on an assumption of absolutism. Separating knowledge from being assumes philosophers are able to be neutral, objective seekers of truth. It assumes that it doesn't matter which blind man is studying elephants, from which perspective, or that the blind man is from Industan. The character and circumstances of the knowers is not important; it is the assessing of the product, knowledge, that is important. And yet we know from the work of feminist scholars as well as scholars in the area of cultural

diversity that people's values and biases can be found in how they have defined what questions are worth considering, what methods for addressing those questions are considered valid, and what ideas and solutions are sound (Jaggar, 1989). I agree with this statement by Flax: "I assume here that knowledge is the product of human beings. Thinking is a form of human activity which cannot be treated in isolation from other forms of human activity including the forms of human activity which in turn shape the humans who think. Consequently, philosophies will inevitably bear the imprint of the social relations out of which they and their creators arose" (Flax, 1983, p. 248).

Gregory Bateson, a naturalist, effectively described the problem this way:

> In the natural history of living human being, ontology and epistemology cannot be separated. [One's] (commonly unconscious) beliefs about what sort of world it is will determine how [one] sees it and acts within it, and [one's] ways of perceiving and acting will determine [one's] beliefs about its nature. The living [human] is thus bound within a net of epistemological and ontological premises which—regardless of ultimate truth or falsity—become partially self-validating for [him/her]. (Bateson, 1972, p. 314)

Let me give an example of this "net of epistemological and ontological premises," and how the premises become self-validating, that can be related to the elephant poem. Historically, many epistemological theories have described knowers as autonomous, rather than describing individual knowers as being developed out of a community of other knowers, certainly affected by their environment and the people that surround them. Peirce is an example of an exception to this autonomous approach to knowers, as he recognized the influence we have on each other's opinions. But even Peirce argued that we each have "a critical self" within us, which helps us persuade others and makes it possible for us to distinguish between absolute truth and what we do not doubt (Peirce, 1958, p. 191). That "critical self" within us is what separates us from others and helps us be able to think on our own. Peirce also favored a "scientific method" for approaching knowledge, one based on reason and logic, rather than one that might acknowledge the value of imagination and intuition, for example.

If one assumes a person can discover truth by himself, then one will approach the study of elephants on an individual basis. Each of the six blind men from Industan will not worry about trying to discuss his individual theories with the others who are also examining the elephant, in hopes of gaining a better understanding. Instead, each blind man may even avoid contact with the others for fear they might bias his own inquiry or distract him. A person who believes knowers are autonomous will trust that he can critique, from his own individual perspective, and find fault with what oth-

ers have proposed. Yet we can understand, with our example of the blind men, how faulty one individual's perspective can be. On his own, a person can decide that the elephant is like a snake or a spear! If a man believes that knowers are autonomous, he is capable of believing he is right without necessarily testing his theory against those of others. Even when he goes to test his theory against other theories, if he believes he has the ability to critique others' theories against his own, he will confidently dismiss others' theories (that the elephant is like a wall or a rope) as faulty.

If the blind men favor the "scientific method," as Peirce and many other philosophers have throughout time, then each will try to collect data, likely based on their senses and their ability to reason. Yet we can predict that with such an approach to knowledge, the men may never arrive at an understanding of the whole elephant, as it exists. They will need to be able to imagine a whole that is greater than the sum of its parts. They will need to be creative and use their intuitive skills, and they will find that if they rely on their feelings and emotions as well as their mind, they will be more successful in their efforts to be creative and intuitive.

I want to question the assumption that knowers are autonomous, given the view that our "reality" is something that is socially constructed. I also want to consider whether or not it is even valuable to view each of us as autonomous knowers. Accepting Peirce's view that we are all fallible beings and that truth is something we continue to get closer to as we work together and share our perspectives with each other, why would we want to embrace a view of epistemology that encourages us to look at people as separate knowers? Why not embrace a description of epistemology that encourages us to see how interrelated and interconnected the world is, including the people within it? If Peirce is right, then our only hope of understanding the world, even partially, comes from our willingness to work together and welcome each other's contributions in an effort to understand them, before we critique them and dismiss them.

I also want to question the assumption that the best approach to knowledge is through the use of one's reasoning ability, to the exclusion of other potential tools. It is not that I want to dismiss reasoning as a valuable tool, for certainly it is one I am relying on considerably in the writing of this chapter. But I am also using the metaphor of six blind men from Industan and their study of the elephant to encourage a better understanding of what knowledge is. The metaphor helps us to imagine and intuitively make connections, and to understand how ideas are related. The metaphor, if successful, improves understanding. I did not think of this metaphor by methodically reviewing research articles and epistemological theories. It came to me as a flash of insight, after struggling to find a helpful image. It did not come to me when I was using my logical reasoning skills, but rather when I was not "working" at all, but

instead was getting ready for bed. I suspect most of us make connections and understand the world in new ways, often "by accident," when we are *not* trying to figure things out. Acknowledging and valuing the "other" tools available to us in knowing the world we live in is something I hope to accomplish with a relational epistemological approach.

Philosophy and Psychology

I have demonstrated that the categories and distinctions concerning epistemology as a branch of philosophy are based on assumptions of absolutism and autonomy, and favor methods for understanding that emphasize reason and the mind. What about the distinction that has been made between psychology and philosophy? Philosophers have described the epistemological task of assessing the quality of reasons as being quite separate from any discussion of the character and epistemic circumstances of subjects. Historically, epistemological theorists have argued that criteria for warranting knowledge claims can be found without having to consider the way human beings know. This view of knowledge treats it as a product quite separate from human beings, some "thing" that is "out there" or "in here." Depending on one's perspective, therefore, any of the six blind men should be able to discover the truth about elephants, either by using their experiences and exploring elephants "out there" or by tuning into their soul's awareness of elephants "inside" themselves.

If one views knowledge as something people contribute to, as something that people weave together, then the distinctions between knowers and knowledge are no longer so clear. In fact, they become intertwined and interrelated. When one begins to understand the interactive connection between social beings and ideas, one realizes it is necessary to look at the kinds of relationships people experience and which ones enhance the development of ideas and the weaving of knowledge. Ethical and political issues need to be addressed in an epistemological theory that looks at knowledge as created by *people*, not just knowledge per se, for the quality of the social relationships people have will affect the ideas being constructed or created, especially in terms of whether or not the ideas have the opportunity even to be expressed.

With such a view of knowledge, it becomes important to ask questions like these: Why are these six people who are studying the elephant all men? Why are they all blind, and what effect does their blindness have on their theories about elephants? Where did these men come from, and what is the context of their social situations? How is it they have no prior experience of elephants, yet they are adults and live in a land where elephants are central to their social system?

I wish to argue that any attempt to look at knowledge claims separate from an examination of how those

claims were derived is to make a serious mistake. "A theory of knowledge that lacks a reasonable understanding of how human beings can and do acquire and add to knowledge must be of dubious relevance. Sound psychological insights form an invaluable, sine qua non basis for any theory of knowledge that purports to explicate the way human beings know" (Code, 1987, p. 32). The historical distinctions epistemologists have made effectively remove epistemology as a field of study from the practical-political issues a feminist epistemology must address. As I am redescribing epistemology, any theory of knowledge is clearly affected by knowers and their circumstances. Like Lorraine Code, I argue that "theories that transcend the specificity's of gendered and otherwise situated subjectivists are impotent to come to terms with the politics of knowledge" (Code, 1991, p. 315).

The writing of a relational epistemology is motivated by the desire to expand what epistemology means to include the qualities of knowing that have historically been viewed as detrimental or distracting to the obtaining of knowledge, qualities such as feelings, emotions, and intuitions, which are usually linked to women rather than men. I choose to attempt to redescribe knowledge, and the only tools I have available to me are the same ones that are available to anyone else: my ability to reason and think critically, my intuition, my relational skills and communication skills, my emotions and feelings, and the fact that these are questions I care enough about to pursue. Like any other philosopher, all I can ever hope to do is "attempt to describe how understanding is possible in particular contexts; [philosophy] cannot create a universalizing theory of knowledge that can ground and account for all knowledge or test all truth claims because these are necessarily context dependent" (Flax, 1990, p. 38).

Am I not trying to offer a universalizing theory of knowledge myself? I argue for the need to redescribe knowledge, and I present the case that what I am doing I consider to be epistemology. I cite evidence to support my claim that the field of epistemology has been too narrowly defined and has been based on assumptions such as that absolutism, autonomy, and knowledge are products separate from human beings as knowers. I do think it is possible to justify claims concerning reality, but I am also aware that it is hard to know if what one considers "evidence" is real, rather than socially constructed.

The relational epistemological theory I plan to describe is one I will offer up for discussion. I do not claim to have the best theory, the truest theory, for I know many other theories will follow mine and that others currently are being developed, based on understanding I do not have. Although it is not the truest, the best, the most complete, or the final explanation of knowledge, I do think it has important advantages to offer over other epistemological theories. One of the advan-

tages is that it is a more encompassing description of knowledge, because a relational epistemology includes vital aspects of knowledge that other theories tend to overlook or exclude from the discussion. My attention to and valuing of such qualities as relationality and caring in an intersubjective world should make a relational epistemological theory one that is more inclusive and less open to ideological abuse. Both women and men should find this theory applies to them, including people from different ethnic backgrounds and ways of life. This must be the case if I am right at all in my claim that the theory I am developing is an improved description of how people know. I also hope that a relational epistemology opens the possibilities for valuing contributions from all people. We need each other to nurture the constructing/quilting of knowledge and help make it sound, comprehensive, coherent, and cohesive, as well as beneficial and beautiful. Whether this theory meets these criteria or not (or other criteria deemed valuable and important) must be tested by all of us as contributors to knowledge.

A Redescription of Epistemology

In the process of gaining a voice, growing and developing as human beings, people learn from others. Through others we learn language and our culture, how to communicate with each other, and ways of relating with each other. Because of this necessary social beginning that all human beings have, which helps form who we are, we can never claim to know solely based on our own individual perspective. Who we are as individuals and how we think depend greatly on the social relationships we have with others and the time, place, culture, and social setting we are born into. Qualities such as our language and our gendered customs all affect the constructing of knowledge. *A relational epistemology views knowledge as something that is socially constructed by embedded, embodied people who are in relation with each other.*

Given that we are social beings contingently placed in this world, affecting each other from the beginning, it is easy to understand that we need each other in order to be better thinkers. The idea that one person, all by himself, could claim to find Truths, Facts, or know the Answers begins to sound absurd. Nobody enters this world without a history, which has already begun before birth. Nobody is able to develop thoughts or a language to express one's thoughts without having contact with others. And nobody can come into contact with others without being affected by them. How can we think we find solutions all by ourselves? Such an idea begins to sound arrogant, to say the least. Solutions to problems and truths are things that emerge and evolve, just as we do, for we participate in their development. No one of us can ever hope to find Truth, because of the sure fallibility of individual human knowledge, due to its contingency; but all of us together, as communities of knowers,

can work together, share with each other what each of us understands individually, and collectively help to create theories of knowledge for the next generation of knowers to contribute to. With such a model, knowledge takes on a fluid image, always being redescribed as it changes and develops; the quality of the theories is dependent on the ability of people to relate to each other and share their insights.

With a relational epistemological theory, it is important to discuss how a sense of self is evolved and the importance of that development to the constructing of knowledge. I assume knowledge is constructed by human beings who are in relation with each other. These human beings were once young children, and when they were born they were not born with a sense of self. Historically, epistemologists have tended to treat people, when they come into the discussion, as if they were adults who never went through the process of being formed through relations with others. I assume that people begin their lives in a relationship (even in utero), that they are already interacting with someone else and affecting that other person (mother) as well as being affected by that other person, before they are physically born. People are not isolated beings who are born fully developed. I assume people develop a sense of self through their relationships with others, which are internalized and interact with their own innate constitutions. I take early infantile experiences and child rearing to be vital to the constructing of knowledge.[10] I assume relationships, first with one's mother, then with others, develop prior to as well as simultaneous with the development of language, thoughts, and ideas. It is because we are social beings in caring relations with each other that we develop a sense of self, our own voice. Without the opportunity to develop a healthy sense of self, one cannot become a knower/thinker able to contribute to the construction of knowledge.

By this account, we develop our thinking skills as we develop our communication skills and our social skills, by being in relationships with others. We test out our ideas with other people, and we come across problems we must solve while relating to other people. What we come to believe is an answer or a solution—our most trustworthy knowledge—is derived through the use of conversation with others. What implications this relational theory of knowledge has for education (in particular, formal schooling) must also be addressed.

Acknowledgments

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me the opportunity to perform the research on this topic. This chapter was first presented as a conference paper, "An Examination and Redescription of Epistemology," at the enGendering Rationalities conference, April 18–20, 1997, University of Oregon, Eugene, Oregon. It was first published with *The ERIC Clearinghouse on Teaching and Teacher Education*, ED 401 279, under the same title in 1997, and it was then included as part of Chapter 2 in Barbara Thayer-Bacon with Charles S. Bacon, 1998, *Philosophy Applied to Education: Nurturing a Democratic Community in the Classroom*, Upper Saddle River, NJ: Prentice-Hall. I am currently writing a book on this topic, with the working title *Relational (e)pistemologies*.

Notes

1. "The Blind Men and the Elephant" is an old tale from India. A children's book version is retold by Lillian Quigley (*The Blind Men and the Elephant*, New York: Charles Scribner's Sons, 1959). I will use the term *men* in describing past epistemological theories because they were written by men, and that is one of the underlying points of my feminist perspective.

2. I cannot identify the exact source for this term; it occurred to me as I was reading a long list of works by feminist writers. This relational epistemology could also be labeled a social feminist epistemology. Three works by philosophers who helped me see the need for a relational epistemology were as follows:

Grimshaw, Jean. (1986). *Philosophy and Feminist Thinking*. Minneapolis, MN: University of Minnesota Press.

Noddings, Nel. (1984). *Caring: A Feminine Approach to Ethics and Moral Education*. Berkeley, CA: University of California Press.

Ruddick, Sara. (1989). *Maternal Thinking: Toward a Politics of Peace*. Boston: Beacon Press.

3. Barbara Thayer-Bacon. (1997, Spring). "The nurturing of a relational epistemology." *Educational Theory*, *47*(2), 239–260.

4. I do not wish to imply, by my choice of authors, that there are not many important contributions being made by others, whom I have had to simply reference or leave out of this discussion. Please see, for example, the works of Robert Ennis, Richard Paul, and John McPeck, as well as those of Judith Butler, Nancy Fraser, Linda Nicholson, Nancy Harstock, and Iris Young.

5. Berger and Luckmann begin their treatise by noting they are not claiming to answer the philosophical question, how is one to know? The sociologist is forced to use quotation marks around "reality" and "knowledge." Sociologists can't differentiate between valid and invalid assertions about the world, whereas a philosopher "is driven to decide" (Berger & Luckmann, 1966, p. 2).

6. My original sources for this idea are:

Mead, George Herbert. (1934). *Mind, Self, and Society: From the Standpoint of a Social Behaviorist.* Charles W. Morris (Ed.). Chicago: University of Chicago Press.

Dewey, John. (1944). *Democracy and Education*. New York: Macmillan. (Originally published 1916).

For more on "social epistemology," see the works of Steve Fuller, Alvin Goldman, and John Hardwig. I am indebted to Steve Norris and Harvey Siegel for these references.

7. I am suggesting that other than the typical criteria used by philosophers to justify theories as based on compelling reasons—criteria such as clarity, coherence, and consistency—there are other criteria that should be considered as well, such as beauty, elegance, harmony, inclu-

siveness, and beneficiality. I will say more on this later.

8. Harvey Siegel points out that this way of discussing knowledge is found in the introduction to any epistemology text. My sources for this description were John Hardwig, 1985, "Epistemic Dependence," *Journal of Philosophy*, *82*(7): 335–349, and Siegel's direct correspondence to me. Burbules labels this description of epistemology the "Enlightenment conception" (Burbules, 1992).

9. Siegel, personal correspondence, August 1994 and May 1995.

10. I am not alone in drawing attention to the infant in discussions of epistemology. See the works of Seyla Benhabib, Jane Flax, Nel Noddings, and Sara Ruddick.

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JOHN DEWEY AND EDUCATIONAL EVALUATION

Douglas J. Simpson and Michael J.B. Jackson

Dewey's theory of educational evaluation was significantly shaped by his opinion of what the nature, aims, and means of education are. Given this philosophical perspective, it is not surprising to find that for him educational evaluation is a comprehensive social and institutional endeavor: Each aspect of society—the family, neighborhood, school, community, and larger environment—needs to be evaluated in the light of the purpose of cultivating individuals and communities who are progressively becoming more capable of growing and sustaining that growth in a democratic setting. Educational evaluation should focus upon both means and ends, paying particular attention to the ends of personal and societal growth. The growth Dewey envisioned was a developing understanding and associated behavior that is immediately important but also enabling in the future. Whether evaluating schools and neighborhoods or teachers and students, primary attention should be given to the quality of thought, imagination, creation, communication, and behavior exhibited by individuals. These emphases set Dewey apart from most educational thinkers in his and our day and provide a framework for critiquing educational assessment and evaluation endeavors today.

In Dewey's day, educational evaluation was not yet a specialized area of study, and its complexities, challenges, benefits, and dangers were not well known. Still, many informed people during his lifetime knew that teachers regularly made assessments of students' perceived abilities, needs, interests, and prospects in life and of those experiences and studies that would be suitable for them to pursue. Sometimes less consciously, society as a whole, school districts in general, and administrators in particular—often tracking

students into allegedly appropriate careers or on the basis of assumed abilities—made similar evaluations or judgments about students. Society, including many parents, held expectations for schools and teachers, and consequently, they were subject to informal and formal evaluation. Schools, for example, were expected to teach students what was deemed apposite for the young, and teachers were held accountable for their behavior outside of schools as well as inside.

An outgrowth of Dewey's setting and thinking, then, was a rather comprehensive theory of educational evaluation that complements his wide-ranging understanding of education. Recognition of the conscious and unconscious evaluation practices of his time, combined with Dewey's belief in the value of growth in education, led him to think a great deal about ongoing or formative evaluation. He saw the relationship between formative evaluation and the important effects and potential of a child's social setting, including the family, neighborhood, community, school, and broader environment. Thus, he believed that any kind of social arrangement, including schooling, should undergo an ongoing evaluation that leads to continual improvement and transformation. What he had to say about educational evaluation and schools, sometimes in passing or apropos of other topics, was very different from the beliefs of many other thinkers, except, possibly, for the reflective common sense and practice of better classroom teachers.

In writing about schools, Dewey's ideas touched not only students, teachers, the curriculum, and teaching methods, but also the classroom and school organization, teachers' relationships with administrators and their employers, the attitudes of teachers and administrators, and the school's connection with local and larger communities. In fact, he seemed to have found it difficult to make any sharp distinction between educational and social evaluation and reform. Consequently, his theory of educational evaluation ultimately involved an analysis of how society and schools contribute to the educative learning or growth of students, educators, and other citizens. His largely implicit but comprehensive view of educational evaluation, then, was one that reviewed what social entities were doing for and with children and youth. To restate the idea, Dewey believed that educational evaluation, decontextualized from multitudes of learning variables and focused narrowly on schools, curriculums, pedagogy, teachers, and students, suffers from a myopic understanding of the nature, aims, and means of education.

Given Dewey's comprehensive theory of educational evaluation, the range of his interests, and the fact that his comments on the subject are sprinkled throughout his writings, the focus of this essay is limited to a select set of subtopics. In particular, attention is

given to the evaluation of teacher preparation programs, aspiring teachers, practicing teachers, P–12 students, school environments, personal growth, curricular experiences, data interpretation, economic conditions, educational purposes, and sound pedagogy. Dewey's thinking about teachers is an interesting place to begin. He noted the importance of teachers' being masters not only of their subject matter but also of how students think. The former emphasis was a major concern for Dewey, and he stressed that teachers should "overflow" with knowledge (Boyston, 1981–1991, vol. 8). The latter expectation includes understanding what children think and talk about, the games they play, why they abandon certain activities and move to new ones, and the growth of their unplanned actions (Boyston, 1981–1991, vol. 17). Moreover, mastering how students think involves being "able to keep track of . . . mental play, to recognize the signs of its presence or absence, to know how it is initiated and maintained, how to test it by results attained, and to test *apparent* results by it" (Boyston, 1976–1983, vol. 3, p. 254). Both attained and apparent results are important for the teacher to examine, therefore, as a means of determining the thinking that led to them and, at times, the cognitive processes that will be needed to obtain different results. Dewey concluded that "the supreme mark and criterion of a teacher" is this insight into the "soul-action" of students (Boyston, 1976–1983, vol. 3, p. 254).

If Dewey is correct, prospective teachers' knowledge of their teaching fields may be a legitimate area of assessment and evaluation. Their understanding of the psychological development and learning of students in general might also be a legitimate concern of those who evaluate teacher preparation programs. But Dewey was interested in more: He wanted prospective teachers to learn how to study and come to a thorough understanding of their future students—their thinking, spontaneity, habits, and so forth. Educational evaluation from this perspective could involve coming to understand how aspiring teachers are prepared to use and how practicing teachers actually use child-study skills to aid them in teaching. Moreover, practicing teachers may be evaluated in part by determining how well they understand each student and whether they are able to lead each into an appropriate understanding of the content being taught. In turn, schools could be partially evaluated for their ability to create enabling environments or learning atmospheres where teachers pursue individual child study and use the information they learn about each child, perhaps over a period of several years.

Talk of "the supreme mark and criterion" of the good teacher shows the priority Dewey attached to this idea. The point of evaluation is to promote learning and growth, the kind of learning that gives meaning to the learner's present life and to the life of his or her community. Questions of priorities are

what we might expect philosophers to bring to a discussion of evaluation. And Dewey's priorities are clear: the *quality* of the educational experience itself and its promotion of students' growth—the capacity for more, fuller, and richer experiences—are what matter. The quality that interested Dewey falls into two spheres; learning should have both an immediate and a later impact (Boyston, 1981–1991, vol. 13). Educative learning, in contrast with non- and miseducative experiences, entails growth in the present and the disposition for ongoing growth in the future. An important question for schools and teachers, then, is whether the experiences designed, the environment created, and the curriculum developed involve and create capacities for additional, broader, and deeper learning by students in the future. Or are the experiences merely noneducative or, perhaps, even miseducative? A related question is how well schools and teachers can support claims for immediate and later growth. What kinds of information, performance, and outcomes enable educators and others to assess and evaluate the quality of student growth? Are standardized tests useful? If so, in what ways? What other types of information and data are needed?

Another illustration of Dewey's interests can be seen in the way he treats the subject of the learner and the quality of her or his growth. Dewey is well known for his objections to traditional examinations as frequently employed by schools during his lifetime. He did not, however, appear opposed to the gathering of worthwhile information about individual students or educational environments. Conversely, he rejected an emphasis on external rewards and punishments—such as grades, promotion, awards, and prizes—that was at the expense of an intrinsic interest in learning (Boyston, 1976–1983, vol. 9). Many schools in his day valued norms, comparative standings, tests, promotions, and measurement of student achievement and IQs, but he insisted that good teachers should be more interested in quality, specifically the "quality of activity and consequence [means and ends] . . . than [in] any quantitative element" of learning (Boyston, 1981–1991, vol. 3, pp. 259–261). The effort to establish school norms, averages, and classification systems was particularly objectionable, he argued, because schools should be primarily interested in "individuality," and the grouping of students for "social purposes" should place a high value on "diversity of ability and experience" (Boyston, 1981–1991, vol. 3, pp. 260–261).

Dewey understood the relationship of the learner and the environment in which learning occurred, including both the school and the classroom. He believed schools should be places where the individual student is well known and cultivated, where distinct and different talents are prized and nurtured, and where the quality of one's thinking and performance is understood and refined. Schools should not be places where the aim is uniformity of standards and abilities. At this juncture, it is important to recall

Dewey's stern warning against a pedagogy that dulls one's appreciation, application, and meaning-making approach to learning and that results in the acquisition of little more than sterile information: "What avail is it to win prescribed amounts of information about geography and history, to win ability to read and write, if in the process the individual loses his own soul: loses his appreciation of things worth while, of the values to which things are relative; if he loses desire to apply what he has learned and, above all, loses the ability to extract meaning from his future experiences as they occur?" (Boyston, 1981–1991, vol. 13, p. 29). Assessment and evaluation that promote pedagogical standardization and sterility and inhibit an enthusiastic engagement with ideas and issues by students and teachers constitute a fundamental educational vice even when they are accompanied by a modest development of basic skills and valued information. Policy makers, board members, and educational administrators who unintentionally or intentionally promulgate this kind of assessment and evaluation do great harm to students, schools, and society, according to Dewey.

This emphasis of Dewey need not lead to the conclusion that only an understanding of the individual is worthwhile and that schools and classrooms are unimportant. Indeed, the opposite is the case, but the understanding of groups should provide insight into how to create more educative environments and communities for individuals learning in social groups. Dewey seemed to have little if any interest, however, in comparing one school to another, except in citing what he deemed the admirable features of the diverse and progressive schools and various educational practices he observed (Boyston, 1976–1983, vol. 8).

The fact that Dewey had little interest in comparing schools was not because he wanted students simply to enjoy the present, disregard all traditional learning outcomes, and merely learn of societal occupations, as some critics contend. Many of his proposals did involve learning about ordinary home and work activities, but these had an educational mission: understanding activities that form part of and give meaning to what people do every day. The learning experiences were not focused on training in skills that were deemed useful in raising a family, getting a job, or preparing a meal. Instead, these experiences were designed to contribute to the child's understanding of the world—beginning, in order to avoid rote learning and seemingly pointless content, with what was familiar and seemed to the child to need explanation—and were meant to lead directly to an appreciation of reading, writing, adding, and subtracting and, eventually, to a study of academic disciplines: the fields of inquiry and creativity that represent the best available understanding of the world.

The school curriculum and related learning experiences, then, should be evaluated in terms of their ability to connect the past and present in the life of each student and to promote future

educative experiences for everyone. In particular, school experiences were to be evaluated in terms of their being able to take a child's "crude experiences and organize them into science, geography, arithmetic, or whatever the lesson of the hour is" (Boyston, 1976–1983, vol. 8, p. 254). Dewey believed that whatever information or funds of knowledge a child already has form part of a subject that the teacher is attempting to teach, and that the most appropriate pedagogy will use this prior knowledge and build a conscious understanding of the subject on this largely unconscious foundation (Boyston, 1976–1983, vol. 8). But assessing what each student has learned in these different disciplines is not a simple matter, for what each person brings and learns varies to a large degree by social and, especially, economic background and personal interest. Today, diverse classrooms make this practice more challenging for teachers but, perhaps, all the more important.

Teachers cannot afford to be naive about learning experiences and their outcomes, whether occurring before, outside of, or in schools. Dewey once told the story of a visit to a classroom in which students were studying the composition of the earth. Asked what the center of the earth was like, the class answered, together, "igneous fusion." When the teacher inquired further about what their answer meant, there was no reply. Rephrasing the question to ask if the center of the earth was cold or hot still produced no response from the students. Dewey's lesson was obvious: Learning unrelated to other experiences and understandings and the mere recitation of words, facts, and formulas will not do in any school that values quality of thinking and performance. What matters is what the child understands and can do with or make of words, facts, and formulas. A similar point was made by Dewey when he discussed facts or data and their meaning for educators or anyone else: Facts or data in themselves may be dead, meaningless, or, worse, misleading (Boyston, 1981–1991, vol. 8). In understanding individuals and their multiple learning environments, it is critical that the selection and interpretation of facts or data be made and that it be recognized that neither the data nor their interpretation is final or beyond debate (Boyston, 1967–1992, vol. 3). The absence of this perspective—that data need to be carefully selected, studied, and understood as well as challenged and clarified by other pertinent data and interpretations—appears to be one of the major shortcomings of much contemporary discussion and, unfortunately, prescription and prohibition by policy makers regarding education.

Some people today seek to reduce reliance on teachers' interpretations and judgment with so-called culturally fair and objective assessment instruments. Dewey, however, observed that no one comes to a task—whether creating an examination or interpreting data or analyzing problems—with a "virgin mind" (Boyston, 1981–1991, vol. 8, p. 214). In view of this slant and his emphasis on the quality of learning

experiences and growth, Dewey would probably be a great deal more comfortable with explicitly qualitative assessments and evaluations—whether portfolios, performances, discussions, or essays—that acknowledge the multiple ways in which individuals can legitimately grow and show their growth and understanding than with standardized tests and measurements. One may speculate that if standardized instruments are to be employed in a Deweyan scheme of things, they should be used as one of many efforts to understand the "soul-action" of the pupil and used as reflective psychometricians recommend.

Dewey's theory of educational evaluation diverged from the thinking of his contemporaries in other ways. Let us return to the student and learning to demonstrate his departure from the beliefs of others. If learning is to be meaningful to the learner, he argued, it must begin with what is already significant—one's immediate experience. Consequently, what is taught and learned should often look different from one community or school to another. He drove this idea home by averring: "No one would question that a child in a slum tenement has a different experience from that of a child in a cultured home; that the country lad has a different kind of experience from the city boy, or a boy on the seashore one different from the lad who is brought up on inland prairies" (Boyston, 1981–1991, vol. 13, p. 22). This being the case, it seems safe to suggest that Dewey believed that comparing the results of a school on the seashore with another on the prairie, for example, without considering a range of other factors, would be nearly meaningless, especially with younger children. It would also seem to be evaluative nonsense if the curriculum of either locale were taken as the standard of what should be taught and studied in all locales. Would Dewey also argue that comparing the results of one teacher in an economically diverse school with the outcomes of another teacher in an economically homogeneous school, without considering a range of other factors, is both mindless and meaningless?

Educational evaluation influences schooling in other, less expected but powerful ways. Dewey saw the subtle impact that informal and unofficial evaluation can have on teaching and teachers. When teachers are viewed—informally evaluated—as being largely incapable of professional behavior and judgment, there is an effect that cannot be ignored on both practicing teachers and the appeal of the profession. The environments in which teachers work and the responsibilities and respect they are given are tacit evaluations and can have a profoundly negative impact. His stinging words were as follows:

> There is not a single body of men and women in the world . . . among whom the development of professional spirit would not be hampered if they realized that no matter how much experience they got, however much wisdom they acquired, whatever experiments they tried, whatever results they obtained,

> that experience was not to count beyond the limits of their immediate activity: that they have no authorized way of transmitting or of communicating it, and of seeing it was taken into account by others. (Boyston, 1976–1983, vol. 7, p. 111)

When potential educators understand this unspoken evaluation of teachers, many turn to other opportunities. People who wish to think, be creative, and use their imaginations are often repelled by the kind of school culture Dewey described, for they are largely designed for people who will mechanically or unthinkingly follow prescribed aims and means. The freedom implicit in the professional judgment, autonomy, responsibility, and ethics teachers require would probably make largely standardized methods of evaluating teachers, teaching, schools, and students highly suspect for Dewey. Furthermore, if conditions or lack of resources make significant success unlikely, talk of holding teachers or administrators accountable for the highly improbable result would be meaningless or, worse, morally wrong from his perspective.

In Dewey's theoretical framework, educational evaluation is chiefly a matter of purposes: What kinds of people do we want to cultivate for life in a reflective and dynamic democracy? What are we assessing and trying to evaluate? Where are our activities going to take us? What do we expect to learn and how will the information assist us in educating individual students? He saw problems not so much in the processes of evaluation as in the significance of what is being evaluated and the uses to which evaluations will be put: Measuring wrong or trivial things distorts the whole activity, and acting on the basis of largely irrelevant or unimportant information is at least counterproductive and often unethical. An enterprise that is directed toward promoting personal and social growth necessarily has little use for summative evaluation per se, just as one that values individuality may have little use for comparisons of individuals or groups or schools or districts or states or nations. Where, Dewey might ask, are our priorities, and why do we avoid *evaluating* them and, instead, continue to identify and examine misleading but more easily measured indicators of something else? To others, he might inquire, what do these facts, information, and data have to do with developing reflective and growing individuals and communities? We should *evaluate* the entire assessment enterprise to see how, if at all, it relates to our educational purposes. For still others, he may say, how do we know that students are growing in their understanding, appreciation, and application of chemistry and democracy and that this growth is providing a foundation for the future development of individuals and social groups? When we *evaluate* our claims and the evidence, what do we find?

Another of Dewey's interests is tied to our purposes, or where we wish to go: What can schools reasonably be expected to achieve, and for what ends can they fairly be held accountable? Considering the social setting of students, the teachers, and the school, what can we expect each to be able to achieve? While he did not excuse educators from legitimate responsibilities, he was adamant about the powerful effects of social, especially economic, conditions on students, communities, and schools: "Life . . . opportunities . . . values . . . education . . . are mainly determined by economic conditions" (Boyston, 1981–1991, vol. 4, p. 225). Even so, he stressed that educators and other citizens have a moral responsibility to advocate for changing economic conditions and material environments to better meet the needs of children (Boyston, 1981–1991, vol. 4). Believing in the power of economic influences was not an excuse to blame the external environment; it was a challenge or, better, a charge to change the external educational environment of children.

Dewey's theory of educational evaluation, therefore, is a warning against taking hastily designed, narrowly focused, easily measured, and largely quantitative approaches to understanding educational environments and their means, ends, and results. Instead, he challenges us to think carefully and frequently about our purposes and to find pertinent indicators of progress toward them. He stimulates us to cherish, look for, and evaluate the development of a number of important qualities and dispositions that are involved in pedagogically exciting teaching and learning. These include tendencies to appreciate rigorous thinking in any field, make sense of random and planned experiences, and apply the most defensible claims of knowledge to solving problems. He encourages us to examine and evaluate how educators weave together the past, present, and future in experiences that immediately influence but also open the door to future personal and social growth. He invites us to evaluate how effective educators are in leading students from their crude understandings of art, science, history, and democracy to a fairly sophisticated understanding and personal appropriation of these realms. He inspires us to prepare and nurture professional educators who are masters of their content and pedagogy and who are disposed to study their students as well as the communities where they live. He charges us with the responsibility of understanding and seeking to transform our families, neighborhoods, communities, and schools in order that they can become fully functioning and complementary educational environments. He asks us to seize the opportunity to be thoughtful inquirers, participants, and evaluators in the development of society, schools, and individuals, in part by means of an ongoing collection and application of relevant facts and data about our purposes, how we pursue them, and what standards or indicators guide us and inform us along the way.

In essence, he encourages us to be imaginative, evaluative thinkers as we plan for, engage in, and assess educational activities in any environment.

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FLORIDA'S ADVANCED ACADEMIC STANDARDS FOR THE ASSESSMENT OF CRITICAL AND CREATIVE THINKING

Danny Weil

A Brief History

The concept of school accountability has mushroomed into one of the most heated, controversial, and least understood issues in the current educational debate. Holding teachers, districts, schools, and students accountable to state-mandated learning standards seems to be the public policy mantra, and indeed the vogue, as we enter the twenty-first century. Yet the discussion regarding standards and assessment has focused more on *what* students need to know than on *how* they come to know it. Few citizens, other than a handful of policy makers in the current educational community, have observed, let alone entertained a discussion regarding, the necessity to teach students how to think.

In the spring of 1999, I had the unique opportunity to help revitalize the standards debate in the state of Florida. I was asked by Dr. Maria de Armas, Director of the Office of Advanced Academics for Dade County Public Schools, to devise a taxonomy of critical/creative thinking standards that teachers in the district's Academic Excellence Program might use to teach and assess students in academically enriched classes. While I believed and continue to believe that critical and creative thinking principles and strategies should be taught to all students throughout all ranges of subjects, I felt that the opportunity to work with teachers in the third largest school district in the United States was important. I have been fortunate enough to work with Dr. de Armas for the past nine years, during which her creativity and commitment to critical thinking and critical thinking instruction and assessment have been evident. Her pledge to foster critical and creative thinking, as well as her faith

and belief in the ability of both teachers and students, captured my interest and motivated me to develop the project. Dr. de Armas also realized the necessity of tying teaching to assessment and assessment to teaching, and concurred with the belief that the more authentic the teaching, the more authentic the assessment.

Dr. de Armas and I conceived of the project in the following manner:

1. Develop the critical and creative thinking standards.
2. Share them with teachers and professionals in the Office of Advanced Academics for feedback purposes.
3. Schedule a two-day in-service workshop for K–12 teachers using the critical and creative taxonomy of standards as the focus. This would provide an opportunity to introduce the standards to teachers and allow them to infuse them into their curriculum and develop assessment based on their understanding of the critical/creative thinking standards.
4. Allow teachers the time to use these strategies and assessment principles in their classrooms in an attempt to help them develop their own individuality when designing and assessing instruction while at the same time providing them with innovative experimentation.
5. Reunite with teachers to dialogue about what they thought was effective and ineffective, their evaluation of the critical thinking standards, and what barriers they felt impeded their abilities to utilize this manner of instruction and assessment. (See Appendix A for a diagram depicting the themes and organization of the workshop.)

Both Dr. de Armas and I reasoned that having a healthy dialogue with teachers about critical/creative thinking and then affording them the time to utilize methods and strategies for teaching and assessing thinking would allow teachers to think about and identify their own practices. Building metacognitive opportunities into the process, we contemplated, would allow teachers to think creatively and intellectually about their own teaching processes. This would motivate them to recognize what they thought was valuable and what they thought should be changed in their curriculum and instructional methods, along with recognizing where they might be able to learn more about critical and creative thinking and instruction. The operative assumption was that by becoming more creative and critical in our own thinking, we are better able to help others think critically.

For historical purposes, it is important to mention that I have been working with Dade County Public Schools as a consultant in the area of critical thinking for close to ten years. My work with the district has included conducting workshops on how to teach critical thinking to limited English proficiency students. I have worked closely with the district and

their office of bilingual education in designing workshops in legitimate assessment, including the use of portfolios, performance assessment, and other forms of authentic assessment. In conjunction with the district, I have been active in assisting in the production of critical thinking educational films and resources for teachers of all grades. I also have participated in the district's annual critical thinking conferences and have worked closely with Dr. de Armas throughout a nine-year period in furnishing powerful in-service opportunities for teachers of all grades. Many of these in-services have included modeling critical teaching in Dade County Public School classrooms through working directly with students, as well as conducting dialogues with teachers following the modeling sessions.

In the summer of 1999, at the urging of Maria de Armas, I drafted the critical and creative thinking standards using the Miami–Dade County Public Schools' *Curriculum Options for Academic Excellence Program* as a vehicle for providing examples of how strategies in critical and creative thinking might be implemented. For this reason, I have arranged the standard taxonomy and discussion that follows by introducing the principle of critical/creative thinking and then discussing the application of a given principle to aspects of classroom curriculum. The idea was also to connect theory to practice by providing examples of theory in practice as well as a formal and informal depiction of critical thinking standards and how these standards might be conceived by a young primary student. (I have included a student's view of these standards as well as an informal depiction in Appendix A and Appendix B, respectively.)

Dr. de Armas and a group of teachers from the Office of Advanced Academics worked with me throughout 1999 as I honed and refined the standards. I was fortunate to work with these teachers and professionals, who aided me tremendously with the development of the critical/creative thinking taxonomy. Later in 1999, I returned to work with teachers from various schools in actual theoretical understanding and implementation.

All in all, the workshops held in 1999 were successful. I was able to work with about ninety teachers from throughout the district in several two-day workshops. Teachers who did attend the workshops held in 1999 were excited about the opportunity to dialogue about how to teach for thinking and creativity and were enthusiastic about the opportunities and challenges to infuse critical thinking instruction within their curriculums. They also found that the time afforded them to dialogue and think critically about their own profession and engage in critical metacognition regarding teaching, learning, and the assumptions they have developed was immensely important in allowing them to see alternative ways of looking at the teaching-learning world.

It was interesting, in working with teachers as well as staff, that all the teachers commented about the rush to adhere to state standardized tests and

that this kept them from teaching creative and critical thinking. Most all agreed that these standardized tests did little to help students think more critically or creatively, failed to assess reasoning, provided no opportunities or incentives for metacognitive work or directions in curriculum redesign, and acted as an impediment to authentic learning and assessment. This was precisely because *teaching-to-the-test* took valuable time away from real instructional practices that promised to help students think. This is an important observation, as Florida is one of the more controversial states involved in academic accountability measures. Dade County Public Schools are also involved in the nation's first statewide voucher system, adopted in April of 2000, a system based on holding schools, teachers, and students accountable to state standards. Yet the majority of teachers agreed that their independence, creativity, and methods of instruction had all been compromised by the Florida Comprehensive Assessment Test (FCAT), Florida's statewide assessment instrument. If the FCAT was preventing teachers from teaching critically and creatively, these teachers wondered how the state could require such tests without input from teachers themselves. Furthermore, finding themselves held hostage to an inauthentic, state-mandated test and seeing their schools rated with an A, B, C, D, or F had left many teachers despondent, shocked, and in a state of intellectual and emotional turmoil and despair.

Dr. de Armas is an enlightened administrator committed to offering teachers powerful opportunities to develop their critical capacity to teach students how to think. None of the work we accomplished with the few teachers we were able to work with could have been done without her leadership and vision. Whether her efforts and those of her staff will be fruitful or even allowed to continue will greatly depend on the politics of education and how the controversy over learning and teaching becomes dialogically translated in the Dade County Public School District. Unfortunately, the theory and practices of the district are vitiating administrative and teacher efforts at increasing the critical and creative thinking of Dade County's children. All Florida citizens should be alarmed. At this point in time, with the school district's slavish allegiance to illegitimate state standards, the critical and creative program that Dr. de Armas and I theorized and developed has been shelved indefinitely. Our plans to have teachers experiment with the standards and then return for dialogue was sabotaged by preparation for state-mandated testing.

I was pleased to have been enlisted to develop the critical and creative assessment standards for the Office of Advanced Academics and felt privileged to work closely with teachers. I seriously believe that the time I did work with teachers allowed all of us to begin to reformulate a dialogue regarding what it means to think intelligently and creatively. We also discov-

ered our own criticality and creativity and thought deeply about how we might reconstruct our curriculums, instructional methods, and assessment practices to help students develop their critical and creative potentials. While my frustration lies with Dade County Public School's myopic view of student achievement and their district practices in demoralizing and deskilling teachers, my optimism rests on my assumption that the creative performance art of teaching and learning will refuse to be reduced to an act of mechanical attainment and standardized evaluation. My enthusiasm is also built on my ardent belief in our citizens' ability to understand and struggle for educational opportunities that develop the critical capacities of all our nation's children.

By escalating the public's awareness of critical and creative thinking, Dr. de Armas and the teachers who participated in the critical/creative thinking project in the state of Florida, and particularly in the Dade County Public Schools, have done a tremendous service to our nation's children.

The following is a formal depiction of the critical and creative thinking standards that I developed for the Florida Dade County Public Schools Academic Excellence Program. Though these are certainly not the only critical and creative thinking skills that should be taught to students, I felt that the following thirty-five concepts were an important beginning. In presenting this taxonomy, I acknowledge the issue of multiple intelligences and do not make any claims that these thirty-five concepts are exhaustive or exclusively significant. Rather, these principles and strategies of critical and creative thinking have been developed so that teachers, parents, and students might gain an insight into what it means to think critically and how we as educators might organize and develop critical and creative thinking curriculums that engage reasoning, self-authorship, and inventiveness. At the very least, I am hoping that they provide a subject matter and forum for continued viable and imaginative discussions regarding what students should know and how they might come to know it.

The Standards

Critical and Creative Thinking Standards for Dade County Public Schools Advanced Academic Program

Mission: Students will demonstrate growth and development in critical and creative thinking.

A Taxonomy of Critical and Creative Thinking Goals and Objectives for Students and Teachers

Rationale: Critical and creative thinkers are interested in developing

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their capacity to solve problems, make decisions, and continuously assess their thinking to determine its strengths, weaknesses, and limitations. They are imbued with a sense of imagination and curiosity that calls on them to seek complex answers to complex questions. They are uncomfortable with complacency and seek to find new and innovative ways of approaching life's possibilities. They are particularly interested in developing effective modes of thinking in the cognitive areas of abstract, systematic, evaluative, and collaborative thinking, and they are aware of the affective area of emotional intelligence and its relationship to creative and critical thought. Critical thinkers seek to routinely evaluate their thinking and assess their thought patterns relative to criteria. They seek to subject what they think they know to critical scrutiny in the interest of achieving the best results, the best decisions, and the best solutions to problems. Finally, critical and creative thinkers are concerned with all of the above as it affects good judgment and innovation.

The following represents a taxonomy of critical and creative thinking goals and objectives. They have been divided into categories associated with modes of thinking that have been recognized as important in the development of critical and creative thinking.

Abstract thinking is thinking that is comfortable and fluent with large ideas, a thinking that heralds ambiguity. Abstract thinking is thinking that is articulate and comfortable with abstractions and symbolic representations of information and ideas. Abstract thinkers reason deductively from general concepts to particular situations.

Systematic thinking is grounded on an understanding that we as human beings construct systems and that there is a logic to all disciplines, theories, perspectives, and positions. Systematic thinkers understand ideas and their interrelationships. Systematic thinking experiences ideas not in isolation from one another, but holistically within a complex web of interrelated ideas and principles. Systematic thinking seeks to constantly relate the parts to the whole and whole to parts and is essential to unlock logical systems of thought for purposes of analysis and evaluation.

Evaluative thinking routinely experiments with and assesses its own work and underlying thinking. It is thinking that experiences itself in a constant state of pregnancy as it continually gives birth to new ideas and creative ways to foster improvement. Evaluative thinking is a commitment to thinking that is constantly scrutinizing itself and the thinking of others in the interest of self-betterment and continuous improvement. It is motivated and achieved by inner questioning and attitudes of humility and courage.

Collaborative thinking recognizes our interdependence on the thinking of others. It is thinking that incorporates attitudes and dispositions that collaboratively confront increasingly complex problems within an atmosphere of civility and inquiry. It is founded on the notion of synergy: that

if people follow a rational sequence of events and incorporate good values and attitudes of thinking amongst each other, they will perform beyond the sum of their individual resources. Collaborative thinkers understand that they do not surrender their individuality simply because they harness their efforts with others. On the contrary, much like a musician in an orchestra, collaborative thinkers understand that working with others serves to increase individual effectiveness and sense of self.

Emotional intelligence, or the affective dimension of learning, recognizes that critical and creative thinking is more than just sets of cognitive skills but also involves a compilation of attitudes or dispositions that must be cultivated and nourished. Developing emotional intelligence involves experiencing a variety of situations with others and learning to understand how others see and process the world. Critical thinking teachers know that this intelligence is learned, and they seek to offer students opportunities to develop an insight into the attitudinal aspect of thinking. They also know that these attitudes and dispositions are indispensable for open-minded critical and creative thinking and are recognized as essential for teaching creative and critical thought.

The Five Dimensions of Critical and Creative Thinking Behaviors and Attitudes

1. Problem-Solving and Decision-Making Dimension

- S-1 Defining and Identifying Problems
- S-2 Defining and Identifying Goals
- S-3 Using Information Critically
- S-4 Distinguishing Relevant from Irrelevant Information
- S-5 Questioning Deeply: Learning to Think Socratically
- S-6 Examining and Evaluating Assumptions and Beliefs
- S-7 Generating and Assessing Effective Decisions and Solutions
- S-8 Exploring Consequences and Implications
- S-9 Making Plausible Inferences, Coming to Good Conclusions, Making Effective Decisions, and Learning to Interpret Critically
- S-10 Giving Reasons and Evaluating Evidence and Alleged Facts

2. Analytical and Evaluative Thinking Dimension

- S-11 Avoiding Overgeneralizations and Oversimplifications
- S-12 Developing Criteria for Evaluation
- S-13 Evaluating the Credibility of Sources of Information
- S-14 Analyzing or Evaluating Arguments, Interpretations, Beliefs, or Theories
- S-15 Analyzing and Evaluating Actions or Policies
- S-16 Comparing and Contrasting Ideals with Actual Practice
- S-17 Evaluating Perspectives, Interpretations, or Theories

3. Systematic Thinking Dimension

- S-18 Comparing Analogous Situations: Transferring Educational Insights into New Contexts
- S-19 Making Interdisciplinary Connections
- S-20 Noting Significant Similarities and Differences

4. Collaborative Thinking Dimension

- S-21 Reasoning Dialogically: Comparing Perspectives, Interpretations, and Theories
- S-22 Reasoning Dialectically: Evaluating Perspectives, Interpretations, and Theories
- S-23 Developing One's Perspective
- S-24 Listening Critically
- S-25 Practicing Questioning: Learning to Explore Beliefs, Theories, and Perspectives

5. Emotional Intelligence/ Affective Dimension

- S-26 Independent Thinking: Developing an Investigative Orientation
- S-27 Developing Intellectual Empathy
- S-28 Developing Intellectual Humility
- S-29 Developing Intellectual Imagination and Curiosity
- S-30 Developing Intellectual Efficacy
- S-31 Developing a Tolerance for Ambiguity
- S-32 Developing Intellectual Perseverance and Discipline
- S-33 Developing Intellectual Courage
- S-34 Developing Intellectual Civility
- S-35 Developing Intellectual Integrity

The Problem-Solving and Decision-Making Dimension

Principle S-1: Defining and Identifying Problems. Learning to clearly and precisely define problems in thinking is a substantial goal of critical thinking instruction. Fifty percent of all problem solving involves defining the problem. All good decisions and solutions to problems require a clear understanding of what the actual problem is. Helping students separate causes from solutions, symptoms from problems, and subproblems from real problems is essential for teaching students to think critically. For example, defining the wrong problem can send a student down the wrong path to, at a minimum, irrelevant solutions, and ensure that she will not understand the subject matter or concepts she is examining. Helping students define problems—to take what they are learning and phrase inquiry in the form of questions to be answered through research and collaboration—is a goal of critical instruction. We want our students to define the issues they are learning and then take intellectual responsibility for pursuing reading, writing, speaking, and listen-

ing in the interest of answering their own questions. This requires a clear understanding of exactly what problems are and how we go about identifying them. Furthermore, it involves learning how to frame problems in divergent ways, ways that call upon expansionary thinking in the interest of creativity.

Application to Classroom Instruction. The classroom application was conducted through the Miami–Dade County Public Schools Curriculum Options for Academic Excellence Program (COAEP). Using journalism, both print and broadcasting, COAEP provided students with opportunities to identify and examine problems. Teachers can ask questions like journalists do in identifying, distinguishing, and solving problems. Students can research the ways that reporters identify and examine public and private problems. They can become animated to see problems as environmentalists see them in all parts of the world and then discuss solutions to problems from various points of view. They can come to understand that how we frame issues as problems often is a result of our point of view, and they can learn to identify points of view when analyzing problem statements. This can be extremely important in environmental studies (COAEP), where points of view abound. Students can be encouraged to identify problems for journalistic purposes and then write about these problems for a real audience. In environmental studies (COAEP), students can identify and target specific environmental problems in their communities, neighborhoods, state, or country. Through an understanding of point of view gained through speech, debate, and literature (COAEP), students can discuss how people with different points of view see different problems and why. They become actively involved in critical analysis and problem solving. They can then discuss these points of view through debate or discussion. By examining problems and issues within these contexts, students can learn what happens if problems are ill-defined or if they have not been adequately examined.

Principle S-2: Defining and Identifying Goals. Whenever we think, we think for a purpose; our thinking seeks to accomplish something. All disciplines, subject mater, and in fact human endeavors in general have a purpose. Helping students see the goals and objectives in what they are studying is essential to help them understand subject matter. Many problems with students' understanding of, for example, biology or history come with the fact that they do not know why they are studying biology or history—what biologists and historians attempt to accomplish through their scholarly endeavors. By not identifying the goals contained within various disciplines, students cannot be expected to understand the discipline as a system. For example, without understanding what a biologist seeks to accomplish by studying cells, let's say, the student

cannot possibly hope to identify biological problems in the area of cellular formation or development. We cannot take for granted that our students understand what historians, biologists, mathematicians, artists, or journalists do; in fact, we should assume the opposite and engage students in discussions as to the purposes behind studying one subject or another. Similarly, students too have goals, in the form of assignments, within any academic pursuit. Are they clear as to what they are attempting to accomplish and why? Have they identified their own objectives and the objectives of instruction in a given area?

Application to Classroom Instruction. Using speech and debate (COAEP), students can identify the goal of a persuasive speech or argument. The teacher can ask them to identify the objectives of a debate and then organize their thinking around accomplishing this objective. In environmental science (COAEP), students can examine and discuss environmental goals, deciding whether they are rational. They can research various environmental concerns and see how problems and goals are related in environmental studies. In art, students can see how artists' goals are enhanced by the materials they choose to use and how a clear understanding of one's goal as an artist can impact greatly on the visual representation of their work (COAEP). For example, teachers can query students regarding the goals involved in using oil-based paint as opposed to watercolors. Students can see the goals in art processes and then engage in their own art activities, setting goals and trying processes designed to enhance their artistic goals. Using shared inquiry through literature, students can be animated to state clearly and precisely story characters' goals and how their objectives and purposes affected their characters (COAEP). And through simulated activities (COAEP), students can capture this understanding by setting their own goals and attempting to accomplish them in the form of simulations.

Principle S-3: Using Information Critically. Critical thinkers recognize the importance of using reliable and relevant sources of information. They constantly seek to validate sources for information, and they give less credence to sources that lack integrity or those that are biased. Critical thinkers know that they must question information critically to determine its overall validity. They pay critical attention to how information is used and marshaled for a particular purpose. They also are aware of how information is used, classified, and categorized. For example, critical thinkers know that there is more than one point of view on any given issue and that people often marshal and assemble information differently, depending on their positions, claims, and assumptions. They interpret information within the wide context of a system of thought, not in isolation. Critical thinkers understand that to use information correctly they must pay attention to how they organize the information—how they categorize it

and sort it. They realize that preconceptions figure into the use of information, and they constantly seek to see information from more than one point of view. When using information, critical thinkers understand they have an obligation to verify the sources of information and seek alternative sources. Finally, they recognize that to avoid becoming roadkill on the information superhighway, they must spend time analyzing and evaluating information before they use it.

Application to Classroom Instruction. As students do research in any area of concern, whether it be art, environmental studies, literature, or drama and theater (COAEP), they will be exposed to information within the field. As teachers, we can question students as to the sources of their information, encourage them to seek out alternative sources, and then work with them to use information to gain knowledge. Through our questions and activities, we can help students see how people studying various subject matters acquire, examine, and organize information for problem-solving purposes. For example, in reporting a story in journalism, either broadcast or print, students should be encouraged to seek and examine a wide variety of information on a given issue (COAEP). Through research they can be animated to pursue information from various points of view and then compare and contrast the information to see patterns or discrepancies. In this way they can begin to see how various journalists use information and for what purposes.

In simulated learning (COAEP) involving hands-on experiences, students can assemble information, classify it, and then use it to solve problems or make plausible inferences about their subject matter. Drama and theater production (COAEP) can be used as a forum to present information to a larger audience. This can share scientific or historical information through a play or skit. And using information from various sources, students in environmental studies can make plausible inferences about world climate and then discuss problems or solutions to environmental problems (COAEP). Throughout these endeavors teachers should ask students how they assembled the information they received, what their sources were and how they determined their reliability, what patterns they saw in the information, and how they would use the information to make predictions or decisions. Students would be queried as to how they might depict this information for others, how others might react to the information they have, and what someone who disagreed with them might say. By getting students to appreciate and develop a healthy attitude regarding information acquisition and depiction, one helps them prepare for a world where information has become one of the central features of modern life.

Principle S-4: Distinguishing Relevant from Irrelevant Information. For students to think critically they must be able to tell the difference between facts that are relevant to a specific sit-

uation and those that are not. Critical thinkers focus attention only on relevant facts and seek to ferret out irrelevancy in their information bank. Since relevance is always subject to point of view, students must understand that the determination of relevancy of facts within any discipline is a matter of debate and discussion. They must become comfortable with putting forth positions and then defending why they believe facts or information are relevant or not and how this affects problem solving within a discipline. What is relevant in one context may not be relevant in another. If we want students to become good purveyors of information, they must consistently seek to categorize information within categories of relevance.

Application to Classroom Instruction. When discussing an issue or problem, when giving reasons for a position or conclusion, or when arguing for a particular solution or decision, students can become sensitive to how they use information that is relevant. Many students assume all information is relevant within a context and thus do not know how to organize their thinking around the facts needed to make plausible arguments or seek valid conclusions. By asking students how specific facts would affect their decisions, or how certain information relates to what they are studying, teachers can help students to see the necessity for relevant information. For example, in speech and debate (COAEP), students would be encouraged to organize their positions around information relevant to the topic. When students are working at putting together a speech or debate, the teacher can ask why they picked specific facts or information and how these relate to the goals of the debate or problem addressed in the speech. When sorting or evaluating groups of pictures in art instruction, for example (COAEP), students can explain why they feel the artist put certain images in her work. When viewing a picture of a spring day in an impressionistic painting, students can be queried as to why the artist included certain visualizations in her painting and why she left others out. In literature (COAEP), students can read a chapter of a text or story and note relevant details that they can then summarize in writing, offering reasons for thinking the details were relevant. They can share and discuss what they thought and thus see the necessity of relevance. Social studies in particular allows students to see how people with various positions organize information around their claims. Finally, children can develop a sensitivity to relevance by creating their own stories with irrelevant facts and then read each other's stories to pick out the irrelevancies.

Principle S-5: Questioning Deeply: Learning to Think Socratically. Critical thinkers know that to pursue issues with any depth they must put a large premium on questions. Being on the *quest* implies that we have many questions about the knowledge we seek to obtain. Helping students raise important questions about what they are studying will prepare them for the

quest for knowledge within a subject area and allow them to create their own knowledge. Critical thinkers try to figure out what they do not know and thus see the importance of questioning as a source of probing their reasoning and the reasoning of others. Since each subject area has its own set of unique questions, helping students see these questions as an organizing basis for all disciplines helps them to understand the discipline as system. For example, the questions we ask in history are not the questions we ask in math; the questions we seek to answer in science are not the questions we ask when we seek to understand the English language. Helping students develop sensitivity toward and insight into the various questions that are relevant to a discipline helps them seek answers and solutions to subject-matter problems; this helps students learn to state problems about what they are learning for inquiry purposes.

Application to Classroom Instruction. Since texts fail to develop questions that delve very deeply, it is the responsibility of both the student and teacher to formulate critical thinking questions that promise to uncover the discipline in question. One idea the teacher can use is to start any activity by asking what kinds of questions students might have about what they are going to study. This allows them to begin to generate questions that can serve as the basis for classroom discussion or activity. For example, in studying global warming (COAEP), students might be asked by the teacher before inquiry begins what questions they have about global warming or the environment. These could be listed on the board and then used as the basis for a classroom discussion as well as research and writing. In journalism (COAEP), students can be encouraged to conduct interviews using questions they have formulated beforehand. When reading texts (COAEP), students can turn the text headings into questions and then read to answer their own questions. They can then formulate questions that go beyond the text and find sources for answers that they can then judge critically.

Helping students ask and formulate questions should be a central goal of critical and creative instruction; teachers should model their own formation of questions out loud to students, letting students see them questioning themselves and the world around them. Students should be encouraged through inquiry instruction to develop an understanding of the external questions we ask others and the internal questions we ask ourselves. For example, when appreciating art (COAEP), students might wish to think about questions they would ask the artist if she were present. When organizing a speech, students might be asked what questions they need to ask themselves to assess whether they are accomplishing what they have set out to accomplish. By helping students see internal questioning as metacognition, or the art of self-assessment, students can begin to develop an outlook toward the world that seeks understanding through questioning as opposed to self-righteousness through mere state-

ments. They can then begin not only to answer questions, but to question answers.

Finally, the variety of questions we ask students will help to model for them the types of questions that they should be thinking about.

Principle S-6: Examining and Evaluating Assumptions and Beliefs. Critical thinkers know that the starting points for all reasoning are the assumptions or beliefs we form as human beings. Whether on a personal level or within academic disciplines, assumptions make up the foundations for all knowledge and lead us to conclusions about math, science, history, environmental studies, and so on. Distinguishing between what one knows and what one merely believes is the goal of critical thinking; independent critical thinkers seek out assumptions both in their own reasoning and in the reasoning of others and subject them to the magnifying glass of scrutiny. They know that to proceed based on false assumptions will inevitably lead to false solutions and misguided decisions. Helping students question assumptions in scholarly endeavors as well as within their own personal lives must be a goal of instruction. Helping students understand the assumptions they make and the assumptions they will be studying is essential for artful critical thinking instruction. Furthermore, students should be animated to question assumptions in the interest of creativity and self- improvement. Students must first recognize assumptions and then distinguish them from facts before they can evaluate them; it is this process that should be afforded rigorous instructional time.

Application to Classroom Instruction. Since assumptions are within everything that we hear, read, see and do, teachers should look for opportunities to encourage students to identify assumptions. Every discipline is based on assumptions about the discipline. For example, when studying dinosaurs we make assumptions about their size and diet based on bones and other paleontological evidence. We also make inferences based on these assumptions. Working with students to help them identify the underlying assumptions behind what they are studying is crucial for teaching them to make plausible assumptions. For example, within literature-based inquiry (COAEP), students can be questioned as to what assumptions characters in stories are making and how these assumptions affect their decisions, solutions, and actions. They can then be asked about their own assumptions regarding this issue or that issue. In chess (COAEP), players make assumptions and then engage in moves based on what they believe or assume is the best strategy. Engaging students in metacognitive activities that help them identify these assumptions and how they affected their game is an excellent lesson.

Asking students for their own assumptions can be part of any academic pursuit. For example, when studying the environment or reading journalistic pieces (COAEP), students can be asked what assumptions the authors might have had and what assumptions

they themselves have regarding the issues. They can be encouraged to compare and contrast assumptions on one issue or another for recognition and evaluation purposes. In drama and theater (COAEP), students should be able to see the importance of understanding the assumptions of a character before that character is acted out. Understanding a character's belief structure is essential to a good dramatic enactment of that character's persona. Similarly, if students were to engage in simulation (COAEP), for example conjuring up an imaginative civilization or city, they would need to identify the assumptions that underlie how the city would be run and what rules and laws might be adopted. Finally, through questioning, teachers can ask students to examine their own assumptions within any area of academic endeavor and then discuss their reasons and evidence with other students in the form of a speech or debate (COAEP).

Principle S-7: Generating and Assessing Effective Decisions and Solutions. Generating and assessing effective decisions and solutions to problems is a goal of critical thinking. Critical thinking is required to obtain good results, and critical thinkers know that good results are the product of good reasoning. Because solutions and decisions must be generated and conjured up in thought, critical thinkers know that using information wisely, identifying problems clearly, and subjecting assumptions to the light of scrutiny go a long way toward generating solutions and decisions. They also know that the process of generating effective solutions and decisions is not a product of hasty or sloppy decision making or problem solving, but is a slow methodical process whereby comparisons are employed to seek the best solution or the best decision. Because solutions and decisions affect others, critical thinkers know the importance of points of view, and they seek points of view when attempting to generate effective solutions and decisions. Because critical thinking is based on nonlinear, divergent thinking, critical thinkers know that the more expansionary their thinking becomes (that is, the more abstract and holistic), the more creative their solutions and decisions will be.

Application to Classroom Instruction. Unfortunately, what teachers and students confront in most textbooks relative to problem solving and decision making are problem-solving steps that the student is forced to accept when attempting to solve a problem. Whether it is an algorithm in mathematics or a positivistic approach to a social studies problem, the approach tends to be the same: linear, convergent thinking steps whereby students are never encouraged to generate their own solutions or, at a minimum, to understand how the solutions or steps we generate are formulated. This unnecessarily limits the divergent thinking process that seeks to expand reasoning through consideration of a host of problem-solving approaches. Students need to consider how others approach problems and come to solu-

tions, not just study linear models that ask for blind obedience rather than for thinking. For example, when discussing environmental solutions with students (COAEP), the teacher can bring into consideration many points of view, perhaps those of Native Americans, farmers, business people, or labor organizers. Encouraging students to see how others have formulated problems and generated solutions allows them to see different reasoning and problem-solving approaches. As discussed earlier, problem solving and solution generation rely to a great degree on the problem formulation, or a clear and precise understanding of the problem. Thus, it is recommended that the teacher have the student state the problems to be solved or decisions to be made clearly.

Students should explore causes of problems, for example, causes of a problem they are looking at journalistically (COAEP); after reasoning within multiple points of view about these causes, they may seek to reformulate the problem. This encourages creative, divergent thinking and helps students see the relationship between the solutions and decisions they generate and the problems they are attempting to solve. In speech or debate (COAEP), students should seek to marshal reasons for their conclusions and solutions and explain how they came to generate these conclusions. Teachers can ask questions of students that encourage them to identify the problem, come up with solutions, examine solutions, and recognize multiple points of view surrounding issues and problems. In chess, for example (COAEP), students should be able to see how their decision to play the game one way is a generated solution on their part; they should seek to understand their game as an attempt to solve a problem. Finally, in environmental studies (COAEP), teachers might want to provide students with opportunities to evaluate solutions tried and to propose alternative solutions based on examined assumptions and beliefs.

Principle S-8: Exploring Consequences and Implications. Critical thinkers can see the implications or consequences of statements and thinking. They reason consequentially. This allows them to develop a richer and fuller understanding of the meaning and implications of their thinking. Critical thinkers know that all thinking has implications, and they seek to understand the consequences, or what follows from thinking. When considering beliefs or decisions, critical thinkers analyze the implications of such beliefs or actions. Understanding that all thinking has consequences allows critical thinkers to plan alternative courses of action, anticipate a wide range of solutions to problems, and learn to prioritize conclusions, decisions, and solutions based on the implications and consequences of their thinking.

Application to Classroom Instruction. Teachers should ask students to state consistently the implications of the thinking they are confronting or embracing. When using literature (COAEP), teachers can ask students to state the implications of a character's actions. They can then work to change

the story relative to the consequences they would like to see. In environmental studies (COAEP), students should be able to state the implications of changes in environmental policy, who is affected, problems that arise, and assumptions behind policy decisions. Through questioning they can come to evaluate the policies relative to the consequences as seen from multiple points of view. In art appreciation and instruction (COAEP), students should be able to comment on the implications of using specific colors or brush strokes when painting for one purpose or another. This will allow them to see the painting as a system that itself has a logic, that painting decisions are based on the consequences of style and stroke, not simply a product. When conducting speeches or debating issues (COAEP), students should be able to argue for points of view based on consequences that they have analyzed. This will allow them to develop a critical understanding of debate.

Principle S-9: Making Plausible Inferences, Coming to Good Conclusions, Making Effective Decisions, and Learning to Interpret Critically. An inference is a statement about the unknown based on what is known. All of us make inferences; we could not live without them. Within the body of all disciplines can be found inferences or conclusions about the world. Scientists infer the climate on Jupiter only to be confronted with evidence from the Space Telescope that tells them their inference was wrong. Social scientists advocate policy solutions to problems that they infer are correct only to discover they might have been wrong. Critical thinking seeks to reach sound conclusions, make effective decisions, and generate good solutions based on observation and information. It is thinking obsessed with good judgment. Critical thinkers know it is important to distinguish what they observe from what they conclude, and they distinguish instances when they are guessing from instances when they are coming to sound conclusions. They also know that it is important to include the reasoning of other points of view when making decisions and generating solutions. They are aware of the tendency of bias in thought and look for evidence before coming to conclusions. When interpreting situations, critical thinkers know that their perception of the world influences how they see reality or interpret life's messages, and they seek to examine the assumptions underlying their interpretations and are interested in how others interpret similar situations. Since all of our interpretations are based on what we infer, critical thinkers know that they must subject inferences to critical examination in the interest of good judgment.

Application to Classroom Instruction. Teachers can animate students to make inferences based on almost any academic pursuit. Students in primary grades can be asked to infer aspects of the world when dinosaurs roamed; students in older grades can be asked to make inferences about classmate actions or school policies; and using literature (COAEP), all students can be asked to make inferences about story titles, characters, and story actions.

Using chess as an example of inference generation, students can discuss how their inferences have consequences for the way they play the game. They can explain how they arrived at conclusions to play the game one way or another and begin to see how their reasoning develops.

In environmental science instruction (COAEP), students can propose their own inferences or predictions as to what might happen if specific environmental policies were or were not adopted. When conducting science experiments, they can learn to distinguish their observations from their inferences and learn to interpret the results of experiments critically. This will allow them to develop scientific thinking as opposed to just "doing science." In art appreciation (COAEP), students can infer situations, issues, and history from paintings and then use research to check the accuracy of their inferences. Of course, teachers should help students generate personal examples from their own lives of when they might have made good or bad inferences and what happened. Helping students gain insight into the conclusions they come to, the decisions they make, and the interpretations they engage in promotes good judgment and character development through reasoning.

Principle S-10: Giving Reasons and Evaluating Evidence and Alleged Facts. Since critical thinking is reasoning, or coming to conclusions based on reasons, critical thinkers know that their reasoning has elements or components that they must pay attention to. They are interested in taking apart their reasoning and the reasoning of others in the interest of systematic understanding. They look to see how the dance we call reasoning is assembled and know that the dance is composed of steps. Critical thinkers know that all reasoning requires evidence for conclusions reached, and critical thinkers have a healthy appreciation for evidence and reasons. Teachers must learn to give reasons for their own actions, decisions, and directives. This modeling will allow students to see the importance of evidence in reasoning. When reasoning, critical thinkers are comfortable being asked for and giving reasons for their conclusions or decisions. They do not find a request for their evidence intimidating or threatening. In fact, they consistently look for reasons and evidence in what they are studying and in the claims they make and hear. More than that, critical thinkers look for evidence that does not agree with their conclusions, and they invite critique of evidence that does. Critical thinkers know that evidence is what we use to support claims or arguments; it's proof. They also know that not all information and facts are evidence, and they work to evaluate evidence that is collateral to assumptions or claims. Finally, critical thinkers know that evidence is not always complete, accurate, or relevant, and they evaluate evidence with a set of criteria.

Application to Classroom Instruction. Teachers should always ask students for their reasons when they come to

conclusions about anything. Teachers can consistently ask questions like: *How do you know? Why do you think that is true? What evidence do you have?* When students' answers seem incomplete or not fully developed, the teacher should continue probing their reasoning. They might ask questions like these: *What other evidence do you have? How do you know the information is true? What assumptions are you making, and how do you know they are true?* When discussing interpretations of literature or art (COAEP), students should be routinely asked to show specifically where in the material they got that interpretation. The sentence, passage, or art representation can be clarified and discussed and the student's interpretation better understood and examined. Students can learn to distinguish evidence from information by instruction in the relationship between claims and evidence. For example, in environmental studies (COAEP), students should be encouraged to examine environmental claims from multiple groups with different points of view in light of the evidence and reasons being used to support the claims. They might then use speech or debate (COAEP) to discuss the evidence and comment on its veracity or validity. Some questions teachers might wish to ask would include: *Why do you think so? How do you know? Where did the evidence come from? How do we know it is true? What is the evidence supporting? Why? Is there any reason to question the evidence? What reasons? How might we find out what other evidence exists?*

Analytical and Evaluative Thinking Dimension

*Principle S-11: Avoiding Overgeneralizations and Oversimplifications. S*implifying problems and experiences in an attempt to make them easier to understand and act upon is natural and normal and a necessary part of analytical and evaluative thinking. Generalizations and simplifications by themselves are not bad; however, oversimplifying and overgeneralizing (viewing issues in terms of black and white, with no sensitivity to their complexity and intricacy) can result in miscommunication, misrepresentation, and outright distortion. For example, viewing people or groups as "all bad or all good" is an example of an oversimplification leading to a stereotype. Seeing the differences between useful simplifications that serve to inform and misleading oversimplifications that seek to misrepresent and distort is an important critical thinking skill. When analyzing and evaluating situations, critical thinkers seek to scrutinize generalizations, probe for exceptions, and as a result use appropriate qualifiers in their language when discussing issues and beliefs. They are aware of the problems with overgeneralized language, such as in using the terms *everyone*, *all people*, *always* and *never*.

Application to Classroom Instruction. Using children's literature to enhance reading skills (COAEP), teachers can ask questions about literature that tends to oversimplify. For example, if a literature selection overlooks factors

by stating only one cause of a problem situation, or event, the teacher can pose questions seeking students' reasoning regarding other possible contributing factors. For example, teachers can ask questions such as these: *Was it all M's fault? How or in what way? Did X help create the problem? How and why? Is this situation "just like that one"? What are some differences?* Also, through simulations of events (COAEP), students can play devil's-advocate roles and bring other points of view to the material they are studying. This is especially true for history or social studies, where simplistic reasons for behaviors or simplistic causes of situations are often put forth. Through such activities as speech or debate (COAEP), students can be instructed and encouraged to develop insight into the appropriate use of qualifiers in language such as *highly likely*, *probably*, *not very likely*, *often*, *usually*, *seldom*, *I doubt*, *most*, *many*, and *some*. This allows students to understand the principles of generalization.

Principle S-12: Developing Criteria for Evaluation. Since critical thinking is a search for merit, truth, and consequently good judgment, critical thinkers know that developing and using criteria for evaluation is an important thinking process. They know that their judgments are the result of the criteria they apply to their thinking. And critical thinkers know that preferential criteria (that is, the criteria we develop to make choices such as what to wear or what ice cream to buy) are different from the criteria we develop to form reasoned judgments. Critical thinkers know that reasoned judgment involves the necessity to include multiple points of view, whereas preferential judgments are simply what we like and require no other points of view. Further, critical thinkers are aware that they have values and how those values enter into the formation of their judgments and criteria. When developing criteria, critical thinkers are aware of the purpose of their evaluation; they pay attention to what is being evaluated and the function that the evaluation is supposed to serve. Critical thinkers know that criteria can vary depending on points of view, and thus they seek to identify and take into consideration a wide variety of points of view when engaging in fair-minded evaluation.

Application to Classroom Instruction. Whether working in environmental studies, art appreciation, or literature (COAEP), the student will always be evaluating. Whenever this occurs, the teacher can ask the student the purpose of the evaluation, what they are attempting to evaluate, the criteria they are using or developing, and the consequences of the evaluation. Students need to gain insight into the difference between the preferential criteria they use, such as what movie to go to or what shoes to buy, and the criteria we develop when engaging in reasoned judgment. When evaluating a theater performance (COAEP), for example, the student should be able to explain her criteria for deciding what was good about the play and what was not. The teacher can then ask how

preferential criteria might be different from the criteria we use to make judgments that require reasoning. Whenever the teacher discusses criteria in a group setting, she should elicit multiple points of view and ask students for their reasoning as to how they developed their criteria and why. The teacher might share how she evaluates students and discuss her criteria with them. Students should be encouraged through questioning to compare and contrast differing criteria and then come to conclusions as to why they are different and the consequences of using one set or another.

As much as possible, students should be encouraged to develop criteria for their own mental performance in and out of school, so that they can learn to routinely examine their own lives against criteria they have authored. These metacognitive activities can take the form of simulations (COAEP) and performance and portfolio assessment. Helping students to see that criteria are issue-specific and then having them develop and apply criteria will give them opportunities to gain insight into the purpose and objectives of a criterion. Some questions that might be useful would be: *What are we evaluating? Why do people evaluate X? What are Xs for? Can you name and describe an X that is good? One that is bad? How did you decide what is good and bad? Are there other categories of criteria we should consider when evaluating X? What are the characteristics of a good X and why?* When student responses are too vague or reveal little, the teacher can ask what the student means. This allows the student to explicate and at the same time see the importance of the criteria for choosing words when attempting to communicate.

Principle S-13: Evaluating the Credibility of Sources of Information. In a world that is characterized by information overload, learning to assess the reliability of sources of information is essential for today's consumer of information. Critical thinkers know that the information they receive is only as good as the source it comes from. They are concerned with evaluating sources of information; they know that vested interests serve often to skew information, and they seek alternative points of view when evaluating sources of information. Critical thinkers analyze not simply information that supports their position but also information that leads to disagreement. They consistently seek contradictions in information and then seek to reconcile discrepancies. They realize that misinformation and misperception influence how we think, and thus we often see what we want to see even if it is not there. Critical thinkers pay close attention to the tendency for bias when judging the credibility of informational sources.

Application to Classroom Instruction. When discussing an issue upon which people disagree, one that requires reasoned judgment, the teacher can encourage students to gather information from a variety of sources representing different points of view. We want students to research differ-

ent points of view if they are to see how information is assembled by various frames of reference. They can discuss discrepancies in the information and then discuss motives behind various points of view and how these motives might influence the information provided. In speech and debate (COAEP), students should be encouraged not only to verify their sources of information but also to research sources that are not in line with their own reasoning. This is essential thinking for debate exercises, as debaters should be able to clearly and precisely set forth information and sources their opponents will rely on. When looking at art criticism (COAEP) and especially published art critiques, students could be animated to discuss the sources of the critique and how they feel these sources might influence the critique itself.

Principle S-14: Analyzing and Evaluating Arguments, Interpretations, Beliefs, or Theories. Instead of using mere preference as a tool for agreeing or disagreeing with a position or claim, critical thinkers know that they must base their judgments on reasoning. They seek to penetrate arguments and assess their merits by using their reasoning to explore assumptions, how arguments assemble and verify information, the consequences and implications of beliefs and theories, and how arguments frame issues and for what purposes. Critical thinkers are sensitive to strengths and weaknesses in arguments, and as we have discussed, they develop criteria they use to judge claims and premises. When evaluating or judging an argument or position, critical thinkers have a healthy appreciation for evidence and attempt to justify claims and conclusions in light of the evidence set forth to substantiate them. Furthermore, critical thinkers analyze arguments and theories in opposition to one another—alongside one another, so to speak—as a way of highlighting key assumptions and differences, contrasting claims, and comparing what they might have in common.

Application to Classroom Instruction. Whether they are working on environmental studies, speech and debate, literature, or art appreciation (COAEP), students will be presented with arguments, interpretations, and beliefs. Their job will be to analyze them in the interest of reasoned judgment. Therefore, these moments should be capitalized on by the teacher to teach processes for analyzing arguments and theories. Instead of asking students if they disagree or agree with a position, the teacher should encourage students to analyze positions alongside one another. A teacher might use questions like these: *What do these arguments propose? How are they different? What information do they rely on? Why is it different? What sources does the information come from? Why do they use different sources? What reasons and evidence are given with these points of view in favor of their assumptions? What are their assumptions anyway?* By practicing analytic techniques such as identifying assumptions, looking for evidence, noting how arguments use informa-

tion, or analyzing their own purposes and how they see problems or questions at issue, students develop the microskills of familiarizing and practicing analytic techniques. They soon become more comfortable in knowing what to look for and how to put forth a good argument. Thereafter, in speech they can plan better by knowing the components of argumentation (COAEP). In journalism, they can write a more comprehensive account of events by knowing how their information fits into theories and interpretations (COAEP). And in literature, they can better understand characters and their mental formulations (COAEP). Whenever possible, teachers should encourage students to develop their own theories, ideas, and arguments and then share them with others for purposes of analysis. This allows them to transfer these critical thinking insights into their own lives.

Principle S-15: Analyzing and Evaluating Actions and Policies. All of us are asked each and every day to evaluate actions and policies. Whether it is judging behavior, rules, procedures, actions of people, or the actions of ourselves, we are constantly analyzing and evaluating actions and policies. When evaluating actions and policies, critical thinkers pay copious attention to criteria and the consequences of actions and policies. They know that actions rest on assumptions, and critical thinkers list evaluating assumptions as an important aspect of evaluating and analyzing actions and policies.

Application to Classroom Instruction. When reading literature, students are consistently introduced to the actions of storybook and literature characters. The teacher can encourage students to raise questions about the actions and policies they read about. The teacher can ask questions such as these: *Why did X do that? What were the consequences of his actions? What reasons did he give for his actions? Who benefited from his actions and who did not? Why? How do you decide what actions to engage in? What do you think about . . . ?* When looking at pollution in studying environmental policies (COAEP), students should examine and analyze the policies. They should look at the policies as they affect all points of view and not just the point of view of the environmentalist or polluter. They should have opportunities to discuss school policies and classroom policies and, if possible, develop their own rules for actions. This way they can learn how policies are designed, for what purpose, for whose benefit, under what conditions, and surrounding what issues. This allows them to evaluate real policies in a real context. And of course, when studying history and social studies, students can consistently analyze and evaluate the policies of governments, countries, corporations, and citizens.

Principle S-16: Comparing and Contrasting Ideals with Actual Practices. Critical thinkers attempt to contrast facts and ideals. They understand the gap between reality and possibility. This is especially true for those interested in self-improvement and social

improvement. Without the ability to see ourselves accurately and clearly, we are not able to admit to our weaknesses and frailties. The tendency is to see ourselves and social reality wedded to what we would like ourselves and reality to be, not what they truly are. Critical thinkers seek to see the gaps between what currently exists and what might be, between what is and what is not. They understand that pointing out the discrepancy between ideals and actual reality is a necessary and fundamental thinking skill.

Application to Classroom Instruction. Whenever students study and discuss society and social issues, whether they are environmental, judicial, social, or ethical, they should be comparing ideals with actual practices. In literature, students could compare and contrast actions and statements by characters and narrators to show discrepancies between ideals and actual practice. When discussing issues such as generosity and honesty, for example, students can be encouraged to express their views on generosity and honesty in actual practice. They can use examples from their own lives to show relevance and understanding.

Because textbooks consistently present sanitized versions of social events, students should be afforded resources that allow them to see how what is depicted ideally compares to actual practice. For example, when studying the free market, students can see where this ideal is violated in reality. This means looking under the surface of the claim to find actual situations where this assumption does not work. Socially idealistic claims are made in environmental studies by people of many points of view, and students need opportunities to see how actual practice compares to these claims. In assembling speeches or debates, students should be able to submit evidence from actual practice that shows idealistic claims to be false. This allows them to pay attention to details while at the same time learning to analyze generalities through specifics. The teacher might animate students to become conscious of their own actions and how their actions might or might not be supporting the ideals and behaviors the students themselves profess or want. These discussions can be used to talk about school policy, behavioral problems, and conflict resolution.

Principle S-17: Evaluating Perspectives, Interpretations, or Theories. Whenever we evaluate perspectives, interpretations, and theories, we lay them beside one another in order to test their weaknesses and strengths. We want to see how ideas stack up against one another so that we can judge them. We call this dialectical reasoning. As soon as we begin to scratch the surface of perspectives or theories, we begin to see which ideas are consistent, which clash, which are not logical, which are rational, and on and on. We do this so we might develop our own perspective, find ideas we wish to integrate with those we already accept, and reconcile conflicts that might exist. To do this, we need to feel comfortable moving in and out of conflicting theories,

beliefs, and points of view. We engage in the notion of critique in the interest of synthesis or the development of new ideas.

Application to Classroom Instruction. When the student is faced with two or more points of view on any issue, she must evaluate perspectives and interpretations side by side. This dialectical reasoning can be encouraged through stories in literature (COAEP). Speech, debate, and environmental studies all engage divergent points of view (COAEP) and thus can be opportunities for reasoning dialectically. Real life affords countless opportunities to reason dialectically, and students should be encouraged to express their own voice alongside that of authority when evaluating perspectives. Questioning assumptions, inferences in thinking, how information is used, the consequences of thinking, and how points of view identify goals and problems would be the substance of discussion. Students should be questioned as to how people with conflicting points of view reason, and they should be able to analyze the constituent parts of a reasoned argument.

Systematic Thinking Dimension

Principle S-18: Comparing Analogous Situations: Transferring Educational Insights into New Domains. Whenever we think, our mind organizes information in such a way that we are able to use it. When we apply ideas to new situations, we look for analogies. Analogies allow us to transfer what we are learning or discovering into our own lives in new contexts. Analogies help make learning relevant and should be encouraged as a form of visualizing thinking. Critical thinkers forever look to transfer what they have learned into new contexts. They know that this transfer, or learning to reason by analogy, enhances their ability to capture an idea or system of thought. By offering teaching and learning opportunities that are personalized and relevant, students can begin to see how education affects their own lives and the issues they involve themselves in. For students to gain insight into how to analogize situations, they must have opportunities to organize course material. By organizing material and then applying insights to a multitude of analogous situations, students will be able to see repeated patterns, common situations, and varied organizing principles. Furthermore, they will increase their ability to retain information because they will learn how to develop analogous thinking as a form of reference for what they are learning.

Application to Classroom Instruction. Critical teaching asks students to become authors of their own learning. It encourages them to do this by applying what they have learned to other situations that are analogous. For example, when studying an environmental problem (COAEP) in one state or one community, the student might be encouraged to look for analogies or similar situations in their own communities or states and then study how the situation has been handled. This will allow them to transfer the insights

from one situation into another, to find out what is similar and what is different. In studying literature (COAEP), students should be able to compare and contrast analogous situations. Conflicts in literature usually parallel something in real life, and the teacher should look for opportunities for students to transfer their insights into concrete, relevant situations they might face.

When learning a new skill or discovering a new insight or way of doing something, students should be encouraged to use it in other, analogous situations. This way they will see the shortcomings and merits of the skills they use. When learning a drama principle (COAEP), for example, the teacher could discuss with students how it might be used in analogous situations, like giving a speech or presenting an impassioned plea to a jury. And by encouraging students to come up with analogies of their own, the teacher can assess whether learning has taken place.

Principle S-19: Making Interdisciplinary Connections. Critical thinkers do not let the fragmented approach to learning control their thought patterns. They look to conceive of the parts relative to the whole and the whole relative to the parts and thus know the necessity of transferring insights across and through disciplines. They understand that all learning is interdisciplinary. By using insights from one subject matter to understand another, they are able to uncover similarities in systems, patterns, and thoughts among disciplines. By approaching issues from a multitude of different perspectives, critical thinkers develop a more holistic approach to learning and understanding that offers greater width and depth.

With the assembly-line or fragmented approach to knowledge that divides knowledge into disciplines or subject matters, students unfortunately often do not see the interdisciplinary connections among the subjects. They come to see mathematics as something done during math period or math time and not as something that, let's say, the author or the artist does. They learn that the arbitrary distinctions between disciplines control their thinking, and they have a difficult time discovering the logic of what they are learning.

Finally, by offering comments, questions, demonstrations, and examples of what they are learning, students will be able to see the interdisciplinary connections between their lives and what they learn in school.

Application to Classroom Instruction. Teachers can begin by viewing the interdisciplinary connections between what they teach and what they want students to learn. They can begin offering reading and writing in mathematics as well as art instruction in science. They can involve students in speeches and debates that allow them opportunities to see issues from varied points of view (COAEP) while orchestrating various disciplines. They can have students involve themselves in simulations that call upon them to harness reading, writing, and speaking

in the service of a project. And, whenever possible, teachers should look for opportunities to collaborate with other teachers in weaving disciplines together. In this way learners become actively involved in extending their learning into other contexts. Students could be given opportunities to write brochures about what they are learning in environmental studies (COAEP), which would incorporate various skills and disciplines. And teachers can ensure that a good variety of resources are available that look at issues from a broad perspective involving a host of disciplines. Students can then perform research and writing using these resources. In studying journalism they can be encouraged to cover stories from more than one angle, working together to develop the story (COAEP). With the Internet, there is no shortage of interdisciplinary connections in learning, and the computer should be used to highlight the dependency of one subject on another.

Principle S-20: Noting Significant Similarities and Differences. Noting significant similarities and differences is a lifelong activity. Critical thinkers approach this process with an understanding that the way we note differences and similarities in theories, points of view, and actions influences who we are, how we choose to experience reality, and our choices and judgments. Critical thinkers understand that we look for similarities and differences in reality depending on our purpose, our reason for wanting to figure something out. Similarly, we call attention to what is similar and different about situations for a specific purpose or goal. What is important and not important in noting these differences is essential to critical thinkers, who also are sensitive to the fact that often what appear on the surface as differences are really similarities in disguise.

Application to Classroom Instruction. Students are always asked by texts and teachers to compare and contrast something or other. Whether it is an idea or a weather phenomenon, students are asked to note differences and similarities. Yet these activities are often devoid of purpose, and the student is instead immersed in trivial pursuits executing mechanical cognitive functions for no seeming purpose. For example, comparing shoe size might be important to a shoe salesperson or athlete, but it is of little importance to a first grader. Although the activity may be cute, if it is not attached to specific purposes, students fail to transfer insights into relevant contexts, and the lesson is not learned. Whenever possible, ask students to compare and contrast for specific purposes. Use relevant, real-life activities to teach this concept, because it is best learned within the context of daily life. When using academic materials, ask students what they think could be compared and contrasted and why. For example, in literature (COAEP), we might want to have students compare and contrast storybook characters or literature characters for the sake of illuminating an idea, such as friendship or love. With this goal in mind, students can then use the results

of the comparing and contrasting to draw conclusions about people, develop criteria, and judge actions. Students should be actively seeking associations and learning to develop connections between ideas.

Collaborative Thinking Dimension

Principle S-21: Reasoning Dialogically: Comparing Perspectives, Interpretations, and Theories. When we engage in dialogical thinking, we engage in dialogue and communication to reason our way through problems and issues. This thinking involves an exchange of differing points of view in an atmosphere of civility and inquiry. Critical thinkers wish to engage in fruitful dialogue aimed at uncovering truth or merit. Critical thinkers attempt to develop a dialogue that seeks to process ideas, to consider goals and purposes, to look at information and assumptions, and to generate and evaluate solutions relative to consequences. They know that much of what parades as problem-solving dialogue is really posturing and ego defensiveness. By learning to integrate critical thinking principles and strategies within dialogue, students learn to become more focused when discussing subject matter and subject matter issues; students learn a language for thinking. Students also learn to concentrate on asking questions as opposed to making statements, and they cultivate Socratic thinking when they are pursuing issues. Their dialogue becomes rich and issue specific when necessary, while they attempt to avoid unnecessary ego posturing.

Application to Classroom Instruction. By raising and entertaining open-ended questions about whatever is being studied, students are afforded ample time to engage in dialogue. By modeling questioning in front of students and consistently asking students for their input concerning ideas, teachers can encourage and engage students' dialogical thinking. Posing problems helps by affording students the questions necessary to probe through reasoning. When pursuing environmental studies (COAEP), students can be encouraged to put what they are learning in the form of a question and then, with or without teacher direction, begin to dialogue about the issue. Of course, debate is a form of dialogue (COAEP), and debate teams can be fostered to engage students in the dialogue of persuasion or argumentation. When conducting simulations (COAEP), students can write their own dialogues between people regarding issues and then act out the dialogues. It is necessary, in learning dialogical reasoning, to deal with issues that lend themselves to reasoned judgment in an atmosphere and environment that encourages students' ideas and discussion. In this environment the teacher facilitates discussion and concentrates on asking questions.

Principle S-22: Reasoning Dialectically: Evaluating Perspectives, Interpretations, and Theories. When we reason dialectically, we are reasoning about and

between different points of view. Our purpose is to test the strengths and weaknesses of ideas and opposing points of view. Placing our ideas alongside those that are different or in disagreement with our ideas lets us synthesize our understanding, rejecting some ideas and accepting others. This is a difficult process for those who have strong beliefs, and it is precisely for this reason that learning to reason dialectically is a critical thinking skill. However, to reason dialectically, we must be clear and precise when analyzing points of view. We cannot assume an understanding of competing theories and ideas, but we must strive to ensure that we actually understand them and then reason from premises not in keeping with our own. This means that we must first recognize the point of view before we can even begin to reason about or within it, and it is through questioning that we begin to excavate or uncover the point of view in question. Furthermore, reasoning dialectically involves dialogical reasoning as we discuss and debate ideas. But, more important, learning to reason dialectically translates into learning to understand points of view clearly and accurately, state them, and then examine the merits and weaknesses of the ideas before we reject or embrace them.

Application to Classroom Instruction. Whenever students are faced with competing theories, ideas, or points of view, they can practice reasoning dialectically. A debate (COAEP) or a simulated court trial (COAEP) offers ample opportunities for students to learn the art of dialectical reasoning. Whenever they engage in mock trials or simulations (COAEP), they are scrutinizing the claims of those with competing points of view. In literature (COAEP), young children can do the same by attempting to decide who is right or wrong or who might be telling the truth or lying. Journalism and broadcasting (COAEP) should provide opportunities for students to discover multiple sides of a story and then learn to report in a dialectical manner. And in environmental studies (COAEP), there is no shortage of divergent points of view on controversial issues that promise to engage students' dialectical thinking.

Principle S-23: Developing One's Perspective. Developing our own perspective is a human process that involves and forms our identity. How we sort out our experience in the world, the ideas we are exposed to, and the beliefs we adopt to some extent define who we are as human beings. Uncritical thinkers assume that there is only one perspective that is valid—theirs. Critical thinkers understand that the notion of perspective is a result of perception and how we see and organize the world. They understand that there are many perspectives and differing perceptions about the world that have merit. While uncritical thinkers embrace their perspective as the only perspective, critical thinkers analyze differing points of view and develop their perspective through dialectical

analysis and insight. They know that developing one's own perspective is an arduous task that requires reasoning within and about different points of view. Good critical thinkers look for and are sensitive to evidence that does not support their point of view. Critical thinkers understand that they must scrutinize their own claims and perspectives through questioning, and they seek to subject their reasoning and theories to rigorous examination and evaluation.

Application to Classroom Instruction. Through dialectical and dialogical reasoning, one develops perspective. Assuring that students have adequate opportunities to engage in perspective building is crucial. In debates, journalism, speech, and simulations (COAEP), students can learn to develop their perspectives in light of what others believe and then learn to defend and challenge what they believe. Because texts generally fail to engage students in thoughtful dialectical and dialogical learning, the teacher must constantly seek to bring in competing theories, ideas, and points of view. In art appreciation (COAEP), for example, students can talk about art and develop their own perspectives as to what is good art and what is not. In this manner they learn to develop artistic criteria and learn to reason artistically. Asking students to look at relevant life issues, policies, rules, laws, and arguments and then engaging them in discussions, one on one or with the teacher, allows them to develop their ideas and explore other points of view. What the teacher wishes to do is ask students what they believe and why. This calls upon them to look at what they believe and encourages them to inquire as to how they might have come to believe what they believe and what the implications might be.

Principle S-24: Listening Critically. Many people are selective listeners rather than active listeners. This means that they selectively listen to ideas, theories, and points of view, and as a result hear what they wish to hear, not what is actually being said. Critical thinking teaches active listening or the ability to understand clearly and precisely through listening to the points of view or theories of another. Critical thinkers know that to listen critically is paramount for good reasoning, and they also know how difficult it can be to integrate auditorily the thinking of another into one's own thinking. Furthermore, critical thinkers know that good communication is a two-way street that requires not only that we broadcast our ideas, but that we listen to others. The act of critical listening is an act of accurate and precise interpretation of what one is listening to. When entertaining another point of view through auditory means, critical thinkers know it is important to place their thoughts on probation and actually enter into the point of view in an attempt to follow its train of thought.

But listening is more than artful hearing. It is a form of reasoning that requires that we engage ourselves in silent dialogue, questioning as though

we might locate ourselves within the body of the thought of another. Good listeners know that they need clarification for words and concepts, and they seek examples and clarification from what they are hearing. Critical listening is a skillful process developed over time with practice. It is a highly skilled process that is absolutely essential for good learning.

Application to Classroom Instruction. Modeling good listening must be a main goal of critical thinking teachers. Using questioning to ensure that we understand what our students are saying models for students the art of critical listening. Using patience, helping students slow their thinking down, and engaging them in thoughtful conversations shows them the value of listening critically and engages them as thoughtful participants in their own educational drama. But modeling is not enough; students should consistently be learning how to listen to other students, and this is a difficult chore for both the teacher and the student. We can ask students to listen to their fellow classmates and explain their reasoning: *Shareka did you understand what Carlos just said? Juan, can you tell us what she just said?* The teacher should ask students to clarify in their own words what they have heard, whether it is another student's words or something else they are listening to. When viewing videos or educational movies, the teacher can stop the video, ask students what they heard and saw, and ask them to explain it in their own words. Having students act out, in simulations (COAEP), discussions that involve good listening can help them see the importance of listening. Debates and speeches (COAEP) provide opportunities for students to listen critically and give examples of what was said to ensure understanding.

Finally, all good dialogical and dialectical reasoning requires critical listening, and teachers can metacognitively discuss with students the consequences of poor listening. They can discuss strategies for listening and use these strategies in any thoughtful discussion.

Principle S-25: Practicing Questioning: Learning to Clarify and Explore Beliefs, Theories, and Ideas. At the heart of critical thinking lies questioning. If nothing else, good critical thinkers know the value of questions. They know that the word *quest* comes from the word *question*, and they know that to obtain knowledge one must question deeply. Furthermore, they know how to focus their questions surgically in an attempt to ask the right ones. They are aware that every discipline has its own unique set of questions, and they seek to capture an understanding of the questions asked in different disciplines. Critical thinkers not only are comfortable with asking questions, but do not feel intimidated or threatened when their thinking is questioned. They understand that questions are tools that excavate and probe thought, and they know that to figure out what they do not know they will need the power of questions. Helping students practice questioning

in an environment of inquiry and civility is essential to develop their critical thinking capacities. It is not simply teacher-generated questions that we are after. Critical thinking teachers know that helping students formulate their own questions about what they are studying and learning will prepare them for continuous, lifelong learning.

Application to Classroom Instruction. Texts provide few opportunities for students to learn how to generate questions. On the contrary, they ask the questions and students answer them. We want students to ask and answer their own questions so that they might begin to learn how to probe the logic of what they are studying. For example, when introducing a new concept in environmental studies (COAEP), such as ecology, the teacher might ask students to generate a list of questions they might need answered to understand the concept better. After watching an educational video, the teacher might ask students to pair up and write down everything they remember from the film and then turn what they wrote into questions to be answered by other students. Using critical reading techniques, students can learn to turn what they are reading into questions. Turning bold subheadings into questions allows students to read to answer their own questions. Of course, when engaging the whole class in discussion, the teacher should encourage students to ask questions they would need to have answered to understand better what is being studied. These questions can be written on the board to be used as a basis for further classroom discussion or as assignments.

Because many students have little experience or negative experience with questioning, it is important to introduce the ideas slowly and gently. Students need to feel comfortable when they are questioned and when they are questioning, and this will only happen if they see questioning as an effective way to uncover the best decisions or solutions to problems and academic pursuits. They must be encouraged to discuss their own or other learner's responses and beliefs. Therefore, modeling good questioning every step of the way is essential for critical thinking teachers. Teachers should be seen thinking out loud in the form of asking questions in front of their students, probing for meaning and understanding.

In journalism and broadcasting (COAEP), students will have many opportunities to use questioning to uncover ideas and explore issues. How students put together journalistic stories could be discussed, and questioning could be highlighted as a means for storytelling.

Finally, to teach students the art of questioning, it is necessary to pose problems as part of the curriculum, that is, to present what is being studied in the form of questions to be researched and answered. This allows students to see disciplines and subject matter as little more than problems to be solved or issues to be decided and helps them learn to think in terms of questions as opposed to answers.

Emotional Intelligence/ Affective Dimension

Principle S-26: Independent Thinking: Developing an Investigative Orientation. Critical thinking at its core is independent thinking, or thinking for oneself. Critical thinkers use critical skills and insights to reveal and reject beliefs that are irrational. They try to figure things out for themselves, seek to develop their own perspectives and have a healthy orientation toward investigation and independent research. They thoughtfully form principles of thought and action and do not mindlessly accept ideas that are presented to them without investigation. They are not easily manipulated and place a high premium on discovering knowledge as opposed to mindlessly and passively accepting information and ideas. Finally, developing an investigative orientation means that critical thinkers strive to determine for themselves the relevancy of information and when and how to apply a concept or use a skill. They are self-monitoring self-starters who enjoy using their minds to uncover complex answers to complex problems.

Application to Classroom Instruction. Students should be encouraged to discover information and use their knowledge to think for themselves. Merely giving students "facts" or telling them "the right way" to do things promises that they will be trained, not educated. So, for example, in all the areas of COAEP, students should be motivated to think for themselves and investigate new ideas. In the area of simulations, for example (COAEP), students would be encouraged to take an active role in their own learning, not by simply involving themselves in activities, but by making predictions and plausible inferences and generating and assessing solutions to problems within the body of those activities. Using children's literature (COAEP), students can be encouraged to formulate their own ideas and then defend them or assess them for validity. They can be encouraged to engage in environmental research and inquiries (COAEP), and within journalism and broadcasting (COAEP) to employ investigative pursuits and skills in the interest of community development. Literature lessons (COAEP) can be remodeled so that students group and discuss writings they have read, entertaining different ways to classify and organize them. Activities in speech and debate (COAEP) allow students to put forth their independent points of view and then begin the process of assembling information that provides evidence for their positions or beliefs. Similarly, engaging students in chess activities allows them to develop independent thought and action as they test and communicate complex chess ideas and investigate the results.

Principle S-27: Developing Intellectual Empathy. Intellectual empathy asks us to exercise reciprocity, or place ourselves in the shoes of others, so to speak, who may not look at the world the way we do. It is a particularly difficult skill in the face of the tendency to accommodate our own self-justifying

belief systems, often adopted through habit or custom. Intellectual empathy asks us to consider points of view fairly, even if they do not agree with our experience, morals, and principles. It asks us to reason fairly by overcoming the tendency to wed ourselves to egocentric perceptions and belief systems. Often, we tend to judge other positions, thinking, issues, and theories, without accurately and precisely reconstructing them as points of view. What fair-minded critical thinking requires is that we fairly and accurately construct the reasoning of another in such a way that we reason from their premises, capture their logic, and accurately reconstruct their points of view. Developing intellectual empathy contrasts with developing what often poses for critical thinking: the ability to manipulate ideas and others for one's own purposes and agenda. Manipulation and misrepresentation also require cognitive abilities, but they are not the abilities of critical thinking. Learning to reason within points of view that are not in keeping with our own is essential for higher-order learning and character development. The opposite of empathy is narrow-mindedness, which is precisely what we do not wish to encourage in students.

Application to Classroom Instruction. Using the relevant experiences of everyday life, the teacher can encourage fair-minded thinking by approaching conflicts and disputes as teachable moments. Patience, empathy, and understanding of learners themselves must be evident in teacher practice. Helping students evaluate thinking when conflicts arise teaches them essential principles of mediation and conflict resolution as they begin to pay attention to their thinking and the thinking of others. They learn to enter into other points of view empathically and to communicate compassionately and with recognition. In simulations (COAEP), classroom or playground disputes can be reconstructed and acted out. Students can engage in setting up real-life or simulated mediation procedures for resolving disputes when they arise that require reasoning within disputed points of view.

In discussing literature (COAEP), teachers can use questioning to help students artfully reconstruct the point of view of different storybook characters for purposes of fair-minded evaluation. Debate allows for a principled exchange of ideas and points of view (COAEP). Debate and speech can be used to help students learn to state the position of others clearly and accurately, as well as learn to clarify their thinking with evidence and reasons for what they agree with and what they do not agree with. Journalistic and broadcast endeavors (COAEP) can be analyzed to help students develop criteria for fair-mindedness; students might analyze articles and broadcasts to see if the authors exercised empathy in reporting on various issues. When actually engaged in journalism and broadcasting, students can be animated to treat issues fairly, that is, from multiple points of view; as a class, students

might discuss the difficulties in developing fair-minded thinking.

Principle S-28: Developing Intellectual Humility: Learning to Place Our Judgment on Probation. If critical thinking is to some extent figuring out what one does not know, then humility is a necessary component. Humility asks us to recognize and admit that we have not figured everything out, that there are limits to what we know and think we know. It asks us to substitute self-righteousness with self-questioning and is based on the assumption that one should not claim more than one knows. The opposite of intellectual humility in this context would be intellectual arrogance, or claiming more than we know. Arrogance operates to damage learning opportunities because arrogant persons fail to include and examine diverse information and points of view. "Why should I read more or listen more?" asks the arrogant person. "After all, I have it all worked out!" Humility implies that it is okay to say, "I don't know." Without humility, students cannot distinguish between what they know and what they merely believe, and thus the cognitive work required by critical thinking cannot be done.

Humility does not ask us to be submissive or indecisive but to acknowledge the limits of our knowledge and to put together plans to acquire the knowledge we need. In recognizing that we might not have enough information, or have not looked at an issue from varied points of view—or perhaps do not have the evidence we need to accept or reject an idea—we learn to suspend judgment, placing it on probation until the necessary analysis has been done. Thus, humility operates to arrest snap judgments or compulsive decision making and problem solving.

Application to Classroom Instruction. Teachers can teach humility in the way they present course material. For example, when studying any discipline, teachers can encourage students to make a list of questions that they would need to have answered in order to understand what they are studying. This can be done in pairs or individually, and the questions themselves can serve as the basis for class discussions or as questions to be researched in cooperative groups. By using questioning as a tool to help students figure out what they do not know, teachers help students to understand that learning is a *process* and not simply a *result.* They come to understand that saying *I don't know* can be translated into powerful questioning opportunities to create work plans to find out more. When researching, students can come up with questions and then exchange them with other students, thus answering each other's questions as a basis for learning.

Perhaps the most important thing a teacher can do to teach intellectual humility is to model it whenever possible in front of students. Students need to see their teacher as the embodiment of the attitudes and values of humility if they are going to gain

insight into humility as a worthwhile value. Critical thinking teachers understand that it is important to think out loud in front of their students and actually muddle through thoughts at times, admitting that they do not have all the answers. They also know that humility is not a weakness but a strength, and they seek to model it whenever possible. Modeling humility would entail stating *I don't know* when confronted with questions one has not thought about or had time to answer. Then, with the class, a plan can be put together to find out what is missing and how to go about getting the answers. This contrasts with the tendency on behalf of some teachers to pretend they know the answer in order to avoid saying they do not know.

Principle S-29: Developing Intellectual Imagination and Curiosity. Developing the ability to imagine how things might be or what answers might exist to complex questions is essential for critical thinking. Having the courage to dream and think beyond the limitations of a given moment transfers into developing insight into the necessity for further exploration and discovery. Further, imagination develops an emotional intelligence that allows one to cultivate hope, creativity, and possibility. Helping students gain insight into imaginative thinking equips them with the understanding that there exist a multitude of creative solutions to complex problems and many possibilities for rational learning and living. Furthermore, creative and critical thought require a curious mind that seeks questions and answers. Armed with curiosity, students can begin to go beyond minimalism, or reducing inquiry to what is expected from them. Instead, they can look for new and innovative ways to extend their inquiry and feedback into all areas of study they are pursuing. This curiosity and imagination has the potential to translate into lifelong living and creative problem solving as students begin to see the expansionary potential of their minds and discover inquiry as a powerful process for continuous lifelong learning.

Application to Classroom Instruction. Teachers can have students use a variety of methods to develop their creativity and imaginative minds. Simulations (COAEP) encourage students to develop themes within what they are learning and to generate questions that go beyond simple rote memorization and learning. They can use debate (COAEP) as an opportunity to do research into areas they are curious about and then learn to structure their learning for presentation purposes. Journalism and broadcasting (COAEP) can encourage students to discover new ideas and new points of view and can help them gain insight into the benefits of curiosity. By helping students formulate questions within any subject area that goes beyond the simple representation of the subject in texts, teachers help students discover that their questions will actually tell them more than the texts do. This often encourages them to do research to find out new information and ideas. Art and theater (COAEP) allow

students to develop their creative qualities by using their imagination and curiosity to discover new ways to represent sets, perspective, ideas, art, and artwork. By linking art history with actual history instruction, students can learn to think holistically about art and its context in history and social reality, and they can then be encouraged to use their curiosity and imagination to find out more about a certain period in history. Whenever possible, teachers should capitalize on students' interests and motivate them to inquire and discover more about what they are learning or hope to learn.

Principle S-30: Developing Intellectual Efficacy. Critical thinkers acquire an important emotional intelligence, which involves developing confidence in the power of reason to solve problems. They realize that life is little more than problem solving and decision making, and they believe in their abilities to solve life's problems with their minds. They also realize that reasoning is an act that requires the use of reason, and they believe that developing better reason leads to better reasoning, better results, and better decisions, as well as better solutions to problems. Therefore, the development of confidence in one's reasoning ability goes hand in hand with the development of self-esteem. Self-esteem, as used here, is based on competence, and competence is accomplished through skillful and clear thinking. The development of self-esteem must involve the development of one's confidence to reason. Confidence in reason is an attitude that motivates people to keep their minds open, confront irrational change through reasonable discussion, and make sense of the world with the expectation that sense can be made. Making sense of subject matter and believing one can do it are at the heart of individual accomplishment. Students who believe they can accomplish academically will translate this insight into their personal life and become lifelong learners, equipped with the confidence not only that can they learn, but that learning can help them make sense of the world and of themselves.

Application to Classroom Instruction. Every time you, as a teacher, reason in front of your students, every time you model for them that sense can be made out of academic material, rules and regulations, and daily activities, you are modeling self-efficacy, or the belief in one's ability to make sense of the world. Sharing your reasoning with students is essential for good modeling. When you question students and encourage them to question and then seek answers to their own questions, you are setting up opportunities for empowerment and the development of confidence. Students should be encouraged to question deeply within all areas of school life, including academic disciplines. They should be animated to see what they study as a system with reasonable or unreasonable constructs, and they should be encouraged to think about their roles as thinkers and learners. Many students have no confidence in reason because they are rarely asked to

reason; rather, they are told what to do, when to go to bed, what grammar rules to use, what scientific principles are important, and what social studies questions will be on the test. Because they often do not see reason being used effectively in their own lives, because they have few models for reasoning, they come to see reason itself as unreasonable and do not count on their mental faculties and independent thinking to figure out problems and make decisions. As a teacher you can ask students why a person learns this skill or that skill, as opposed to mechanically introducing skills in a rote manner. When students engage in chess activities, for example (COAEP), the teacher can ask them for their reasons for executing various moves. When developing a story for journalistic purposes (COAEP), students can be animated to give their reasons for writing the report one way or another.

By asking children to consistently reason their way through subject matter, you, as a teacher, are teaching them the power of reasoning. Capitalizing on students' daily lives and interests by critically questioning them and asking them to apply what they have learned to their own lives, teachers encourage the transfer of faith in reason to daily life.

Principle S-31: Developing a Tolerance for Ambiguity. Ambiguity is a state of affairs that connotes a lack of clarity. Ambiguous situations are not quite clear or have not been figured out fully. Developing a tolerance for ambiguity or situations that are not clear, that do not have black-and-white answers and for which information might be lacking, is essential in a world that is increasingly subject to rapid global changes. Becoming comfortable with unresolved situations, with uncertainty, and with unfamiliar situations and complex questions is an essential attitude for critical thinking. Many people have developed rigid ways of looking at the world, and when faced with uncertainty, change, and lack of clarity, they often become immobilized. Many people rummage through their past looking for answers to the future. Confronting ambiguous relationships and situations with a sense of confidence in our critical thinking is paramount if we are to sort through tremendous change and complex fluctuations. The development of tolerance for ambiguity leads to divergent thinking or expansionary thinking. Those with this tolerance have no problem with frequently changing patterns and thoughts that are hard to hold in one place. They look toward processes as opposed to results, and they learn to move comfortably in and out of situations.

Application to Classroom Instruction. Whenever possible, it is important to have students research and report on open-ended questions. Social studies, environmental studies (COAEP), and journalism and broadcasting (COAEP) allow students to tackle problems that are somewhat ambiguous or unclear. They can be encouraged to find out what information is missing, how they might find the information they need, how they should classify it and use it,

and for what purposes it should be used. They can be encouraged to develop alternative scenarios in the event that circumstances do not develop as they think they should. This affords them opportunities to engage in consequential and anticipatory thinking. In simulations (COAEP), students can be encouraged to develop imaginary worlds containing mystery and enigma (COAEP).

Problem-solving opportunities in all disciplines that allow for more than one way to solve problems help students see that there are not necessarily black-and-white answers and rigid processes for problem solving. This translates into more mental ease when facing situations that are ambiguous.

Principle S-32: Developing Intellectual Perseverance and Discipline. Solving problems and making decisions can be an arduous process that takes time and effort. Critical thinkers know that to develop good thinking takes time, and they know they must discipline their minds to focus, analyze, and integrate what they learn. They recognize the need to struggle with time management, to prioritize what they feel is important, and to arrest the tendency toward impulsiveness and impatience. In a culture that tells students that they can be anything or accomplish anything with little or no effort, from reading ten books in five minutes to learning a language in thirty days, it is not difficult to understand why many students do not persevere and discipline their thinking. Patience and hard work lose their shine in a quick-fix culture of immediate gratification. Helping students gain insight into accomplishment and its relationship to hard work is essential if we are to help them develop critical thinking skills. The development of intellectual perseverance will help students develop confidence in their reasoning abilities as they see that hard work does pay off in the long run, and they learn to slow their thinking down in the interest of better mental performance.

Application to Classroom Instruction. Literature (COAEP) can provide insight into the benefits of intellectual perseverance and discipline. Students can discuss characters' actions and decisions; for example, using stories such as *The Tortoise and the Hare*, students can not only get insight into the parable, but perhaps transfer this insight into their own life. Studying great artists and their works can help students see what is involved in actual art production and the hard work that it entails (COAEP). They can be animated to engage in lengthy art projects that require them to persevere and discipline themselves for long periods of time. Chess (COAEP) provides another excellent way to develop perseverance and mental discipline as it requires time to make rational moves. Students can be encouraged to discuss what they did with their minds during a chess game and how focus or discipline helped them. Children's own experiences should be used to develop this concept and can form the basis for writing activities or classroom discussions. When looking at environmental problems, students can develop

problem approaches in groups and then discuss how they came up with their thinking (COAEP).

What teachers need to do is raise deep questions that require deep thinking and design activities as much as possible that are lengthy projects that require time to complete. In this way students will come to see that how they persevere and discipline their minds has everything to do with the results they get, both academically and in real life.

Principle S-33: Developing Intellectual Courage. Having the courage to confront one's own irrationality is essential for critical thinking. Admitting to mistakes in thinking requires a great deal of intellectual courage and is an essential trait if we are to arrest our mistakes and improve our thinking. Critical thinkers know that it takes intellectual courage to admit that you might have judged someone or his or her ideas unfairly. Furthermore, to think independently requires that we develop the courage to squarely face ideas that are unpopular or viewpoints that are not fashionable. Critical thinkers do not want to get lost in the anonymity of a crowd, but seek to determine for themselves what is true, what is right, and what they should believe.

Without courage when engaging in collaborative problem solving, "groupthink" can develop as cowardice replaces confrontation. To have the courage to confront ideas one does not think are rational takes a commitment to courageous thinking that is often absent from many students as they seek to belong to one social group or the next.

Application to Classroom Instruction. Simply stated, teachers promote intellectual courage as an attitude of thinking when they include students in consistent open-minded discussions. Teachers who encourage questioning and confrontation over ideas and dialectical and dialogical reasoning develop the courage to confront irrationality. They also know that controversy creates courageous moments, and they seek to raise controversial issues when discussing ideas; they work to provide a comfortable atmosphere for raising ideas. When discussing environmental issues (COAEP), for example, multiple points of view should be brought in so students can take positions and learn to defend what they believe. Debate allows for the defense of one's ideas (COAEP), and students should be encouraged to marshal evidence for what they believe in an atmosphere of civility. Bringing in unpopular beliefs through journalism or broadcasting (COAEP) allows people to take positions, discuss them, and then look at their own thinking to see if changes are necessary. Individuals and groups who exercised courage when confronting unpopular ideas—political, social, and personal—should be the object of inquiry. Students' lives should consistently be harvested for relevant opportunities to discuss peer group pressure, decision making, and problem solving.

Principle S-34: Developing Intellectual Civility. Reasonable minds may disagree, but it is the form of disagree-

ment that remains salient. Learning how to agree to disagree in the face of a lack of consensus is paramount. It is not enough to ask students to work in groups if they do not have the ability to act and behave civilly toward those who hold ideas with which they disagree. And we cannot have dialectical and dialogical learning opportunities if students do not know how to engage in them. Helping students gain insight into how we as human beings behave civilly in light of controversy is essential if we are to learn to cooperate in a learning environment. We may not all agree, but we do not have to be disagreeable to disagree.

Application to Classroom Instruction. Any time students are engaged in debate (COAEP) or are discussing ideas related to what they are studying, they have opportunities to develop insight into the necessity for civility. As a teacher you will look for opportunities that allow for open-ended discussions that involve various points of view. This gives students opportunities to see that disagreement does not have to be disagreeable. Further, the teacher can work with students to help them develop processes for dealing with disagreement. This allows them to engage in mediation and conflict resolution through simulations (COAEP) or real-life activities. Whenever we allow students to discuss their own beliefs and worldviews with other students, we encourage this form of reasoning. Using cooperative groups as much as possible for classroom problem solving and decision making will allow students to develop civility in collaborative contexts. With the development of intellectual civility among students, a climate of courtesy and respect becomes evident in the classroom.

Principle S-35: Developing Intellectual Integrity. Holding ourselves up to the same thinking standards that we hold others to is paramount for the development of integrity in thinking. The tendency is to have lower standards for ourselves than we do for others, which is hypocritical and antithetical to integrity and honesty in thinking. People who can honestly admit discrepancies in their thinking, who seek to raise the bar, so to speak, for themselves as well as others and who look to hold themselves up to the same rigorous standards they adopt for others, have integrity in thought. Because critical thinking requires consistent intellectual standards, it is paramount that students gain insight into the role of integrity in thinking and have opportunities to develop it.

Application to Classroom Instruction. It is important for teachers to model integrity for students. Favoritism, inconsistent application of standards and rules, and lack of modeling give the opposite message to students. Thus, the critical thinking teacher is aware of her actions and seeks to explain to students why she has done this or that. When discussing ideas in texts with students, critical thinking teachers look to see if abstract ideas are applied consistently. They lead lengthy discussions in the area of application of standards and judgment because they know that students, like many people, judge others differently than they judge themselves. Current events provide count-

less opportunities to discuss integrity and honesty in thinking. In literature (COAEP), students are encouraged not only to judge characters but also to talk about their own lives and how difficult it might be to act with integrity and why. Critical thinking teachers encourage inquiry into controversy and contradictions and reason with their students in open formats or individually. They also work with students in all areas to develop reasoning criteria and then reason with students about the criteria, noting their students' tendency to favor themselves.

Organization of the In-service

The appendix represents a visual representation of the proposed in-service for teachers regarding the new critical and creative thinking standards for gifted and academic excellence programs. This in-service, ideally, encompasses three days.

The first day should consist of an overview and discussion of the new standards and their relationship with teaching, learning, and classroom instruction. Participants will be able to understand critical and creative thinking and the district standards and activities that enforce and reinforce its development. They will be able to examine their own practice and develop an understanding of teaching theory and methodology. Further, there will be an overview of Socratic questioning and metacognition and how these powerful methods and tools of instruction can be used to facilitate students' thinking and learning.

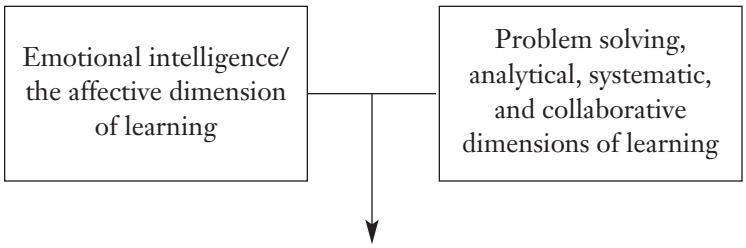
Day 2 will be devoted to designing critical thinking lesson plans. Teachers will involve themselves in creating activities that infuse critical and creative thinking skills and principles as iterated by the new district standards, develop questions for instruction that fuel thinking about subject matter, and plan how instruction will take place, that is, the grouping of students and time management. Teachers will discuss graphic organizers, mind-mapping, and other tactics and tools for teaching critically.

Day 3 will be devoted to the assessment of both critical and creative thinking skills as well as rudimentary skills. The appropriateness of performance assessment, portfolios, and multiple exam approaches to instruction will be examined and discussed within the context of the new standards. Participants will be able to tie effective teaching to effective assessment, completing full circle the critical-creative thinking paradigm.

This chapter is based on the proposed district standards regarding critical and creative thinking and attempts to tie practice to theory. By focusing on the standards and then offering teachers opportunities to plan lessons in accordance with these standards, their practical application and use can be assured. Finally, as teachers collaboratively practice preparing lessons based on the new district standards, they will become more comfortable with both the language of thinking and the actual implementation of critical and creative thinking lesson plans.

Appendix A

Critical and Creative Thinking Lesson Plan Design for
Dade County Public Schools Gifted and AEP



Combined to form activities that yield:

Well-reasoned lesson plans

That ask ourselves and our students:
How will we collaborate and question each other,
and how will teachers assess students and help students learn
the art of self-assessment and self-corrective thinking?

Appendix B: Critical and Creative Thinking Standards as Might be Explained by an Unnamed, Fictional Student

Hi, I'm a sixth-grade student, and I would like to explain the critical thinking standards as they affect my ability to learn and study.

Problem Solving and Decision Making

S-1: Sometimes, I work on the wrong problem because I haven't taken the time to figure out what I am trying to solve. It really helps me to think clearly about issues and problems so I don't waste time looking for solutions to problems that don't exist or problems that I shouldn't be thinking about.

S-2: Many people pursue goals that are unrealistic or unjustifiable. When I'm studying, I want to make sure that I understand exactly what I am trying to accomplish. For example, when we studied Greek history, I had to ask the teacher why people study Greek history or I wouldn't know what was important or unimportant. Some people do things in school, and they don't even know why!

S-3: There is so much information! Especially now with the Internet. My teachers help me think about information critically, which means that I have to think about how I use information

to solve problems or make decisions and how people in the fields I am studying learn to classify, sort, and use information to come to conclusions and solve problems.

S-4: With so much information, when I am studying I have to be able to find the information that I can use and discard the information that is not useful. Some people underline everything in a book with a yellow highlighter, for example. They just don't know what is important and what is not important in what they are trying to study, so they underline everything! Not me. I figure out what is important or relevant and then concentrate on that. That makes life easy!

S-5: I have learned how to question what I am studying really deeply. I try to figure out the questions that scientists, or historians, or artists ask when I am studying those things. By concentrating on the questions that people ask, I find I am more successful in figuring out subjects. This is true in my own life as well. I have learned to ask myself questions a lot and this has really helped me make decisions and solve problems.

S-6: Boy, do we take a lot for granted! I try to figure out what I believe and what I really know so I can examine what I believe. I do this with other people too! This is hard, but when I am studying, I also try to figure out the assumptions or beliefs that are behind the claims that people make. This helps me figure out where they are coming from and how they come to conclusions and make decisions.

S-7: We sure do have to make a lot of decisions and solve a lot of problems just to stay alive! I want to make good decisions and solve problems well because I know that my judgments will affect how I live. So I think about how I do these things before I do them so that I can do them right!

S-8: Sometimes people make decisions without even thinking about what might happen. I try not to do this. I want to think about what might happen so I can prioritize my thinking before I make a decision. And when I am studying, I try to think about the consequences of what I am studying and how people in history or math, for example, look at the consequences of solving a problem one way or another. This helps me understand what I am studying better.

S-9: I learned that the way I see the world is how I interpret things and come to conclusions. I try to learn to interpret the world for myself and make good decisions. By understanding what an "inference" is, I have learned how to extend my learning logically. This really helps me think better in whatever I am doing or studying.

S-10: Some people just say things, and then when you ask them why they think that way, they get mad. I think it is important for people to give reasons and evidence for what they think instead of just saying "because." I look for reasons and evidence in what I am trying to study. For example, we were studying causes of the Civil War, and there were more than two points of view. Before I would accept one or the other, I had to hear the evidence those

with each point of view came up with to support their position. And when I write certain types of persuasive pieces for school, I always try to give evidence and reasons for what I believe. This helps me figure out if I am right or wrong and lets people, especially my teachers, figure out where I am coming from.

Analytical and Evaluative Thinking

S-11: My mom says that sometimes I make statements about people and things by saying "all people," "everybody," or "all of this" or "all of that." I'm like everybody else, I guess. I sometimes make vague and general statements about people and things before I have had time to really think about what I am saying. For example, we were studying about immigration in school and I was thinking that we all immigrated to the U.S. But then the teacher said that some of us did not immigrate but, like slaves, were forced to relocate here. Learning to avoid overgeneralizing about people and learning to avoid being too simple in my thinking has helped me listen and think more critically. It also allows me to present my ideas better in what I am studying because I pay attention to exceptions to the rule, not just the rule itself. Does that make sense?

S-12: We all have to make judgments. My mom makes them every day, and so do I. People who study history make them, and English, and, well, all subjects we study have people who make judgments. I learned that when we make judgments we need to have criteria; that means a set of things we use to judge. My teachers have helped me learn to think about the criteria I use to make judgments and the criteria others use in different subjects to make judgments. My teachers make judgments about my grades and I need to know what criteria they use so I can do my best work!

S-13: Remember when we talked about information? With so much information, I know it is important to find out where the information comes from—its sources. Not all sources are good, and I am learning how to evaluate the credibility of sources of information, and this helps me think better.

S-14: It seems that every subject, in fact, every person has a point of view and argument for one thing or another. Even me! I am learning how to evaluate arguments and beliefs by developing criteria and learning how to judge. This means that I don't believe everything I hear or read, but first, I want to see how the arguments are made and what they might mean.

S-15: People do things, and it is my responsibility to analyze and evaluate what they do. This is true for myself and others, as well as whatever I am studying. We were studying Martin Luther King Jr. and trying to evaluate his actions during the Civil Rights Movement. I wouldn't have been able to understand him as a person if I couldn't understand his actions.

S-16: Sometimes things sound good but are impractical. Know what I mean? Things sound good sometimes, but how do they really work in reality? I try to think about that when I am

studying. This helps me modify my thinking.

S-17: Not only do I have my own interpretations and perspectives, but not everybody agrees with me, and I need to see how other people come to their own perspectives and then evaluate them in light of what I believe. This is hard. I want people to believe what I believe, and sometimes I am not clear or precise when trying to see how others interpret the world. I guess you have to see the world from their point of view, their perspective, don't you?

Systematic Thinking

S-18: I have found that sometimes situations can be the same, even if they look different. They can also be different, even if they look the same. I like to see if I can see analogies in what I am studying and learning. Analogies help me because they are a visual way to use words, and when I find them, I can see how they fit into what I already know.

S-19: I like to see what the different subjects I am studying have to do with each other. So, for example, I like to see how word problems in math help me read better, and how what I study in art might have something to do with history. By learning to see the connections between subjects, I learn and understand more. We were studying math, and I could see how it related to what we were doing in science! Boy, did that help me!

S-20: When I study things, I like to see what they might have in common and what might make them different. When we studied how Mexican-Americans live in the United States, I looked to see what was different or the same between how they live and how African-Americans or Europeans live. By paying attention to what is the same and different in the things I do and study, I can better understand how things relate, what makes them different or the same, and how this understanding might help me. I do this at the store when I look for products my mom wants to buy. Sometimes some products are cheaper than others, but you wouldn't know it if you couldn't compare and contrast, would you?

Collaborative Thinking

S-21: When we think, it really helps if we talk about what we are thinking about. Teachers who ask me what I think and ask other people what they think are good teachers, because they know that talking about things really helps one learn. These teachers get us involved in talking about what we are studying instead of lecturing to us.

S-22: When I get two or more points of view on issues, I try to understand what each point of view means before I develop my own point of view. This is hard, though, because I have to stop thinking about what I believe and enter into all these different points of view to understand what others think. But in the end, this really helps me understand others and myself.

S-23: Developing your own perspective is really important. I want to

make sure that I am thinking for myself and not letting others tell me what to believe or what my perspective or point of view should be.

S-24: Learning to listen to people and what they say is really hard. Sometimes I think I've heard someone when really all I've done is heard what I wanted to hear. Listening critically means that I listen to what people say, not what I want them to say.

S-25: I love to ask questions! But you have to practice. When my teacher asks us to make up questions or ask questions, I really try because I know that the questions I ask will have a lot to do with whether I understand something or whether I get the right answer. I love teachers that give me practice in questioning.

Emotional Intelligence/ Affective Dimension

S-26: Figuring things out for yourself is where it's at! I hate it when people tell me what to think or how to do things. I want to use my brain to investigate and figure things out. Don't tell me how to do it until I have tried it myself!

S-27: It's hard to understand people and what they think. I try, though, and this means that I have to enter into their point of view and see the world the way they see it. Not because I agree with them, but because I want to understand them.

S-28: I don't always know things, and I think it is okay to say, "I don't know." This helps me admit to what I know so that I can learn more! But many people don't do that. They pretend they know things, and I think this stops them from really learning. They need to ask more questions and stop trying to be right all the time.

S-29: Imagining and wondering are things I really like. Sometimes, I just sit around and think about why things are the way they are and how I could make them better. I am really curious about things too, and this helps me ask questions and explore things. It also helps me understand people.

S-30: Some people I know have such low self-esteem. I think that's because they don't believe in themselves. Well, since I have been learning how to think better, I feel a lot more confident in myself. I know I can't do everything I want, but by believing in my ability to think, I think I have really increased my own feelings of self-worth. And this means that I will take risks and try things I might not have tried before!

S-31: Sometimes things aren't so black and white. Sometimes, things are downright confusing. I know when they are confusing it's easy to give up trying to understand them, but I have learned to accept the fact that not everything is clear. So I just try harder to make sense out of the world, what I am studying, my friends, and myself.

S-32: Some of my friends just give up when they can't do things. Not me. I know that trying really hard is how you get to be successful. I try to discipline my thinking and really hang in there when I don't understand something. It usually works!

S-33: Having the courage to say that you don't agree with people, even when they all think they're right and you're wrong, is hard. I try to be courageous and disagree when I don't believe in what people are saying. This is hard. There is so much pressure to just go along. I also like to admit when I make mistakes so I don't make them again. Sometimes I don't, though, and that is when I know I am being afraid and being a coward.

S-34: When I talk with people that don't agree with me, it is easy to get mad at them. But I try to figure out what they are saying and deal with that instead of making put-downs and just making people feel bad. It's easy to put people down; it's harder to understand what they are saying and then deal with that.

S-35: I guess we all do things and say things that we shouldn't. And if I judged other people differently than myself, that wouldn't be fair. I try to judge people's thinking just like I do my own, but I know that's hard. If I didn't, though, nobody would want to work with me or play with me. It's important to treat people and their thinking the way you would want to be treated.

Appendix C: Critical and Creative Thinking Standards Informally Depicted: Dade County, Florida

Following is an informal depiction of the critical and creative thinking strategies, in a format that allows them to be easily explained to parents, teachers, and administrators.

Problem Solving and Decision Making

S-1: Our children begin to learn it is important to be sure you clearly understand the questions you are trying to answer or problems you are trying to solve before you look for answers or solutions. This strategy teaches students to think about how they define problems and issues and how misidentifying problems can result in faulty thinking.

S-2: Our children learn to identify the goals and purpose of what they are studying or pursuing. This strategy teaches students to think critically about what they are attempting to accomplish, their goals and objectives, and the goals and objectives of others.

S-3: Our children begin to think critically about information, its sources, and how to sort, classify, and otherwise form information into patterns from which they might make plausible inferences. This strategy teaches students to think about and use information critically to solve problems.

S-4: Our children begin to think critically about information and its relevance. This strategy teaches students how to distinguish between information that is relevant to what they are pursuing and information that is not relevant.

S-5: Our children begin to think in

terms of the important questions they need to ask to find out more about what they are learning. This strategy teaches students how to formulate deep questions in given subject areas to extend their knowledge.

S-6: Our children begin to think about what they know and what they merely believe. This strategy teaches students how to critically examine and evaluate their own beliefs and the beliefs they confront in their studies.

S-7: Our children begin to think critically about how they make decisions and generate solutions to problems. This strategy teaches students how to make good decisions and arrive at good solutions as well as how to assess their thinking processes.

S-8: Our children begin to see that the solutions and decisions they and others come to have consequences, and they begin to learn to critically explore the consequences of solutions, decisions, and problems in what they are learning. This strategy teaches students how to prioritize their thinking and examine alternatives in light of their implications.

S-9: Our children begin to learn how to critically interpret situations and information and how they come to conclusions and make decisions. This strategy teaches students inferential logic: how to make statements about the unknown based on what is known.

S-10: Our children learn to give reasons and evidence for what they believe and to evaluate the reasons and evidence others offer for what they believe. This strategy teaches students how to evaluate evidence and reasons in what they are learning and in their own lives.

Analytical and Evaluative Thinking Dimension

S-11: Our children begin to see when they are thinking in overgeneralities and when they might be too simplistic in their thinking. This strategy teaches students to recognize when they and others are not being specific in their thinking and gives them an opportunity to refine their thinking.

S-12: Our children begin to understand what criteria are and how they might develop criteria for use in judging situations, themselves, and others. This strategy teaches students how criteria are developed and used.

S-13: Our children begin to develop an understanding that not all information is reliable and that the sources of information are important when evaluating information. This strategy teaches them what sources of information are, how they differ, and how they might affect what they are thinking.

S-14: Our children begin to analyze what they say and what they do and what others say and do. This strategy teaches them what arguments are, how to interpret them, and how to evaluate them.

S-15: Our children begin to learn to evaluate rules, policies, and behavior. This strategy teaches them what is involved in analyzing and how they

can apply analysis to what people do, say, and think.

S-16: Our children begin to learn to distinguish what is ideal from what is actual practice. This strategy enables students to understand that often what might be stated as an ideal way of doing things, approaching problems, or making decisions varies from what actually goes on in reality.

S-17: Our children begin to understand what perspectives are, how they are interpreted, and how beliefs form points of view. This strategy teaches students that they and others have perspectives, what a perspective entails, and how they might evaluate perspectives.

Systematic Thinking Dimension

S-18: Our children begin to see how to apply what they are learning to diverse situations. This strategy teaches students what analogies are and how they might use analogies in thinking, as well as how to transfer what they are learning into new contexts so they might learn more.

S-19: Our children learn how the logic of a discipline is related to that of other disciplines and how they might connect what they are learning in one subject to insights in another. This strategy teaches our students the relationships among the subjects they are learning so they might understand them as systems.

S-20: Our children begin to look at situations, actions, people, and products and note how they might be the same and how they might be different. This strategy teaches students what a similarity is, what a difference is, and how to use similarities and differences to make choices, analyze situations, and develop problem-solving abilities.

Collaborative Thinking Dimension

S-21: Our children begin to understand the power of dialogue as a way of learning and reasoning about diverse perspectives and ideas. This strategy teaches students how to dialogue with others about what they are thinking, whether they agree or disagree with what they are hearing or reading.

S-22: Our children begin to see how entering into points of view not in keeping with their own, reasoning from their premises to their conclusions and then stepping back to see what they believe in light of what others believe, is important for learning to understand people and situations. This strategy teaches students how to evaluate points of view by reasoning within them as well as how to reconcile what they believe with what others believe.

S-23: Our children begin to see how their own thinking and perspectives are developed. This strategy teaches students to think for themselves and learn to develop their own points of view regarding issues, people, and situations.

S-24: Our children begin to see what it means to listen critically and actively as opposed to selectively and passively. This strategy teaches them what active listening would entail, how to sum up what people say for the

sake of understanding, and how to listen to points of view to understand their logic.

S-25: Our children begin to see the power of questioning as a form of learning about themselves, what they are studying, and others. This strategy teaches students how to question deeply, to go beyond questions that simply call for information and learn to question assumptions, language, points of view, and whatever they are learning.

Emotional Intelligence/ Affective Thinking Dimension

S-26: Our children begin to see the power of investigation and how to figure things out for themselves. This strategy teaches students to investigate independently what they are learning and not to depend on others for the answers to questions or life's problems.

S-27: Our children begin to see the importance of understanding others, even if they do not agree with them. This strategy teaches students to enter into diverse points of view with the object of understanding them.

S-28: Our children begin to learn that it is okay to say "I don't know." This strategy teaches students how to admit to their mistakes, realize when they don't understand something, and learn to replace self-righteousness with self-questioning.

S-29: Our children begin to see the power of curiosity and how curiosity is used to find answers to complex questions, to seek to understand, and to imagine how problems can be solved or decisions can be made. This strategy teaches students the power of imaginative and curious thinking and helps them capture what it means to "wonder" about life and what they are learning.

S-30: Our children begin to see the power of reasoning, and as they do, they develop self-esteem and a belief that they can solve life's problems through thinking. This strategy helps students develop self-confidence in their ability to think.

S-31: Our children begin to see that often there are no black-and-white answers for situations and issues. This strategy helps students understand that life can be unclear, that what they are studying or attempting to understand may not be transparent, and that this is okay.

S-32: Our children begin to learn to arrest their impulsivity and take their time when reasoning. This strategy teaches students that there are no quick-fix solutions to complex problems and lets them know that disciplined thinking and trying as hard as they can will help them become successful.

S-33: Our children begin to see what it means to be intellectually courageous: that it is okay to admit you're wrong, to discover you have made a mistake, or to disagree with others rather than simply going along with them. This strategy teaches students that being courageous in their thinking might make them different at times, but that this is okay as long as they can defend what they believe in light of what others believe.

S-34: Our children begin to see that put-downs have no place in thinking—that you don't have to be mean or uncivil to someone just because you do not agree with him. This strategy helps students develop an understanding of how to engage in civil dialogue when they don't agree with someone or something.

S-35: Our children begin to see that it is necessary to evaluate others and their thinking the same way that they evaluate themselves and their thinking. This strategy teaches students that the rules they apply to others should be rules they are willing to accept in their own lives.

FROM FUNCTIONALISM TO NEOFUNCTIONALISM AND NEOLIBERALISM

Developing a Dialectical Understanding of the Standards Debate through Historical Awareness

Danny Weil

The politics of the current standards debate, with its recent emergence, challenges, and promises, must be understood within the sociohistorical context that spawned it. Historically, we can find a critical rethinking and reexamination of intelligence and educational standards in a multitude of educational and psychological theoretical pursuits throughout the twentieth century. These include the social functionalism of the factory school, the Dewey progressivism of the early 1900s, critical pedagogy—notably in the persona of Paulo Freire—neofunctionalism, insights into critical thinking, poststructural psychoanalysis, and Vygotskian understandings of cognition and theories.

Yet unfortunately, as educational author and reformer Herbert Kliebard has lamented, school change movements generally fail to understand the history of educational reform in the United States. According to Kliebard, "New breakthroughs are solemnly proclaimed when in fact they represent minor modifications of early proposals, and, conversely, anachronistic dogmas and doctrines maintain a currency and uncritical acceptance far beyond their present merit" (Kliebard, 1970, p. 259). Kliebard calls upon educators to examine new and popular school reform proposals from a historical perspective. For our purposes, this examination will specifically focus on the historical development of education as these developments affect the debate regarding educational standards.

Defining Educational Purpose: Why Do We Teach?

There are many perspectives on the role or purpose of schools in society—

what they should teach and how this teaching and learning should be assessed. The aspiration of this chapter is not to give a prolonged or detailed characterization of the myriad frames of reference on the subject. However, characterizing at least some of these points of view in terms of how the debate is currently constructed is essential to a truly meaningful dialogue about assessment and standards.

Currently, popular political debates regarding literacy, standards, and assessment continue to concentrate on anecdotal evidence and attention-seeking headlines that really do little or nothing to help teachers, their students, or their students' parents move toward a genuine curriculum of thinking and learning. Furthermore, many parents and community members continue to labor under old paradigms of literacy, intelligence, and assessment. These paradigms are fueled and nurtured by an ignorant and demagogic media that continues to separate assessment from learning while seeking to frame the complex issue of education in either back-to-basics or outcome-based education—for both public schools and private schools.

American Industrialism and the Twentieth-Century Development of the Factory School

The end of the Civil War and the years immediately after brought unbridled economic growth and development to America. New scientific and technological developments fueled the expansion of markets and configured a deeply changing nation. More and more Americans began to find residence in large urban centers, leading to the increased development and expansion of cities. Coupled with immigration, the increased urbanization and industrialization of the late nineteenth century and early twentieth century lent rapid growth to U.S. industry and a new concentration of economic power in the hands of emerging industrialists and corporations.

With immigration changing the political and cultural landscape of the United States in the late 1800s, not only were larger urban centers growing, but for the first time they were growing with people other than white Anglos. Along with this rapid growth came the need to assimilate these newly arriving immigrants into the melting pot of "mainstream" American life. An obvious and logical forum for this was the public school. Most work in urban centers during this time was factory work, so the emergence of the American public school began to resemble the factory. Bells were sounded to signal the beginning of classes, desks were bolted to the floor in regimented rows, and strict discipline and a rigidly imposed social order prevailed (Kincheloe, Slattery, and Steinberg, 2000, pp. 151–152).

The costs of building these new factory type schools were justified in the minds of the public by appeals to the "national interest." The argument was simple. Immigrant children were in the United States because the nation needed the labor of their parents

to become rich and prosperous. This market rationale argued that educating these "immigrant children" would bring a positive return on investment, namely, a more productive workforce and a more competitive nation. One leading educational functionalist at the time, Ellwood Cubberley, wrote: "Our schools are, in a sense, factories in which the raw products (children) [his parentheses] are to be shaped and fashioned into products to meet the demands of life. The specifications for manufacturing come from the demands of twentieth century civilization, and it is the business of the school to build its pupils according to the specifications laid down" (Cubberley, 1916, p. 338).

If the public school represented the factory, the students themselves were little more than the raw material or objects of production; graduates were seen as the products to be fashioned by the public school system. In the emerging modern public schools of the United States, children, especially immigrant children, were to be trained to follow directions and routines, learn proper English, and develop rudimentary "basic skills," such as reading, mathematical, and writing skills. Schooling, in a sense, developed as a center for socialization and indoctrination as America entered the industrial age.

Post–Civil War America also saw market interests and business concerns rapidly permeate public schools. Not only was the curriculum of public schools immersed in the growth, regulation, and maintenance of urbanization and the rise of industrialization and factory existence, but these elements of modernization were also implicated in the development of a modernist conception of knowledge and intelligence.

Between 1880 and 1920, as the factory-style public school system emerged, so too did the philosophy that specified that the reality and life of both students and teachers needs to be scientifically oriented and regulated (Kincheloe et al., 2000, p. 153). This period saw the development of standardized tests, with an emphasis on sorting and categorizing mechanisms that would place students on specific curricular tracks. Modern rationalism and specific, delineated ways of knowing emerged as the measure of intelligence, and the new standardized tests, such as the Stanford-Binet IQ test, were designed to calibrate and classify students based on emerging modernist notions of intellectual behavior. These instruments of assessment also gave specific direction to teachers, identifying specifically what they should be doing in their classrooms.

The IQ test had its origins in 1904 France, where Alfred Binet attempted to study and recommend procedures for educating mentally retarded children (Binet, 1905). The test itself was forged in the fires of actual and existent material conditions found in early-twentieth-century capitalist France and reflected the values, interests, needs, and focuses not only of Binet himself but of his cultural and socioeconomic milieu.

In 1905, Binet proposed a thirty-

item scale of intelligence, a set of norms so to speak, to measure what contributes to classroom achievement. After Binet's death in 1911, his normative scale was revised, producing the Stanford-Binet IQ test. The test has been revised many times since its inception and is still generally considered the standard measure of intelligence in Western societies.

Formalist reason, Cartesian-Newtonian science, and the techno-rationalist necessities of the emerging industrial revolution, coupled with the need to develop a psychology or managerial science of the mind, all influenced and contributed to the theoretical development and practical implementation of the normative scales found in the IQ test. Similar considerations of historical reality would be necessary to understand any assessment, not simply the IQ test, as their development, use, and analysis is always historically situated and must be understood against the specific socioeconomic conditions from which they arose. Examining these conditions allows us to see why and how intelligence was defined and how this definition affects our organization of educational occasions for students and productive opportunities for teachers. Such analysis also affords us an insight into the role of standards and assessment.

The Development of Functionalist Theory

The burgeoning industrial capitalism of the late 1800s and the early 1900s needed schooling to preserve, extend, and legitimize the economic relations of production and the arrival of new forms of unprecedented consumption. Consequently, during this period we see the rise and development of an educational philosophy called "social functionalism": education organized, implemented, and controlled to meet the functional needs of business and economic interests. These needs could be equated with what was necessary in the workplace and then taught and assessed. The assessment of students would be metaphorically similar to assuring quality control, much like the quality control assurance of products.

Directly associated with the social functionalism of schools was the excessive preoccupation with the values of productivity, efficiency, and thrift (Goodman, 1995, p. 6). With the development of the assembly line, specifically the contributions of Frederick Taylor to the new science of business management, efficiency, productivity, and speed began to capture the imagination of the American public. Factory work relied on workers who could follow instructions, take simple directions, and work swiftly to increase production with maximum efficiency.

Industrial production proceeded at levels heretofore unheard of and the power and ideology of industrialized production became the national ideology during this period. It is hard not to see the parallel between this historical period and today. Although contemporary production has shifted to technological and service work as the

United States enters into the "third wave," or postindustrialism, infatuation with technological, cybernetic tycoons and the ideology of efficiency and "lean production" still dominate U.S. culture. School-to-work programs are important aspects of many public schools and have arisen, partly, in response to the demands of the new social functionalism, which is designed to prepare students for the needs of changing production in the twenty-first century.

The social functionalism prevalent in the philosophy of early-twentieth-century educational discourse along with a preoccupation for speed and efficiency was described by leading reformer Franklin Bobbitt, one of the key social functionalists for the industrial-age school restructuring movement. In 1924, Bobbitt claimed:

> It is helpful to begin with the simple assumption to be accepted literally, that education is to prepare men and women for the activities of adult life; and that nothing should be included which does not serve this purpose. . . . The first task is to discover the activities, which ought to make up the lives of men and women; and along with these, the abilities and personal qualities necessary for proper performance. These are educational objectives. When we know what men and women ought to do then we shall have before us the things for which they should be trained. (Bobbitt, 1912, pp. 259–271)

The adult activities to which Bobbitt referred were tied to economic necessities that resulted from changes in the relations of production and consumption that were exploding at the time.

Further, not only did the industrial age have an impact on the purposes and goals of education, but the social functionalism of the time also affected staffing patterns, curricular construction, and instructional design (Goodman, 1995, p. 6). What R.E. Callahan referred to as the "cult" of efficiency and productivity had an effect on every aspect of schooling (Callahan, 1962). The modern science of business management, called Taylorism after its creator, was rapidly being implemented in school production as well. Educational goals were restructured and redefined as increasing productivity in schools—in essence, increasing the quantity of what students learn. So the factory school began to predetermine outcomes and then plan backwards to restructure education so that these outcomes could be reached. As early as 1913, Bobbitt declared:

> The third grade teacher should bring her pupils up to an average of 26 correct (addition) combinations per minute. The fourth grade teacher has the task, during the year that the same pupils are under her care, of increasing their addition speed from an average of 26 combinations per minute to an average of 34 combinations per minute. If she does not bring them up to the standard 34, she has failed to perform her duty in proportion to the deficit; and there is no responsibility beyond the standard. (Bobbitt, 1913, pp. 21–22)

Specifically stated learning objectives that could be measured, controlled, and regulated became the language of educational discourse. These objectives were tied to what was needed or what was functional within the emerging industrial society. With an "objectives first" approach to education and schooling, curriculum underwent unique changes. Not only were educators concerned with efficiency and production, but they also believed strongly in the practice of differentiated staffing (Goodman, 1995, p. 10). Knowledge acquisition was fragmented into disciplines and subjects, much like the work on assembly lines in industrial factories. The most important goal for the social functionalists and efficiency educators of the day was to reduce the number of educational workers by maximizing their instructional efficiency. Thus, not much different from what Taylor advocated in the factory, no one person was to ever be responsible for too many different tasks. Scientism and the instrumentalist approaches of functionalist educators divided teaching up into distinct and differentiated tasks staffed by different individuals.

The reconfiguration of the school day and the redesign of curriculum during the industrial revolution in the early part of the twentieth century helped shape what we know now as the large, urban public school and its accompanying public school curriculum. As we shall see, Bobbitt's appeal to link school to work was not much different from positions taken by certain educational policy makers and business leaders today. And in the same way that Taylorism and the new science of business administration influenced the conception and organization of schooling during the early twentieth century, contemporary changes in production, consumption, and business management theory continue to exert a tremendous influence on the standards debate today.

Progressive Educational Responses to the Factory School

Although the factory style of education during the late nineteenth century and early twentieth century imposed a functionalist, industrial education on all American citizens—African American, Native American, newly arriving immigrants, and Anglos—and even though the prevailing wisdom at the time argued for impersonal factory schools grounded on modernist approaches to curriculum and teaching, many educators protested. They not only saw the factory school as an impersonal social arrangement, but they also saw industrial society and the factory itself as an impediment to human development. Margaret Haley, union organizer and teacher-activist at the time, expressed the following observation: "Two ideals are struggling for supremacy in American life today; one the industrial ideal, dominating through the supremacy of commercialism, which subordinates the worker to the product and the machine; the other ideal of

democracy, the ideal of educators, which places humanity above all machines, and demands that all activity shall be the expression of life" (Tyack, 1974, p. 257).

Educators like Haley opposed what they viewed as the rigid and impersonal social order imposed by factory life. They felt that the rise of corporations and corporate power were far more menacing to American life than the role of government (Kincheloe et al., 2000, p. 159). These educational progressives wanted schooling to create educational experiences that expanded children's involvement in citizenship activities and civic responsibility, and they argued that public education must construct its mission and purpose to this end.

Besides W.E.B. DuBois and Haley, one of the most prominent progressive educators and philosophers during the early part of the twentieth century was John Dewey. Like Haley, Dewey argued against the reduction of schooling to mere functionalism—boring and repetitive tasks designed to prepare students for future work. Dewey's argument against social functionalism maintained that the role and purpose of education should be to prepare students to live fully in the present, not simply to prepare them for the future. Like Boyd Bode, another progressive educator of the time, Dewey argued that for schooling to become merely a preparatory institution for future market needs was dehumanizing and denied children the opportunity to find relevance and meaning in their lives. Dewey commented: "The ideal of using the present simply to get ready for the future contradicts itself. It omits, and even shuts out, the very conditions by which a person can be prepared for his future. We always live at the time we live and not at some other time, and only by extracting at each present time the full meaning of each present experience are we prepared for doing the same thing in the future. This is the only preparation, which in the long run amounts to anything" (Dewey, 1938, p. 49).

Dewey's description of the purpose and objective of education was very clear:

> The problem of education in its relation to the direction of social change is all one with the problem of finding out what democracy means in the total range of concrete applications; domestic, international, religious, cultural, economic, *and* political. . . . The trouble . . . is that we have taken democracy for granted; we have thought and acted as if our forefathers had founded it once and for all. We have forgotten that it has to be enacted anew with every generation, in every year, in every day, in the living relations of person to person, in all social forms and institutions. Forgetting this . . . [w]e have been negligent in creating a school that should be the constant nurse of democracy. (Dewey, 1940, pp. 357–358)

Dewey was convinced that democracy is not a "thing" that is found, but an idea that is perpetually created. His

notion of education rested upon a citizenry that wishes to develop the ability to visualize the type of society they want to live in. Dewey and his progressive contemporaries continued to argue against social functionalism and for a different conception of schooling and educational purpose. They looked to assessment to measure *how* students think, not *what* they think.

Although the debate between progressive educators like Dewey, Boyde, DuBois, and Haley on the one hand and Bobbitt and Cubberley on the other was intense and controversial, in the end it was functionalism that triumphed over progressivism. There are many reasons for the triumph of social functionalism in the U.S. educational debates in the early twentieth century, not the least being the cost of subsidizing and operating public education as an enterprise. Progressive educational ideas would have required new structural configurations of school, an emphasis on quality education as opposed to educating quantities of students, and the introduction of new assessments and more creative and innovative curricula. Social functionalist approaches to education, on the other hand, were less expensive precisely because within the factory style school, students could be "produced" on an educational assembly line in much larger numbers than with the craftsmanship required by progressive education (Wirt & Kirst, 1992). Similarly, with standardized tests, quality control could be rigidly fixed without variation.

Perhaps even more importantly, the progressive agenda for education was highly controversial and threatened the elite agenda of control and power that was taking shape in industrialized, modernist America. With the emergence of union activism and socialist movements, the creation of the former Soviet Union in 1917, and the so-called Red scare and the Sacco and Vanzetti trial of the 1920s, the last thing that U.S. policy makers in education, business, or politics wanted was an education for social liberation and individual realization. Business interests, policy makers, and politicians were worried that opening up education to such things as personal awareness, democracy, social exploration, and critical analysis might compel the public to examine the social, cultural, and economic relations that governed their lives. Such education, it was feared, could pose a considerable threat to power, authority, and control and was of little interest to the captains of a market society undergoing a huge economic expansion, technological revolution, and rising industrialization. Their notion of education for social function and control was far more pragmatic, designed to support an emerging industrial world where commercialism relied on disciplined workers and responsible consumers. Socialization and indoctrination were to be the norm for schooling, and tests and measurement instruments were developed to assist in ensuring that this indoctrination and socialization became the subject of education.

As a result of this climate, Dewey's progressive ideas had little support

from administrators and other educational policy makers. And so, although the debates between progressives and social functionalists continued to dominate educational discourse during the early part of the twentieth century, schools were increasingly organized based on factory models and their curriculums wedded to organizational and intellectual endeavors that promoted education as preparation for work.

The argument between Booker T. Washington and DuBois and between the educational functionalists and educational progressives is as heated today as it was at the beginning of the twentieth century—perhaps even more so. The issues that confronted educators in the early twentieth century—curriculum construction, access to quality education, the education of minority children and newly arriving immigrants, race, gender equity, social class, market capitalism, technological innovation, work, efficiency and production, and the purpose and goals of education—represent challenges that are similar to but different from those of today.

Post–World War II Policy and the Politics of Public Education

After World War II, public education in the United States experienced some of its most dramatic challenges and changes. In the context of the Cold War, McCarthyism, economic prosperity, suburban development, technological innovations in consumer goods, the advent of television and advertising, the growth of the civil rights movement, and the rapid development of scientific innovation and discovery, controversial and rancorous debates arose over the role of education and universal access to school facilities.

Perhaps the most important event to mark post–World War II social, racial, and educational politics was the 1954 Supreme Court decision on *Brown vs. Board of Education*. Up until this time, what was referred to as the separate-but-equal doctrine, set forth as law in the famous *Plessy vs. Ferguson* case, governed relations between Blacks and Whites. The *Brown* decision swept *Plessy* away forever, declaring the separate-but-equal doctrine "inherently unequal" (*Brown v. Board of Education*. 347 U.S. 483, 74 Sup. Ct. 686. 1954). Further clarifying its position on the matter, the Court once again legally intervened in a follow-up decision by stating that public school systems that had been segregated up until that time now had to become desegregated (*Brown vs. Board II*. 349 U.S. 294, 75 Sup. Ct. 753).

The court decision also brought up the issue of "states' rights" versus federal control—an issue older than the Civil War. Many conservative southerners felt that decisions regarding local issues should be left to the bodies of state and local government, not mandated by the federal government. At the time, many conservatives saw the Supreme Court decision in *Brown vs. Board of Education* as a federal invasion of states' rights.

Another important post–World War II event that was to have a mas-

sive impact on the nation's school systems and continued influence on public debate over education was the advance of the Soviet Union into space with the 1957 launching of the *Sputnik*. American leaders reacted to the Soviet success with shock and disbelief, arguing that the Soviet Union now threatened U.S. sovereignty. Business leaders, military leaders, and educational policy makers scrambled to assign the blame to American public schools. Attacks on public education intensified, partly because it was a convenient target, easy to blame not only for the nation's lack of global and economic competitiveness but also for the new permissiveness, apparent in everything from rock and roll music to new conventions regarding sexuality and conformity (Kincheloe et al., 2000, p. 164).

With the launching of *Sputnik* and the perceived Soviet superiority in matters of technology and military development, the federal government began to become more involved in the legal and economic realities of public education. The National Defense and Education Act was passed in the late 1950s, focusing the educational emphasis primarily on science, mathematics, foreign language, guidance, career counseling, and vocational endeavors. The federal government also appropriated and spent massive sums for the construction of schools and buildings.

Worried that the Soviet Union was achieving technological and military dominance over the United States, educational policy makers saw themselves as the custodians of the public educational system. Education was now to be perceived as a vehicle for gaining skills necessary for the promotion of the "national interest," and it was directly linked to defeating communism at any cost. For the first time in its history, the U.S. government declared education a national preoccupation and a national interest. The public schools were still organized as large factories, but now they were factories that were more preoccupied with the regulation of the curriculum. In this atmosphere of political fear and educational purpose tied to military and technological preparedness, the voices of progressive education were muted and silenced.

Today's efforts to promote an educational marketplace through privatized school choice can be traced directly to the work of conservative economist Milton Friedman in 1955. Unlike those proponents of public education who sought to restructure and reform factory-style public schools, Friedman proposed that every family be given a federal "voucher" for each child attending any school. Under the proposed plan, the vouchers, all of equal worth, would be funded by public monies and would allow families to choose any school that met minimal governmental oversight. Parents could also add their own resources to the value of the voucher, and schools would operate like businesses, setting their own tuition and admission requirements (Friedman, 1955).

Friedman's proposal failed to attract public interest at the time, and the

prevailing ideology argued that a simple retooling of the curriculum and the addition of advanced placement classes would remedy any problems associated with public education. Further, with the *Brown* decision, any primacy of states' rights over federal law in the form of state-imposed desegregation was now illegal. Although at the time Friedman voiced his support for integration, by asserting the primacy of freedom over equality, his proposal threatened to further segregation, directly or indirectly (Re-Thinking Schools, 1996). However, even though it was rejected by the public at the time, the Friedman proposal would return with a vengeance in the late 1980s and early 1990s.

The importance of the post–World War II era in education is significant to any understanding of the current debates regarding public schools, specifically charter schools. Issues regarding states' rights, race, market initiatives, and "failing American schools," so predominant in the educational discourse of the 1950s, now appear again in the topics and questions that the educational community faces today.

The Decade of the 1960s and the Politics of Standards

Post–World War II America experienced conformity in the 1950s, but the 1960s were anything but conventional. Changes in educational policy and the debate over educational purpose and access during the 1960s must be situated and understood within the context of political activism and resistance that characterized the decade. Anti-war demonstrations, the Civil Rights movement, boycotts, the emergence of the gay movement in 1969, multiculturalism, feminism, assassinations of political leaders, and the multiple marches on Washington all worked directly to change the conception of American identity and American consciousness. And the decade of the 1960s was to have a dramatic and far-reaching impact on educational issues and schooling as well.

Probably the most important political event of the 1960s was the passage of the Civil Rights Act of 1964. Not only did passage of the act guarantee African Americans access to all public facilities, but it empowered the U.S. government to ensure compliance with the act by bringing discrimination suits against any institution or local governmental body charged with discriminating. According to estimates, almost 99 percent of Black students in the eleven southern states remained in segregated schools in the late 1960s (Orfield, 1969, p. 45). In accordance with the Civil Rights Act, schools that segregated were now to be stripped of any federal aid.

Another consequential legislative enactment in the 1960s was the passage of the Elementary and Secondary Act of 1965. Signed into law by President Johnson as part of the War on Poverty, the act would provide another nail in the coffin for segregated schools by bringing even more African Americans into the mainstream of public schooling.

The fight over desegregation was often a violent one, and the Supreme Court once again was forced to act with its decision in *Green vs. City School Board* (391 U.S. 430. 1968). The issue involved so-called freedom-of-choice plans that had been adopted by some in the South as a way of avoiding desegregation. The *Green* decision outlawed these schemes as barriers to desegregation, further ensuring that schools would be desegregated in accordance with the *Brown* decision.

In the late 1950s and the 1960s the U.S. public school system became increasingly desegregated, and immense changes in public education occurred during this time in the South. For the first time, African Americans were allowed to attend public schools with Whites, albeit at times under protection of the National Guard. Universal access to education was won through the struggles for equality and justice on behalf of African Americans, members of labor movements, students, feminists, and other groups.

The 1960s also witnessed intense debates over school curriculum. The roots of what is currently termed the "multicultural" movement in education finds its origins in the radical challenges put forth by progressive educational forces in the 1960s and early 1970s. The movement toward a multicultural curriculum originated largely among the nation's culturally subjugated and marginalized peoples, such as African Americans, Mexican Americans, Native Americans, and women. Proponents of multiculturalism criticized traditional schools for their admission practices vis-à-vis people of color; they condemned the academic establishment for its subservience to business interests; they reprimanded schooling for its racist, sexist, and culturally biased curriculum; they chastised hiring practices for women and minorities; they exposed the pernicious practice of tracking; they lambasted the curriculum for its claim of neutrality; and they labored assiduously to ensure the establishment of beneficial entitlement programs such as bilingual education and Title VII–mandated educational programs.

Multiculturalism argued that a lack of understanding and acceptance of racial differences was a recognized problem for teachers and students alike (Stent, Hazard & Rivlin, 1973, p. 73). Among the voices of the multicultural educational community there were calls to directly address issues of prejudice and discrimination in classroom curriculum. Multicultural theorists posited that schools should not seek to melt away cultural differences within our pluralistic society but instead should celebrate these differences in an atmosphere of educational inquiry. Therefore, they pointed out, schools should be oriented toward the cultural enrichment of all students though programs aimed at the preservation and extension of cultural pluralism. They put forth the idea that cultural diversity is a valuable resource that should be recognized, preserved, and extended, and they argued that only by directly confronting racism and prejudice can society ensure an

understanding and appreciation for human dignity (Weil, 1998).

The movements and educational struggles that took place during the 1960s and early 1970s produced a new language and vocabulary of educational critique. Coupled with the critiques of schooling listed above was a call for the abolition of inequality in school financing and for a commitment to federal funding for educational programs. The struggle for universal access, for changes in the curriculum, and for the passage of social legislation in the 1960s profoundly changed public education in the United States. These movements lent new currency to the progressive calls for a democratic educational purpose that had started with Dewey. Old progressive arguments and positions regarding the role and purposes of education that had been silenced by the Cold War of the 1950s began to reemerge in the national debate. American identity itself was under reconsideration, as diversity and an understanding of difference became intense objects of controversy and debate. This was to be especially true in universities, many of which were agitated sites of militancy and resistance at the time.

Neoliberalism, Conservatism, the 1980s, and the Politics of Standards

When President Jimmy Carter received the endorsement of the National Education Association (NEA) in his bid for presidency in 1976, it was the first time that the nation's largest teachers' union had endorsed a candidate for president of the United States. Carter owed this backing to his promise to establish a cabinet-level Department of Education. The NEA had lobbied for such a national cabinet position since World War I. Finally, with the union endorsement, Carter raised education to the cabinet level in 1980.

While Carter proved to be more conservative than many observers had expected from an "education president," there is little doubt that it was Ronald Reagan, Carter's successor, who left a lasting conservative ideological stamp on American public education. Considering the Department of Education an unnecessary expense and perceiving it as an imposition to states' rights, Reagan sought to abolish the department directly after his 1980 election. Invoking free market enterprise and the logic of market forces as the panacea for American social and economic troubles, Reagan and his administration embarked on restructuring social policy, including education, to reflect the primacy of market solutions to public problems (Lugg, 1996).

Calls for the dissolution of the Department of Education met with severe resistance that made it impossible for conservatives to abolish the department. As a result, the Reagan administration sought to reconstitute the Department of Education, transforming it into a vocal mouthpiece for controversial policies like organized prayer, public and private school choice, and

school vouchers. As a result, department representatives leveled blistering attacks against public education, teachers' unions, and curriculum.

It was in 1983 that the best-publicized educational achievement of the Reagan administration was issued in the form of a book-length report entitled *A Nation at Risk*. Issued by the National Commission on Excellence in Education (NCEE), the report provided a scathing critique of the public education system, arguing that American education had become a bastion of mediocrity. The report concluded that the state of American education was actually threatening the nation's future economic growth. With its dire predictions and warnings, *A Nation at Risk* once again focused public attention on the issue of education as an economic issue. As educational urgency took on market proportions, progressive educational concerns were not considered a priority (NCEE, 1983).

After the *Nation at Risk* study was released in 1983, scores of magazines and news reports jumped on the bandwagon, concentrating on the supposed "failure of public education." That year, *Newsweek* rushed to press a scathing story that asked if the schools "could be saved." The report concluded that progress from generation to generation was being "shattered" by the mediocre condition of American schools (Saving Our Schools, 1983).

Responsibility for the recessionary economic crisis that plagued America during the early 1980s was placed squarely on the back of the public educational system. Public education was now seen as an inhibitor to economic growth (Shor, 1986, p. 108). Like the *Sputnik* scare decades prior, *A Nation at Risk* was used to sound a wake-up call to educators and policy makers. This time, instead of Soviet superiority in outer space, it was the influx of quality goods from Japan that was thought to be the threat to national security. The ability of the United States to compete globally, it was argued, was jeopardized by a public educational system that simply did not work.

To build the case for the mediocrity of the school system, the NCEE had turned to an analysis of the Scholastic Aptitude Test (SAT) scores. The NCEE pointed to the long decline in SAT scores that had occurred from 1963 to 1980. It also compared U.S. education to other Western school systems, pointing out areas where the U.S. system did not measure up to its counterparts. Playing off a sense of political patriotism and economic nationalism, the *Nation at Risk* report pointed out that the United States would continue to be a preeminent country only so long as material benefits and great ideas remained part of the country's legacy. The report argued that the nation's national security was in jeopardy as long as the public schools threatened this legacy (NCEE, 1983).

In June of 1983, another report, entitled *Action for Excellence: A Comprehensive Plan to Improve Our Nation's Schools*, was published by the state

governors' group, called the Education Commission of the States (ECS). Often referred to as the "Hunt Report" after Governor James B. Hunt of North Carolina, the report continued to echo the notion that American schools were failing (ECS, 1983, pp. v, 3).

The alarms did not stop with the Hunt Report. The next major statement regarding the state of public education was issued in September of 1983 with the National Science Board (NSB) report. In its dramatic study entitled *Educating Americans for the Twenty-First Century*, the NSB document warned that:

> The nation that dramatically and boldly led the world into the age of technology is failing to provide its own children with the intellectual tools needed for the 21st century. . . . Already the quality of our manufactured products, the viability of our trade, our leadership in research and development, our standard of living, are strongly challenged. Our children could be stragglers in a world of technology. We must not let this happen; America must not become an industrial dinosaur. We must not provide our children a 1960's education for the 21st century world. (NSB, 1983)

The exigencies of education were once again being linked to the nation's economic readiness, or lack of it. The 1980s built the case for a super functionalism. Instead of the rudimentary skills required by the social functionalism of industrialization, the new information and technological revolution in American society needed a different type of worker with different kinds of skills. Preparing students for the twenty-first century technological and cybernetic revolution, or the "third wave," became the mantra of reports like *A Nation at Risk*. Calls to bring education "back to basics" saw this as the antidote for the economic crisis, in a move similar to the "objectives first" clamor in the early 1900s. The NSB report defined the new cognitive-economic relationship between school and work in the following way:

> Alarming numbers of young Americans are ill equipped to work in, to contribute to, profit from and enjoy our increasingly technological society. Far too many emerge from the nation's elementary and secondary schools with an inadequate grounding in mathematics, science, and technology. This situation must not continue. . . . We must return to the basics, but the "basics" of the 21st century are not only reading, writing, and arithmetic. They include communication, and higher problem-solving skills, and scientific and technological literacy. (NSB, 1983)

Under this superfunctionalism, the new basics were now defined as "ultra-basics"—such as science, computers, higher-order reasoning, social studies, foreign language, and academic English. Schools were now to place these basics at the core of their curricula. While the "second wave" of educational restructuring had been estab-

lished for the industrial age of the early 1900s, the third-wave restructuring movement of the 1980s would focus on preparing students for the information/technology age—an era of neoliberalism—the economic, historical, and philosophical posture that advocates a market primacy and domination.

Educator Larry Hutchins expressed the third-wave functionalist restructuring argument like this: "The old design worked relatively well for the society it served; it brought schooling to millions of immigrants [who] . . . were needed to stoke the engines of the industrial society. Today's society no longer requires such a work force. We need people who can think and solve problems using information and technology" (Hutchins, 1990, p. 12).

Neoliberal goals like maintaining the American empire, creating better goods and services, dominating world markets, and creating the new workforce of the future were all interwoven into the calls for a new and radical restructuring of schools. Any discussion about what type of society Americans wished to create or about the relationship between school, democracy, culture, and the emerging cybernetic society was conspicuously absent from the concerns of third-wave restructionists. Furthermore, as with the efficiency production arguments of the industrial age, teachers were encouraged to develop curricular goals based on step-by-step procedures and time schedules as their labor became more disenfranchised from creativity and they themselves became significantly de-skilled (Goodman, 1995, p. 10).

During the 1980s, the educational reform movement increasingly found expression in a language of business efficiency, productivity, choice, and the application of management theories to the educational enterprise. More than at any other time, test scores became the products of schools. Students became the workers who create this product using instructional programs given to them by the "educational maintenance organization." Teachers were increasingly transformed into shop managers who preside over students' production through classroom management techniques that operate as technologies of power; school principals became the plant managers who manage the school personnel to ensure that the product corresponds to the standards; specialists, such as social workers or school counselors, were employed to handle students' emotional needs; and altercations became defined as educational disputes that arise between the school and parents (Goodman, 1995, p. 11). Transformed into classroom managers overseeing student-workers, teachers became further disengaged from the nature of teaching; conception was further divorced from execution as teacher-workers were galvanized to follow prescribed "teaching recipes" in the form of preformulated lesson plans. With the rise of prepackaged instructional materials, intellectual engagement with the curriculum had now become a luxury for many teachers, as they were transformed into mere technicians,

quality control agents, clerks, and managers of learning.

Third-Wave Restructuring at the End of the Second Millennium: School Choice and the Politics of the Charter Movement

The development of the new educational discourse of business productivity and efficiency in the 1980s set the stage for our current educational controversies at the beginning of the third millennium. As the 1980s came to an end, unregulated capitalist markets monopolized mainstream thinking. Determined that neoliberal market solutions were the remedy for all of society's ills, economists and pundits warned the nation to concentrate on neoliberal solutions to social and individual problems in order to compete vigorously in the global arena. Unregulated markets, unrestricted globalization, and privatization were seen as an advantage for all those interested in the notion of American progress.

With the fall of the Soviet Union in 1991, this vision of America, one of unregulated markets and capitalist hegemony, became the primary vision for education as well. Not only were public schools continually perceived and cast as failing and mediocre institutions, but now people also began to suggest that these public schools would better serve American citizens if they were forced to compete with schools that were privatized. They argued that schools need to develop students the way that corporations develop products. School choice proponents now claimed that the government should provide vouchers to pay for the schooling of students' or their parents' choice. The idea, claimed voucher adherents, was that private and public schools could then compete for the most academically able students. The schools that failed to prepare students for the emerging information/technology market in the most efficient manner would succumb to a "natural selection" (Kincheloe et al., 2000, p. 171). Friedman's proposal for privatized education was now a fait acompli.

Economic Conservatives, Neoliberalism, and the Neofunctionalist Argument

The educational foundations of American society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people. . . . We have, in effect, been committing an act of unthinking, unilateral educational disarmament.

—A Nation at Risk

The prevailing point of view today, one that is embraced by both economic and neofunctionalist assertions and that resonates throughout the media, seems to be that school is merely a training ground for the necessities of market civilization—that is, preparation in school has been transformed into little more than preparation for work. With the dramatic changes in the nature of and relations among the forces of postmodern capitalist production, contemporary neofunctionalists have now refashioned and rely on

neoformalist, cognitive notions of intelligence that though formal in nature, seek to expand the parameters of formal psychological theories to include such things as critical thinking skills, problem solving, and decision-making capabilities.

Part of the problem, according to neofunctionalists, is what they refer to as failing *government schools*. They go on to argue that the cybernetic economy of information and knowledge will necessitate the cultivation and harvesting of the best decision-making and problem-solving capacities among capitalist workers and managers. They talk about managers and workers as "knowledge workers" who are able to use new technology, and they advocate that students be educated to fashion large amounts of information and data into patterns from which they might make plausible inferences about business issues. They see problem-solving and decision-making skills—within the context of postcapitalist society and its political, social, and economic arrangements—as the new hemisphere of intelligence. Adaptation to change, continuous lifelong learning, thinking outside of the box, flexibility, proactive thinking, open-minded thinking, intuitive thinking, and a host of other business and managerial psycho-babble are marshaled to meet the "new intelligence" needs of the postmodern capitalist global order (American Management Association, 2000).

Fundamentally, this means that students go to school for the purpose of learning how to compete in a capitalist global society; in school students learn job skills they are told are essential to get ahead. The National Skill Standards Board, containing appointees of President Bill Clinton, adopts this position in its discussion of standards: "The National Skill Standards Board [NSSB] is building a voluntary national system of skill standards, assessment and certification that will enhance the ability of the United States to compete effectively in the global economy" (NSSB, 1998).

From this point of view, education, beginning in primary school, should be designed to create producers and consumers who unquestionably accept and adapt to the business models inherent in capitalist society as well as the power relations that govern them. The new political discourse of conservative neofunctionalism discusses education only as it relates to markets, national identity, global competition, increased productivity, and unbridled consumption. Nothing is said about helping students relate to the world in critical ways that would allow them to "read their lives." For economic conservatives, schools serve national, global, and neoliberal market forces—not people.

Even among those CEOs and neofunctionalists who bemoan the current state of education as an antiquated testimony to the past and talk about the need for critical thinking, the goal is also clearly tied to the bandwagon of individual economic necessity. At President Clinton's 1992 Economic Conference, the former CEO of Apple Corporation, John Sculley, stated this quite succinctly:

> We are still trapped in a K–12 public education system, which is preparing our youth for jobs that no longer exist. A highly skilled work force must begin with a world-class public education system which will turn out a world-class product. . . . It is an issue about an educational system aligned with the new economy and a broad educational opportunity for everyone. Our public education system has not successfully made the shift from teaching the memorization of facts to achieving learning of critical thinking skills. . . . It's America's choice: High skills or low wages. (Sculley, 1992)

According to the new gospel of neofunctionalism, there is a need not only for a different kind of production under post-Fordism but for a different kind of worker—the knowledge worker, the cognitive elite. This is the worker who is adaptable and amenable to multitask work environments, who has a theoretical understanding of systems and how they function, who can work in teams, who can accept new styles of managerial authority, who can form data into patterns and then interpret this data for the good of the company's profits, who can operate within wider frames of reference, who seeks out new information from multiple sources, and who can solve business problems and make business decisions. For neofunctionalists and their economic conservative counterparts, the new millennium is foisting upon us new neoliberal, market-driven cognitive demands and different and unique productive relations, and schools must be ready to accept and meet this challenge if we want the student-worker to get ahead and the United States to be truly able to compete.

Former Labor Secretary Robert Reich makes similar arguments in his book, *The Work of Nations:* "We are living through a transformation that will rearrange the politics and economics of the coming century. There will no longer be national economies, at least as we have come to understand the concept. All that will remain rooted within national borders are the people who comprise the nation. Each nation's primary asset will be its citizens' skills and insights" (Reich, 1992, p. 3).

For neofunctionalists like Reich and Sculley, the argument is clear: Less desirable jobs will not exist in the United States but will be shipped overseas to third-world countries—the new export economies and assembly lines of global capitalism. More complex, intellectually challenging work, they argue, will become the norm in the United States, and of course, there will be winners and losers. However, this time the winners and losers will not only be individuals within nations, but will actually be entire nations themselves. This is the neoliberal message: Global economic necessities demand an educational system tied to the skills and training necessary to compete in the new millennium of cybernetic global capitalism. Critical thinking is important only as it relates to creating critical mass—designing better products, boosting productivity, fashioning better customer service, creating stronger national

identity, and creating a new class of disciplined consumers and servile workers. Preparing citizen-consumers for this "new world order" seems now to have become the raison d'être of education and educational sites.

From the perspective of economic conservatives and neoliberals, educational assessment and world-class standards must be linked to what it means to be successful in the new global economy. Through their efforts they have created standard and assessment think tanks, such as Achieve Incorporated, a nonprofit organization created by a group of CEOs and the National Governors Association that was initially cochaired by IBM's chief executive officer, Louis Gerstner Jr., and Governor Tommy Thompson of Wisconsin (now secretary of Health and Human Services). Such institutions have produced reports like the National Education Goals Report, launched in 1989 as a result of the controversy over the 1983 report, *A Nation at Risk*. The Goals Report announces its mission as follows: "By the year 2000, American students will leave grades 4, 8, and 12 having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern society" (National Education Goals Report, 1991, p. 9).

By adopting what they like to call "world-class standards," these corporate and business leaders are working to identify post-Fordist, neofunctionalist skills that will be necessary for the workplace of the future (Mid-continent Regional Educational Laboratory, 1997). The clamor to define world-class standards and skills has been linked to the presumed dominance of the United States in the world economy, and both economic conservatives and neoliberal policy makers have tied the development of these standards to American market competitiveness. Diane Ravitch, recognized as one of the darlings and chief architects of the modern standards movement, has stated the economic conservative and neoliberal rationale for standards: "Americans expect strict standards to govern the construction of buildings, bridges, highways, and tunnels; shoddy work would put lives at risk. They expect stringent standards to protect their drinking water, the food they eat, and the air they breathe. . . . Standards are created because they improve the activity of life" (Ravitch, 1996, pp. 8–9).

What is ironic is how this neoinstrumentalism and postfunctionalism has been redefined and refashioned to convey the appearance of progressive dialogue: the so-called new school reformers—the new corporate business and managerial elites—giving a call to arms for change. Although the functionalist rationale has changed to that of neofunctionalism, what has really changed are the historical necessities

of capitalism, not a rethinking regarding the role of schools. The contemporary reformers, the neofunctionalists, still advocate and cling to an educational theory and practice allied with the needs of commercial interests and organized along business organizational theories and practices. The difference now is simply how they redefine the new functionalism and instrumentalism in face of postmodern capitalist changes in the relations and forces of production.

Neoliberalism: The Purpose of Education Is to Inculcate Basic Skills

Another argument that we hear today among contemporary conservative educational reformers is that schools must stick to the business of educating children in basic skills. This is nothing new. What is new, however, is how these basic skills are being redefined in the face of changes in the relations and forces of production in postcapitalist society. What was basic in Franklin Bobbitt's time is not so basic today, according to neofunctionalists. Where basic skills were once tied to an industrial society, they are now being recast in terms of the cybernetic-information society—the society we find ourselves in at the beginning of the twenty-first century.

And not only have basic skills been redefined and updated to meet the exigencies of postmodern capitalist development, but we now also find that terms such as *critical thinking* and *Socratic questioning* have been hijacked from progressive educational theory and practice and are now being used to refer to the type of intelligence businesses believe worker-managers will need in the new millennium (Spitzer, 1999).

Indeed, the whole notion of examining and reexamining cognition has now become a major preoccupation of managerial programs, business educational theories, and actual educational training classes. Michael Molenda captures this well when he states: "Learning achievement is the crucial product of the educational system. Schools obviously attempt to perform many functions in American society, including socialization of youth into the community. However, the primary and unique requirement expected of schools is the attainment of the knowledge, skills, and attitudes specified by state and local boards of education. . . . It is what Reich (1991) and others insist is the vital element for economic survival" (quoted in Goodman, 1995, p. 10).

Of course what the postfunctionalists don't tell us is that the development of systematic, collaborative, evaluative, and abstract thinking, through schools modeled after effective and efficient business organizations (Reich, 1992, p. 3), is really designed to develop a cognitive elite—a postmodern managerial class that can ensure the smooth workings of global capitalism. From their point of view, the successful acquisition of capital and the velvety operation of techno-

logical control, authority, and maintenance should be the object of education—thus the postfunctionalism. The rhetoric they choose to embrace is one of citizen inclusivity and an end to the so-called digital divide—a Jeffersonian, democratic education for all. Yet as we can see by examining any number of postfunctionalist programs, their inclusivity is much like that of a private country club that admits its members in accordance with rigid, privileged, class-, gender-, and race-based criteria. It is a gated community for the privileged few—affirmative action for the affirmed.

For the first time, in a real way, the notion of public education itself is being questioned by a new generation of social functionalists. In the past, educational discussions and debates focused on how to bring the nation's public school system up to speed, but the new functionalist arguments actually question the very efficacy, existence, and necessity of public schools. Education is now being conceived of as an "educational marketplace," and a new language of "choice" has emerged to define the terms of the educational debate. Progressive educational concerns regarding the role of democracy, equity, and social justice have been purposefully marginalized and purged from educational discourse in favor, once more, of competitiveness, efficiency, and productivity needs. The new rhetoric of privatized schooling and "choice" circumscribes the language of the debate, and Americans, consciously or unconsciously, are now embroiled in a controversy over the continued existence of public education itself.

Summary

Understanding the historical nature of American schooling and the controversies that have surrounded and continue to encompass the definition of educational purpose is crucial to understanding the current standards debate. Through meticulous, compassionate dialogue and a serious exchange of diverse points of view accomplished in an atmosphere of civility and inquiry, the standards debate in this country can become intellectually enriched. We as American citizens can profit from the controversies in education today. Through continued resistance *against* neoliberal functionalist policies and persistent resistance *for* educational equity, quality teaching, authentic assessment, and intellectual excellence, we as citizens can begin to design curricula and educational standards that meet the needs of our citizens in their quest for happy and productive lives. Without historical understanding and a critical and rigorous dialogue about educational purpose and the role of neoliberal policies, the standards debate in this country promises to hold our nation's children hostage to a neofunctionalism that prepares students only for the necessities of postmodern capitalist life. We need to ask ourselves as a nation: Is this what we really want for our nation and our children?

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WORLD CLASS STANDARDS?

Whose World, Which Economic Classes, and What Standards?

Danny Weil

If educational goals and core values are developed by a few educators in isolation from their communities, no matter how well thought out they may be they will not create the conditions needed for change.

—Tony Wagner

Several years ago, while at an in-service day with elementary and middle school teachers in the state of Washington, I heard many teachers comment that if we are going to teach for thinking we had better develop new, authentic methodologies, theories, standards, and instruments for assessment. As the teachers began to discuss, question, and attempt through dialogue to develop a clear vision of critical thinking and what it means to be an educated person in today's society, it became apparent to them that the standardized tests predominant in education today are simply not able to meet the challenge of quality assessment of student performance, much less to measure how well students understand what it means to be a human being. In fact, almost all of these primary and middle school teachers agreed that the standards debate in this country is little more than a hindrance to real educational reform, as teachers consistently complain that they must prepare their students for assessment instruments that test simply for basic skills and rote memorization. These teachers remarked that in American education, standards, or assessment, continues to be linked to a form of what I call *anorexic-bulimic learning*, whereby students starve themselves until test time only to stuff themselves with skills, facts, and details to be regurgitated without the benefit of intellectual digestion. Laced to this, they argued, is the teaching and assessment of basic skills divorced from meaningful tasks and critical inquiry.

As we sat and discussed the necessity for *authentic assessment*, as opposed to the inauthenticity of standardized tests, almost all the teachers, espe-

cially those in elementary school, commented that their students never asked them how they performed on the standardized state tests once they were completed; nor did their parents seem to use the information the scores provided to develop a clear idea of what their children were able to do as a result of the time they spend in schools or what it really means to be educated. For anyone other than political pundits, real estate agents, and bureaucrats, the test scores seemed to them to be of limited use, representing little more than a collection of anonymous numerics linked to issues of bureaucratic control and power, as opposed to wedded to critical sensibility, self-assessment, and achievements in performance.

As I listened to and participated in the dialogue with these teachers, it became clear to me that these teachers were becoming aware of the ideological nature of the current testing debate and what it implies for teaching and learning; they were beginning to see that the controversy over standards and assessment, in fact the question as to the purpose for the entire enterprise of education itself, is a *political discussion*. Realizing that the debate over education is in fact a political debate that includes issues of class, race, culture, and gender allowed these teachers to begin to move toward an understanding of what Paulo Freire so aptly characterized as "education as an act of freedom as opposed to education as the practice of domination" (Freire, 1970, p. 75). It also allowed them to connect education and its purposes to larger issues in society itself, to begin to formulate their own perspectives on the role of education, intelligence, and what it means to be an educated person.

Many, if not all of these teachers, had never been afforded an opportunity to discuss the role of education and what it means to be intelligent. Their work was defined as a "divorce from conception"—the execution of methodological techniques and practices that, for the most part, they had never even been asked to think about. As teachers, they had been told in "training" programs that learning and knowing are neutral acts separated and divorced from ideology and sociohistorical, economic, cultural, and political dimensions of life. The schools of education that "train" teachers as opposed to "educating them" (Dewey, 1997, pp. 357–358) produce teacher-technicians who have never been asked to think about the philosophical act of teaching, why they teach, for whom and what purposes knowledge and education serve, or how educational practices relate to dominant and privileged theories of learning.

As we continued our discussions and questioning, pondering our work and critically problematizing and examining the theories that guided our practice, we became aware that it is important to first broach the fundamental question rarely discussed: what is the purpose of education and why should we educate human beings? Of course, the answer to this question can vary considerably, depending on one's point of view. Yet we

all concluded that before we could even think about what it means to learn or what it means to educate, let alone delve into the role of standards and assessment, the fundamental question of *what* we are trying to assess and *why* must be tied to the deeper question of why society even bothers to educate its citizens.

Linking the Discussion of Standards to Educational Purpose

REPORTER: *Mr. Ghandi, what do you think of modern civilization?*
GHANDI: *That would be a good idea.*

Perusing the newspaper or listening to television or radio, one might walk away thinking that we are all in agreement as to which educational standards should be adopted and what they should assess. The debate has been cast as a national debate, and yet as a nation, we Americans have not been involved in theorizing the debate or developing its actualities. There is no discussion about how the current standards proposals have been designed, who designed them, or for what purpose. Leaders and elites have designed the discourse, tailored the contents, and dictated the terms of debate.

Yet the current national debate regarding standards is important, for it reveals that it is not the debate we should be having. Debating standards is putting the cart before the horse. The real debate would ask us to incorporate into consideration such questions as What is good teaching? How does one learn? What is intelligence, whose interests does it serve, and how is it achieved? It would be a debate that invited community, parents, students, and teachers to engage in discourse about what it means to be human, how to act in and with the world, and how to make sense out of one's personal life in light of historical and cultural change.

There are many points of view regarding the role or purpose of schools in society, and it is not the aspiration of this chapter to give a prolonged or detailed characterization of the myriad frames of reference on the subject. However, I think that characterizing at least some of these points of view in terms of how the debate is currently defined is essential to engaging in a truly meaningful dialogue about assessment and standards. Currently, popular political debates regarding literacy, standards, and assessment continue to concentrate on anecdotal evidence and attention-seeking headlines that really do little or nothing to help teachers, their students, or their students' parents move toward a genuine curriculum of thinking and learning. Furthermore, many parents and community members continue to labor under old paradigms of what it means to be literate, intelligent, and *assessed*, and these paradigms are fueled and nurtured by an ignorant and demagogic media that continues to separate assessment from learning while seeking to frame the complex issue of education in either *back-to-basics* or *outcome-based education*—in both public schools and private schools.

Economic Conservatives and the Neoliberal Argument

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—A Nation at Risk

The prevailing point of view at this juncture in history, one that is embraced by neoliberal assertions and that resonates throughout the media, seems to be that school is merely a training ground for the necessities of market civilization—that is, preparation in school is preparation for work.

Fundamentally, this means that students go to school for the purpose of learning how to compete in a capitalist global society where they are taught job skills they are told are essential to get ahead. The National Skill Standards Board, containing appointees of President Bill Clinton, adopts this position in its discussion of standards: "The National Skill Standards Board is building a voluntary national system of skill standards, assessment and certification that will enhance the ability of the United States to compete effectively in the global economy" ("President Clinton," 1999).

From this point of view, education, beginning in primary school, should be designed to create producers and consumers who accept and adapt to the business models inherent in capitalist society as well as the power relations that govern them. The new political discourse of conservative neoliberalism discusses education only as it relates to markets, national identity, global competition, increased productivity, and unbridled consumption. Nothing is said about helping students relate to the world in critical ways. For economic conservatives, schools serve national and market forces—not people. Even for those CEOs and neoliberals who bemoan the current state of education as the antiquated testimony of the past and who talk about the need for critical thinking, the goal is also clearly tied to the bandwagon of individual economic necessity, as illustrated by a speech on education made by the former CEO of Apple Corporation, John Sculley, at Bill Clinton's 1992 Economic Conference:

> We are still trapped in a K-12 public education system, which is preparing our youth for jobs that no longer exist. A highly skilled work force must begin with a world class public education system which will turn out a world class product. . . . It is an issue about an educational system aligned with the new economy and a broad educational opportunity for everyone. Our public education system has not successfully made the shift from teaching the memorization of facts to achieving learning of critical thinking skills. . . . It's America's choice: High skills or low wages (Sculley, 1992).

According to the new gospel of neoliberalism, there is a need not only for a different kind of production under post-Fordism, beyond the dominance of the assembly line in produc-

tion, but for a different kind of worker—the knowledge worker. This is the worker who is adaptable and amenable to multitask work environments, who has a theoretical understanding of systems and how they function, who can work in teams, who can accept new styles of managerial authority, who can form data into patterns and then interpret this data for the good of the company's profits, who can operate within wider frames of reference, who seeks out new information from multiple sources, and who can solve business problems and make business decisions. For neoliberals and their economic conservative counterparts, the new millennium is foisting upon us new market-driven cognitive demands and different productive relations, and schools must be ready to accept and meet this challenge if we want students to get ahead and America to be truly able to compete.

Former Labor Secretary, Robert Reich, makes similar arguments in his book, *The Work of Nations:* "We are living through a transformation that will rearrange the politics and economics of the coming century. There will no longer be national economies at least as we have come to understand the concept. All that will remain rooted within national borders are the people who comprise the nation. Each nation's primary asset will be its citizens' skills and insights" (Reich, 1992, p. 3).

For neoliberals like Reich and Sculley, the argument is clear: Less desirable jobs will not exist in the United States but will be shipped overseas to third-world countries—the new assembly lines of global capitalism. More complex, intellectually challenging work, they argue, will become the norm in the United States, and of course, there will be winners and losers. However, this time the winners and losers will not only be individuals within nations, but will actually be entire nations themselves. This is the neoliberal message: Global economic necessities demand an educational system tied to the skills and training necessary to compete in the new millennium of a cybernetic global capitalism. Critical thinking is important only as it relates to creating critical mass—designing better products, boosting productivity, fashioning better customer service, creating stronger national identity, and creating a new class of disciplined consumers. Preparing citizen-consumers for this "new world order" becomes the raison d'être of education and educational sites.

Economic conservatives and neoliberals, however, go even one step further, arguing that there is now a need to eliminate what they term "frills" in education, to narrow the offerings in curriculum, to increase the number of required subjects, to standardize schools across the board so that they are barely distinguishable from community to community, and to support and promote a culture of private accumulation of wealth and individualistic choice. Silicon Valley entrepreneur Ron Unz recently made this point:

> The problem isn't what schools lack but what they possess in abundance,

> namely half-baked educational fads produced by elite educational theorists. The list is quite long: whole language, bilingual education, inventive spelling, fuzzy math, constructivist science, endless self-esteem programs and other wrong headed pedagogical experiments. According to numerous studies, this educational machinery produces students with the highest self-esteem but the lowest academic test scores of any of their global peers. (Unz, 1999, pp. 6–7)

Unz goes on to propose that the problem be corrected not by adding to the curriculum, but by subtracting from it. He continues: "Instead of more money, more teachers, more programs or more days of schooling, we should be reducing as much of the burdensome nonsense in public schools as possible. If a straightforward academic curriculum seems to work reasonably well in nearly every other major nation, the burden of proof is on those who say that it can't possibly be tried in America's unique society" (Unz, 1999, p. 7).

Some of this "nonsense" can be found in such "frivolous pursuits" as recess in elementary schools. For many elementary school students, recess and student play has been eliminated in favor of rigid, authoritarian, and regimented learning. Joy, relationships with others in the world and with the workings of the world become educational add-ons that threaten the authoritarian structure of education. Even kid pleasures seem to be under attack as "cheap frills" (Aronowitz, 1998, p. 6). And of course the main culprits, as defined by these elite voices of industry, are public schools and public education.

From the economic conservative and neoliberal perspective, educational assessment and world class standards must be linked to what it means to be successful in the new global economy. Through their efforts, they have created standard and assessment think tanks, such as Achieve Incorporated, a nonprofit organization created by a group of CEOs and the National Governors Association that was initially cochaired by IBM's chief executive officer, Louis Gerstner Jr., and Governor Tommy Thompson of Wisconsin (now secretary of Health and Human Services). Such institutions have produced reports like the National Education Goals Report, launched in 1989 as a result of the controversy over the 1983 report, *A Nation at Risk*. The Goals Report announces its mission as follows: "By the year 2000, American students will leave grades 4, 8, and 12 having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern society (National Education Goals Report, 1991, p. 44).

By adopting what they like to call "world class standards," these corporate and business leaders are working to identify the post-Fordist skills that

will be necessary for the workplace of the future (Mid-continent Regional Educational Laboratory, 1997). The clamor to define world class standards and skills has been linked to the presumed dominance of the United States in the world economy, and both economic conservatives and neoliberal policy makers have tied the development of these standards to American market competitiveness. Diane Ravitch, recognized as one of the darlings and chief architects of the modern standards movement, has stated the economic conservative and neoliberal rationale for standards: "Americans expect strict standards to govern the construction of buildings, bridges, highways, and tunnels; shoddy work would put lives at risk. They expect stringent standards to protect their drinking water, the food they eat, and the air they breathe . . . Standards are created because they improve the activity of life" (Ravitch, 1996, pp. 8–9). For conservative standards advocates like Ravitch, it seems that human educational standards can be equated with "quality control" in industry, assuring that the product conforms to industry standards.

Cultural Conservatives and the Crisis in Education

The national debate on education is now focused on truly important matters: mastering the basics . . . insisting on high standards and expectations; ensuring discipline in the classroom; conveying a grasp of our moral and political principles; and nurturing the character of our young.

—William Bennett

Why should we subsidize intellectual curiosity?

—Ronald Reagan

For cultural conservatives, the role of education is far more complex than simply producing workers who can compete in the global economy. Although they agree with the notion of education for the new workplace of the future, cultural conservatives argue that the real role of schools is to transmit a common individuality, a single American identity. They understand that education is political and moral activity, and they look to schooling as a site for the transmission of Judeo-Christian values, conservative morality, and a common American heritage. Thus they place great emphasis on manipulating symbols, such as the Bible and the national flag. Arguing for back-to-basics and privatization in education, these conservatives lament what they characterize as the Balkanization of American identity, and they abhor diversity as a threat to national unity and to a common American psyche. In the minds of cultural conservatives, loyalty, patriotism, and obedience to authority must be rigorously and uncompromisingly taught and can be accomplished by establishing a common curriculum (Hirsch, 1988). The cultural conservative movement also argues that schools must teach specific facts and that these facts must never be challenged, but must rather be accepted as immutable, permanent truth.

For cultural conservatives, the educational crisis is really little more than

an indication of a larger crisis—a society that has fractured into diverse points of view, where civility has eroded and where standardized interpretations of the world have been forsaken for what they term a "moral relativism" (Bennett, 1988, p. 9), or values deficit. They blame the "excesses" of the 1960s for what they see as the current crisis in schools and society in general, going so far as to claim, as does P.Y. Pines, that "[f]or the half decade starting with the late 1960's, long established academic standards were abolished wholesale in a spasm reminiscent of the Red Guard's destructive rampage through China's classical cultural institutions" (as cited in Shor, 1992, p. 59).

Despondent over the loss of what they see as the "golden age of pedagogy," where skills and common, unquestioned values were the object of school curricula, cultural conservatives embrace back-to-basics as the panacea for what is wrong with America. One of the best indications of this thrust can be seen in a 1977 article that appeared in *Phi Delta Kappan*. Here, Ben Brodinsky characterized the back-to-basic conservative movement in terms that resonate even more loudly today. According to Brodinsky, back-to-basics proposes, among other things, that the school day be devoted solely to reading, writing, and arithmetic and that phonics be the method used to teach reading. Textbooks should not display "nontraditional values" in sex, religion, or politics, and any criticism of national identity and "American values" should not be tolerated. Pedagogy is to be teacher-centered with stern discipline, not child-centered with student autonomy. Frequent drills and skill-based curricula, along with teaching facts to students, should be the norm. Academic criteria for promotion must be advocated in place of social promotion. There should be no "frills" in education, such as sex education or controversial discussions of current affairs. The school day should be filled with fewer electives and more required courses in the *basics*. And the elimination of experimental and innovative courses and methods for value clarification, critical discussion, and inquiry should be purged from educational corridors. Finally, back-to-basics, both then and now, advocates the return of patriotism to schools, along with religious instruction (Brodinsky, 1977, pp. 87–94).

Cultural conservatives call for a curricular restoration of authority in schools whereby teachers are to be colonial administrators of an educational plantation. And the same themes that underlie their calls for curriculum restoration can also be found in the attack on what they term "secular humanism." As U.S. Senator Jesse Helms commented not long ago: "When the U.S. Supreme Court prohibited children from participating in voluntary prayers in public schools, the conclusion is inescapable that the Supreme Court not only violated the right of free exercise of religion for all Americans, it also established a na-

tional religion in the United States—the religion of secular humanism" (as cited in Duncan, 1979, p. 92).

The movement today toward vouchers for religious schools, home schooling, and the effort to abolish the teaching of evolution in schools has its roots in the Religious Right's efforts to place religion squarely within the sphere of public education. According to cultural conservative Tim LaHaye, "Today public education is so humanistic that it is both anti-Catholic and anti-Protestant—because it is anti-God. . . . The chaos of today's public education system is in direct proportion to its religious obsession with humanism" (LaHaye, 1980, p. 68).

By defining education as training, moral indoctrination, authoritarianism, religious instruction, and back-to-basics, we can easily see why the national debate over standards, from the cultural conservative point of view, is tied to advocating a calibrating apparatus that measures students' progress as the ability to memorize and regurgitate preordained and prescribed facts and data, exercise skills in isolation, digest jingoistic curricula without questioning, read phonetically, and obey authority. William Bennett, the arch–cultural conservative and former educational "czar," stated the cultural conservative position clearly: "We neglected and denied much of the best in American education. . . . We simply stopped doing the right things and allowed an assault on intellectual and moral standards" (Bennett, 1988, p. 9). For Bennett and his cultural conservative cohorts, the assault on intellectual and moral standards has led schools away from their mission—indoctrination and inculcation. These conservatives now rejoice at what they feel is a return to the "real" purpose of education—they see their judgment day as having arrived.

Critical Pedagogy and the Progressive Postmodernist Position

The problem of education in its relation to the direction of social change is all one with the problem of finding out what democracy means in its total range of concrete applications: domestic, international, religious, cultural economic, and political. . . . The trouble . . . is that we have taken democracy for granted; we have thought and acted as if our forefathers had founded it once and for all.

—John Dewey

Radical pedagogy and progressive postmodernism, as pronounced and defined by Brazilian educator Paulo Freire in his landmark book *Pedagogy of the Oppressed* (1970), attaches a completely different and contrary meaning and purpose to education than do cultural conservative, economic conservative, and neoliberal notions of education. For Freire and his progressive postmodern contemporaries, education is not an impartial act, but a conscious political act of freedom and love aimed at subjective exploration and self-reflection, and it should be grounded in an ethical format that

embraces human beings, their historicity and their search for emancipation. Much like W.E.B. DuBois, who early on commented that the role of education "is not to make carpenters out of men, but men out of carpenters" (DuBois, 1924, pp. 51), Freire envisioned education and its goals as the eradication of human exploitation, the abolition of human manipulation, the elimination of avarice and greed, the rejection of insipid individualism devoid of individuality, and the rejection of racial, class, and sexual discrimination and exploitation—not capitalist competitiveness. Freire himself was very clear in this regard: "My point of view is that of 'the wretched of the earth', of the excluded" (Freire, 1998b, p. 22).

Radical pedagogy believes that teacher preparation must not be married to training but instead should be attached to a search for personal and social meaning within historical and contemporary understanding. And these teachers believe that knowledge can never be conveyed or transmitted as mere facts and information but must be invented and reinvented through discursive inquiry and a problem-posing curriculum that seeks to help citizens make sense of their cognitive and emotional lives and the world within which they live.

This does not mean that these postmodern theoretical positions define basic skills as unimportant or hold that they should not be taught; rather, their proponents argue that the key is how these skills are taught, the context within which they are taught, and how they are incorporated in the service of enabling the human being to think and act critically. Teaching skills in the context of reasoning, where emotional intelligence and rational thinking are reconnected in the pursuit of intelligent activity orchestrated and incorporated in the service of a problem-posing curriculum that is based on inquiry and discovery, is much different than teaching skills in rote isolation along with indoctrination in the form of culturally legitimized facts disconnected from meaning.

Where conservatives and neoliberals attempt to regulate the world of students through standardization, indoctrination, and the removal of discourse and autonomy, radical pedagogy and progressive postmodernist educational claims assert that education must be interested in the consciousness of human beings and a determination to help them "read the world" through interaction and dialogue (Freire, 1970). Postformalism would advocate teaching ethics *without* indoctrination, in a context where students are encouraged to forge their thinking skills in the fires of controversy and critical scrutiny. Again, Freire states this position clearly: "Problem-posing education affirms men and women as beings in the process of becoming—as unfinished, uncompleted human beings in and with a likewise unfinished reality. The unfinished character of human beings and the transformational character of reality necessitate that education be an ongoing activity" (Freire, 1976, p. 77).

Radical Pedagogy, Progressive Postmodernism, and the Educational Critique of Standards and Assessment

Let us view understanding not as a state of possession of knowledge, but one of enablement. When we understand something, we not only possess certain information about it but are enabled to do certain things with that knowledge.

—David Perkins

As pointed out earlier, in the view of radical pedagogues and progressive postmodernists who embrace democracy and the need for a democratized self as the focus of education, schooling must be linked to what it means to be human. Currently, preparation in school is defined solely as preparation for work, and this preparation for work is sold to the public as preparation for life. Radical pedagogy and progressive postmodernist positions disagree vehemently with this predication and posit the contrary—that preparation in school should be preparation for life, and preparation for life will, by its very nature, enable students to be prepared for the exigencies of work. Certainly rational production is a necessity for human endeavors, but a critical and democratically committed citizenry, they argue, is much more capable of rational production than an unconscious manipulated citizenry grafted onto corporate agendas. They argue that schools should be centers for utopian thinking, laboratories of wonderment, and environments of inquiry available to all students. Yet, progressive postmodernists argue, the unfortunate reality is that amidst all the talk of educational reform, schools are still seeped in the past and thus can do little to help children create and invent their future or the future of society. Because of their emphasis on education as liberation, progressive postmodernists have constructed powerful critiques of economic conservative, neoliberal, and cultural conservative arguments for education and educational standards.

The Standards Debate as Social Prevarication and Myth

Perhaps the greatest tragedy of modern man is his domination by the force of myths and his manipulation by organized advertising, ideological or otherwise. Gradually, without even realizing the loss, he relinquishes his capacity for choice; he is expelled from the orbit of decisions. Ordinary men do not perceive the task of the time; the latter are interpreted by an "elite" and presented in the form of recipes and prescriptions. And when men try to save themselves by following the prescriptions, they drown in leveling anonymity, without hope and without faith, domesticated and adjusted.

—Paulo Freire

Human beings seek to exist in the world, to make sense of their peculiar relationships with external and internal reality. They seek dialogue and relationships with others in order to claim their humanness and become free from the external and internal bonds that bind them. Standards, claim progressive postmodernists, are part and parcel of the sickness, the cognitive dis-ease that is rampant in education today precisely because

they reinforce the meaningless of education—giving meaning only to what education can do for one materially, not psychologically or subjectively. They become little more than a prerequisite for accepting and adjusting to a market society.

To begin with, radical pedagogy and progressive postmodern educational theory, hereinafter referred to as *postformalism* (Kincheloe, Steinberg, and Villaverde, 1999), argues that tests and testing do far more than simply seek to measure academic performance or basic skills. From a postformalist point of view, standards and assessment as put forth by both economic and cultural conservatives give a false illusion—an ideological myth of meritocracy and objectivity that really operates deceitfully as technologies of power and control (Foucault, 1977). Standards operate as part of a modernist project, dissecting thinking into minute fragments and then testing the fragments separately from the whole. They also are part of a monocultural or Eurocentric and androcentric tradition that places value on sociocentric truths and cultural claims to superiority.

Postformalism would argue that conservative standards, hereinafter referred to as *universal standards*, are culturally biased, gender discriminative, and class-based sorting and classifying mechanisms that surreptitiously seek to motivate students by holding out the promise of extrinsic material rewards if the standards are met: better jobs, college entrance, higher incomes, and better employment. Universal standards create a false ideology of "fairness" that proclaims that individual effort is the controlling factor in determining success, regardless of one's social class, sex, race, cultural background, or particular place in the social system. Postformalism argues that the current standards debate actually serves to suffocate a truly genuine dialogue about the purpose of education, about the meaning of history and the identity of human beings as subjects seeking their freedom in the enterprise of life; instead, the debate demagogues and couches the controversy over schooling as market competitiveness, global production, better goods and services, and strong national identity.

Unfortunately, and yet understandably, the notion of universal standards resonates with many parents, especially minority parents and the economically and culturally disenfranchised, precisely because they want their children to become successful in a racially and sexually biased class society where wages, for the majority of people, have scarcely risen in more than twenty-five years (Sklar, 1999). And as new jobs emerge and old ones die out, education is increasingly looked upon by our citizenry as a way to endure rapid changes in economic life—to get ahead; education is a way out, or at the very least, a way to stay even and survive. Lower wages, unemployment, and jobs relocated to third-world countries have created economic insecurity, misery, and uncertainty among American citizens, as people scramble and try to avoid becoming

the next victim of reorganization, reengineering, downsizing, or restructuring or being caught in the undertow as businesses disappear, merge, and are bought out overnight. The Right exploits these fears and economic uncertainties with the rhetoric of universal standards, falsely arguing that if we only had higher, more normative standards, education would prepare everyone for the "new world order" and ensure that security and equality would be reinstituted in mental and material life. The message is clear: Don't change life, change standards.

The Illusion of Individualistic Meritocracy

The universal standards debate disguises the way that history constructs meaning and defines opportunity by eternalizing standards behind false images of meritocracy, scientific rationality, and truth. By giving illusion to the mythology of meritocracy, standards serve to marginalize, discourage, and disenfranchise, precisely because they propose that those who fail to live up to these technicist standards are individual failures and do not belong in education, that they would be better served in vocational programs, or that perhaps they should not be educated at all. The failure to meet normative standards becomes defined as an individual problem devoid of social context and culpability. The debate refuses to recognize and discuss socioeconomic issues such as crumbling school infrastructures, overcrowded schools, inadequate teaching resources, dysfunctional teacher training programs, the clandestine nature of teaching in isolation without mentorship or guidance, the shortage of qualified teachers (especially among minority communities), poverty, dysfunctional families, the lack of early childhood nutrition, health care, or preschool, low salaries, the dismal state of parental involvement, poverty, low wages, and the economic and political arrangements of postmodern capitalist society that, if they do not create these conditions, certainly allow them to exist. Nor does the debate recognize intellectual diversity, cultural distinctions, epistemological processes and concerns, language disparities and differences, or gender discrimination.

Education is a uniquely public and cooperative activity undertaken in concert with others for the purpose of reading the world, forging loving relationships, living a productive life, and developing personal and social understanding. Yet universal standards create a scarcity mentality—a win-lose situation wherein competition and the ruthless landscape of grade acquisition shape educational discourse and practice under false claims of meritocracy. Standardized tests base themselves on and reinforce an ideology of insipid individualism, where others exist only as rungs on a ladder for one to "get over," to compete with and measure oneself against. Thus, a uniquely public, collaborative activity—*learning*—becomes a privatized, competitive activity—*getting good grades*. For this reason, universal standards are antithetical to human agency and authen-

ticity; they are testimonies to class-, race-, and sex-based privilege and the objectification and reification of human intellectual endeavor. They tear asunder all forms of educational community, pitting students against students, teachers against teachers, and citizens against citizens. Universal standards rigidly enforce hierarchies, acquiescence, and submission in place of cooperation, collaborative problem-solving and shared experience and dialogue. They operate as an ideological moral authority in the hands of an immoral constituency.

Furthermore, the current standards debate gives the false illusion that "we are all in this together" and that the standards proposed are objective, fair, and not culturally, racially, or sexually biased. The debate does this by couching rhetoric in words such as "we," "us," "our," and "together." The discussion provides an individualistic rationale that serves to temper resentment when somebody else gets into college, or gets the "good" job. "After all, *we're* all working under the same standards, aren't *we*? If you just would have done better!" Universal standards impose an "unnatural selection" on citizens by proclaiming their *naturalness*, and in doing so they ideologically manipulate the public with the falsity of their own mythology. All of this serves to surreptitiously beguile students, teachers, and community into believing that there is no political agenda, no advocacy of cultural norms, no prevalence of hierarchical classifying and sorting—that standards are a neutral, generic conception and operation applicable equally and fairly in the interests of everyone.

Standards and the False Claim to Universality and Objectivity

Human beings come to educational sites with different cultures, backgrounds, opportunities, and constraints. Postformalism alleges that rationalistic universal standards are really sociohistorical constructs, and that at this juncture, they are peculiar constructs allied to the needs of a particular socioeconomic system—postmodern capitalism. Postformalists argue that universal standards are little more than dominant-based claims, scientific, mechanical formulas and regulations that educational elites proclaim as immutable and non-transformatory, but which in actuality are socially and historically created. By masquerading as objective science, standards become a tool for those in power to impose conformity and ideological servitude on people and communities; they become what Foucault termed a "technology of power" (Foucault, 1977)—that is, a way to decimate difference in the interest of privilege and ideological domination by instrumentalist policing. The current standard debate masks difference by failing to acknowledge the diverse epistemological ways of knowing and perceiving the world. Difference, be it cultural, gender based, economic, or otherwise, is sacrificed to a debilitating reductionism that must locate itself within the

modernistic conception of scientific, rational, Newtonian thought.

By casting standards as a form of scientific "truth," as a universal techno-rationality, cultural conservatives and neoliberals furtively promise to abolish cultural and class differences by imposing a universal, scientific norm. Imposing uncritical acceptance and passivity through universal assertions of truth, standardized tests cloak prevarication in the clothes of veracity. They foment the idea that there is a preestablished, nonhistorical, universal standard for acceptance into the community of human beings, and in so doing, they attempt to maintain a passive public that refuses to challenge the historicity of cultural norms and the social context and construction of knowledge. Furthermore, current standards teach the hegemonic lesson of obedience by offering ecumenical rules and preordained procedures that must be followed in order for both teachers and students to adapt. Thus, they reduce education to a mere recipe that must be followed, as opposed to an artful process that must be created.

Standards as Instruments of Technocratic Control

Teaching is an act of love, a performance art involving creativity and intelligence. Yet, postformalism argues, universal standards hold students and teachers hostage to an ideology and practice of inauthentic learning and being—a loveless, antiseptic relationship between students and teachers, a false dualism between the world as an object to be understood and the knower seeking to understand. For this reason standards serve as a straightjacket that binds both the heart and the mind, for they impose teaching as an act of functional, instrumental control—of technological device—not an act of compassion, caring, and love. Standards become a means of covertly managing people and knowledge for private ends. John Fiske reminds us of this when he notes:

> Knowledge is never neutral; it never exists in an empiricist, objective relationship to the real. Knowledge is power, and the circulation of knowledge is part of the social distribution of power. . . . The first is to control the "real," to reduce reality to the knowable, which entails producing it as a discursive construct whose arbitrariness and inadequacy are disguised as far as possible. The second struggle is to have this discursively (and therefore socio-politically) constructed reality accepted as truth by those whose interests may not necessarily be served by accepting it. (Fiske, 1989, pp. 149–150)

Critical consciousness and education for freedom ask men and women to critically examine and scrutinize their social order, not to blindly accept it—to expunge that which oppresses them and embrace that which promises to liberate them. Yet, postformalists would argue, universal standards operate as way of maintaining the inequitable social order, a way of

controlling both students and teachers and the production line they work on so that they might blindly and obediently reproduce their own oppression.

Standards as they are currently designed are also a way of controlling, chloroforming, and policing curricula to ensure that what is taught conforms to what the cultural conservative and economic conservative elites feel is important. Teachers are mandated to *teach to the test*, and those who do not are labeled "maladjusted," in need of remediation, and punitively dealt with accordingly. In Delaware, for example, 20 percent of the educational evaluation of teachers will be based on whether students make "progress" within one year with a particular teacher, regardless of whether students have come to the class ready or prepared to learn (George Bush, Speech on education, CNN, September 2, 1999).

"Accountability" becomes the buzz word for those who embrace the need for universal standards. Yet the accountability that is advocated is a one-sided, individualistic accountability, not a shared, socially collaborative accountability, a mutual accountability between socioeconomic arrangements and individual effort and responsibility. Under the rubric of "accountability," individual teachers and their students become individually blamed for the poor academic performance of individual students, regardless of the students' history of achievement, their attitudes regarding learning, or their readiness to learn. George W. Bush made this position quite clear in his elitist and cynical dismissal of social accountability and culpability when he smugly stated, "Pigment and poverty need not determine performance" (George Bush, Speech on education, CNN, September 2, 1999). The rhetoric appears equitable, responsible, and logical because it seeks to remove issues of race, gender, and social accountability from the debate while putting forth the hidden claim that we all operate on a level playing field.

Universal standards also impose psychological fear among educational community members while simultaneously de-skilling them by turning lesson plans into instrumentalist recipes and antiseptic and generic teaching formulas. The Mid-continent Regional Educational Laboratory, for example, is just one of many think tanks that now have lesson plans available on-line that are linked to any state standard (Mid-continent Regional Educational Laboratory, 1999), further de-skilling teachers by separating them from the conception of their labor and reducing them to simply technical instruments—objects in the service of education as training and slaves to the state standards.

In the United States it was once proclaimed that education is a human right, a Jeffersonian legacy of a common democracy. Yet universal standards insidiously operate as instruments of power, secretly seeking to destroy public schools through economic strangulation in favor of private and religious schools and vouchers. They do this ideologically by feeding the mythological claim that public

schools and public school teachers are failing, that they are not living up to the universal standards that elites have imposed. The former president of the Xerox Corporation made this point quite vigorously when he stated, "At a time when our preeminent role in the world economy is in jeopardy, there are few social problems more telling in their urgency. Public education has put this country at a terrible disadvantage" (Kearns & Doyle, 1988, p. 1).

In Florida, universal standards are currently being used to belittle and destroy public schools and the students and teachers who work in them in a particularly disturbing manner. For example, school-by-school report cards have recently been released that assign each public school an A, B, C, D, or F based largely on how the schools and their teachers and students measured up to the state's predetermined standards for competency on the reading and mathematics portion of the Florida Comprehensive Achievement Test. Released on June 24, 1999, these school scores serve as an attention-getting aspect of the new statewide accountability system, and they foster in the public's mind the notion that public schools are failing both students and the public at large ("De Facto National Standards," 1999). They intimate that teacher unions are dismissive of accountability and the idea that teachers should be held responsible and suggest that teachers are interested only in higher wages and benefits for teachers, regardless of their level of competence. The debate rarely focuses on the fact that Florida schools serve 75,000 students who are foreign born, many of them living in situations of high poverty ("De Facto National Standards," 1999). From conservative perspectives, pointing out such facts is simply offering a cultural and class-based *excuse* for individual failure and thus more apologies for lack of accountability and social responsibility.

According to the school reform measures backed by Governor Jeb Bush and passed by the Florida state legislature, the state will now offer vouchers worth $4,000 each to students attending Florida public schools that receive Fs two times in four years. The students may use the vouchers to pay tuition at private or religious schools (*Education Week*, May 5, 1999). Such policies will in turn take more monies from public coffers—bleeding the public schools, economically strangling them, further reducing their ability to function and then hypocritically blaming them for low achievement. This is how universal standards have become an insidious tool, an instrumentalist weapon in the political-conservative fight to dismantle public education by stigmatizing schools and those who teach in them while simultaneously withholding funds and allowing them to hemorrhage to death.

Publicizing test scores is another attempt to shame teachers, to humiliate them, to let low-income and minority students see themselves as incompetent or less educable, while teachers are told that they are dysfunctional and in need of remedial ad-

justment. This tactic also serves to propagandize and concretize in the mind of the public the idea that unions, in this case teacher unions, are to blame for the problem—that tenure, collective action, or job security rights shield poor teachers and prevent principals, now called CEOs in the vernacular of privateers, from hiring good teachers and firing bad ones. The idea is to cajole the public into an uncritical belief that unions tie reformers' hands, stand in the way of progress, and act in students' worst interests. Certainly this chapter will not serve as an apologist for all that goes on in public schools, from the way they are managed to the way they are operated. However, the universal standards debate is a clear attempt to belittle, rather than intervene and fix, one of the last vestiges of public life in America today—public schools.

Universal standards, prescribed more like mechanical operations and procedures and stripped of all humanness, also become unconscious, ideological features of instrumentalism and technological hegemony. They become the extrinsic reward structures that children in the early years ideologically internalize, reward structures that are echoed later in the economic bonus and incentive systems that will eventually be offered to them to induce them to produce more, to fulfill the future needs of the capitalist workforce. Corporate society needs this psychological, ideological internalization process to begin at an early age in order to prepare citizens for the competitive rigors and inequality of capitalist life. Cast in this role, universal standards operate in the interests of an authoritarian construction of unconscious assumptions and patterns, as well as strengthening an insidious individualism so necessary to capitalism's material and ideological survival. They become the equivalent of Adam Smith's invisible hand, guiding our privatized self-serving interests within a community of rapacious materialism and operating to diminish relationships, to foment public distrust and disharmony, and to inculcate the ideology of competition within the constructs of the human consciousness. Because of this, they are a form of theoretical, techno-rational control in the hands of a bureaucracy devoted to the desires and needs of a privileged few.

Standards as Big Business

Standards are also big business. The math and reading lists now linked to many state standards have a huge impact on what states can buy with citizens' tax money. The state of California, for example, which recently approved new state standards in reading and math, will spend more than 1 billion dollars of public monies over the next four years on textbooks for classrooms, purchasing texts from corporations such as Houghton Mifflin, Harcourt Brace, and McDougal Little. Yet of this amount, the $250 million spent each year can *only* be spent on textbooks that the state has aligned with the new standards. School districts in California may only spend 30 percent of their grant monies on texts

that are not on the state-approved list. And these textbook adoptions are made by a select few, not as a result of a lively community debate or critical examination by the teachers who are forced to use these texts. According to Judy Anderson, the president of the California Math Council, a group that represents 10,000 math educators in California: "If we define mathematics as simply following the rules, that's what this textbook adoption brings about. There's not any thinking going on here" ("California Approves Textbooks," 1999, p. 10). Corporations love the new standards, and so do the nanny state and federal governments that promise that the costs associated with textbook adoption are socialized while corporations and their stockholders privatize the enormous profits.

Standards and the Definition of Intelligence

Critical inquiry, critical perception, and critical consciousness assist human beings to engage the world, to see the world as an object independent of themselves that is capable of being known, changed, and understood in relationship to themselves. Education is responsible for the development of this critical consciousness and engagement, not the rote memorization and indoctrination of universally declared facts and behavioral norms.

As previously discussed, standardized tests, as presently constructed, are based on assessing whether students have digested a set of universally designated facts. And facts are important to conservatives, for as Walter Feinberg has noted: "Facts—uninterpreted naked facts—are a sign that the national identity is intact and that local cultural meanings and aspirations are under control. When facts are challenged, when every ethnic and racial group wants its own facts taught in schools, when there are feminist facts, Afro-American facts, and gay facts—then conservatives worry that the school can no longer be counted on to transmit a unified national identity" (Feinberg, 1993, pp. 86–87).

Universal standards liken the intelligent person to a *Jeopardy* contestant: a person who is a repository of facts and information. Intelligence becomes commensurate with having information and basic skills, not with using information and skills to gain knowledge and then empowering oneself through its use. For conservatives, any counterinterpretation of facts, any critical inquiry, questioning, or interrogation of these facts threatens the single conservative national unity, that is, it threatens those in power by stripping naked their moral and mythological political claims about what ideology is, what its implications are, and how it operates to preserve inequality and the status quo.

And of course, universal standards serve another more insidious role: they help to define and reinforce an undemocratic notion of intelligence based on solely Cartesian scientific, rationalistic claims to achievement. The notion of multiple intelligences, as developed by Howard Gardner, which acknowledges that there are

multiple ways of knowing including indigenous knowledges, women's consciousness and cognitive processes, emotional intelligence, and so on, are discarded in favor of a logical-mathematical, cognitive intelligence. Any deviation from the universal standard becomes a deviation from the norm, and the rationalistic, Cartesian norm becomes defined as what it means to be human, to be intelligent.

What Might Critical Thinking Standards Look Like and How Might We Link Them to Accountability?

The object of education is to prepare the young to educate themselves throughout their lives.

—Robert Maynard Hutchins

There are no eternal facts as there are no absolute truths.

—Friedrich Nietzsche

Although postformalism is critical of the current conservative standards debate for the reasons discussed above, postformalists also recognize the need for *authentic* standards to assess and measure progress among students. They too believe that teachers and students should be held accountable and responsible, but they also believe that society itself must be held accountable—that accountability must be shared between individuals and the social structures they live in and that both the objective and subjective conditions of society must be understood to create this shared accountability.

Postformalism is interested in assessing *how* students think, not *what* they think, and they want standards and accountability tied to what it means to be a critical thinker. Postformalists are also committed to helping students develop the ability to assess themselves, the ability to develop and apply criteria to their thinking in the interest of self-improvement and continuous lifelong learning. They begin with the human being—looking to define what it means to be human and intelligent—and then they develop "standards" to assess this humanness and intelligence. These *authentic* standards don't abandon the teaching of basic skills. On the contrary, postformalists seek to teach basic skills within an environment of inquiry that enhances and assesses critical and creative thinking—not simply to teach basic skills in isolation as repetitive, boring activities. They are concerned that skills are best learned and internalized through their use in harmony with the construction of collaborative and individual projects.

Teachers who teach for critical thinking are interested in developing their students' capacity to solve problems, develop empathy and humility, make rational decisions, and continuously assess their thinking to determine its strengths, weaknesses, and limitations. These teachers seek to imbue in their students a sense of imagination and curiosity that calls on them to seek complex answers to complex questions in a world with others—to approach learning as an act of "figuring out what they don't know."

They are particularly interested in helping their students develop effective modes of thinking in the cognitive areas of abstract, systematic, evaluative, and collaborative thinking, and they are aware of the affective dimension of emotional intelligence and its dialectical relationship to creative and critical thought. They endeavor to create a curriculum that helps their students subject what they think they know to critical scrutiny in the interest of achieving the best results, the best decisions, the best thinking, and the best solutions to human problems. They understand that the real curriculum is life, and they work with multiple intelligences and offer varied and interdisciplinary opportunities for students to develop these intelligences. Finally, critical and creative teachers are concerned with all of the above as it affects good judgment, innovation, cooperative living, collaborative problem-solving, and developing a more productive and happier life—not simply making better machines or consumer products.

The following are just examples of what *some* critical and creative thinking standards might look like; they are in no way meant to be definitive or universal. As you will see, they identify what we want our students to do, and so they can be assessed only through performance or portfolio evaluation. They are not offered as a checklist or processes that must be taught in isolation, but as the type of mental processes that critical thinking might employ when solving problems and making decisions.

- Evaluate data and evidence
- Compare and contrast similarities and differences
- Explore actions, decisions, and conclusions of oneself and others
- Evaluate actions, decisions, and solutions of oneself and others
- Clarify generalizations
- Reason inductively, from the particular to the abstract
- Avoid overgeneralizations and oversimplifications
- Recognize the logic of points of view
- Recognize arguments, analyze them, and then evaluate them
- Distinguish between relevant and irrelevant information and data
- Identify sources of information and develop criteria for determining the reliability of these sources
- Develop one's own viewpoint, perspective, and outlook
- Think about one's thinking in the interest of transformative metacognition
- Listen critically to others
- Transfer abstract insights to everyday life
- Reason interdisciplinarily and synthesize subject-matter insights
- Recognize decisions, analyze them, and evaluate them
- Identify, develop, evaluate, and apply criteria to ideas, products, and performances of oneself and others
- Make informed decisions by examining options and anticipating consequences of actions

- Recognize and describe systems and their interdependence
- Work effectively in groups to accomplish goals
- Reason historically, conceiving of places, times, and conditions different from one's own
- Recognize the influence of diverse cultural perspectives on human thought and behavior
- Develop independent thinking and an investigative orientation
- Develop intellectual empathy
- Develop intellectual humility and an insight into egocentric thinking
- Develop intellectual imagination and curiosity
- Develop intellectual efficacy and confidence in one's reasoning abilities
- Develop a tolerance for ambiguity
- Develop intellectual perseverance and discipline when confronting obstacles and problems
- Develop intellectual courage
- Develop intellectual civility when dialoguing
- Develop intellectual integrity

Discussing, questioning, and dialoguing about these and other critical thinking standards would serve to recast the debate that has defined teaching as simply the transmission of information and ideas. Such a discussion would embrace and call attention to the fact that the act of education is at once an act of communication and dialogue in search of significance and meaning. Critical thinking standards would allow teachers to engage in teaching as an act of love and creativity—as opposed to an act of instrumentality and technological control. And of course, since critical thinking develops and builds character, these standards would help students manage their lives as opposed to having them managed, to author their existence as opposed to having their existence authored, and to govern their personal and social behavior as opposed to having their behavior governed.

These critical thinking *processes* (I use this term to differentiate between these ideas as *processes* and these ideas as *skills*), can be seen as distinctly different from *basic skills*. Both are important and both should be tested. Yet many teachers have never thought about the difference between basic skills and critical thinking processes. Understanding that these processes are uniquely different from what we are told are basic skills is the first step in understanding how they might be taught and assessed. It affords us a starting place from which to dialogue, discuss, and question the development of more authentic standards and assessment.

Developing a Public Language of Literacy and Tools for Assessment

In teaching for thinking, we are not only interested in how many answers students know, but also in knowing how to behave when they don't know. Intelligent behavior is performed in response to questions and problems the answers to which are not immediately known. We are interested in observing how students

produce knowledge rather than how they merely reproduce knowledge. The critical attribute of intelligent human beings is not only having information, but knowing how to act on it.

—Art Costa

Much has been written within the last ten years about authentic changes in critical thinking assessment tools and techniques—from the use of portfolio assessment to performance assessment. And there is no doubt that some of the most exciting work in authentic assessment today is coming from those who are using it and will use it—classroom teachers. Authentic assessment tools such as reading portfolios, video portfolios, journals, and thinking and listening portfolios can all call upon students to assess their own thinking and the work they are doing while providing the classroom teacher with a documented method for authentic assessment of critical thinking that meets the needs of parents and the public, who correctly search for some accountability in education. This has the dual benefit of allowing students to take responsibility for their learning while at the same time freeing the teacher to become a facilitator of thinking as opposed to a routinized clerk. Teachers who utilize authentic assessment techniques to assess critical thinking know that they are based upon *authentic learning* that asks students to probe the cognitive and affective dimensions of how they come to understand what they think they understand. Furthermore, with authentic assessment, teachers, students, and parents can observe student performance and draw conclusions about their literacy from these performances, thereby enabling them to work with students in the interest of continual self-improvement. This process can vary from observing the range of reading and writing skills that students employ to ascertaining what these performances show us as teachers. By observing students' strategies and what they do when they read and write, for example, teachers can deduce students' attitudes and dispositions and help them develop emotional and affective dimensions of intelligence. Authentic assessment also allows educators to continually improve their own instructional techniques, to collaborate as intellectuals as they find out more about how students learn, to integrate this knowledge and attempt to develop their capacity to think critically about their curriculum and how they might work with students to develop knowledge.

How we assess students and what we assess virtually drives, shapes, and influences what happens within the classroom. Assessment shapes the curriculum as much as the curriculum shapes assessment. Understanding the underlying assumptions and inferences that guide the current conservative approach to assessment and contrasting this with an *active literacy*, or postformalist approach to learning and teaching, is essential for increasing our understanding of how students learn. What's more, we must make our postformal positions on assessment understandable and accessible to parents and

the community. We must feel compelled to denude the mythology employed by the elite merchants of prevarication and work with parents to construct a vision of what it means to be *actively literate* and educated in today's society—what it means to think critically. This means that the education of children develops simultaneously with the education of parents and communities, as we collaboratively learn to forge a partnership and dialogue within our communities regarding intelligence and learning. We must look for venues to discuss new ideas, whether it is in our unions, our churches, mosques, or temples, at the grocery store, or in the mall. We can never allow the mythology of market-driven forces to script educational theatre. Instead we must struggle to pierce the veil of social and political mendacity and proclaim the conservative standards debate for what it really is—a mythology, a prescription and recipe that is not in the interests of either ourselves or our children.

We also must document students' performances and provide open, public meetings and forums where parents and students are invited to engage in a dialogue with their children about learning and assessment. This will assist parents in understanding what it truly means to be intelligent and how to provide for their children's intellectual growth outside of school. All of this will be essential if we are to rupture the hegemony of the standard mythology and institutionalize authentic procedures for student assessment.

Finally, it is obvious that one cannot assess what one does not understand. We should not take for granted that teachers themselves have been exposed to progressive dialogues regarding intelligence, critical thinking, constructivism, multiple theories of education, or postformalist principles regarding learning, motivation, and teaching. In fact, in light of the disconsolate state of teacher education programs and the demagogic media-driven debate regarding assessment, we probably should assume that the opposite is true.

Similarly, as stated earlier, students must be taught how to assess their own thinking and the thinking of others so they can become life-long learners. They must be motivated to see the logic of what they are studying and to see the relevance of education to their daily lives. Helping students find relevant significance and meaning within a community of learning will not only help them become lifelong learners but will also enable them to monitor their thinking in the interests of self-correction and critical reflection. Students and teachers must understand that *assessing is learning* and *learning is assessing*—that these are not separate and distinct activities, as they have been characterized, but lifelong, ongoing activities.

The table at right can be used to compare and contrast what I refer to as *inauthentic standards assessment* with *authentic standards assessment*.

The implications of these different theories of literacy on assessment, teaching, learning, curriculum devel-

TABLE 1
Comparison of Inauthentic Standards and
Assessment with Authentic Standards and Assessment

Inauthentic Standards and Assessment	Authentic Standards and Assessment
1. Based on isolated items of learning that can be counted and measured	1. Based on orchestrating items of learning for a particular purpose or goal, or to solve a particular problem
2. Focuses on "getting the right answer"	2. Focuses on not just getting the right answer but on uncovering the processes one goes through to get answers
3. Provides a "quick fix" numerical understanding	3. Long-term. Based on insights about what it means to learn and teach
4. Focuses on the trivial aspects of learning	4. Focuses on assessing the broad aspects of literacy, or "the whole person"
5. Skill driven	5. Based on testing skills in the context of critical thinking and problem solving
6. Looks at the surface features of students' performances	6. Looks at the totality of students' performances and serves as a guide for future growth
7. Abstracted and divorced from the real lives of students	7. Relevant and stimulating, motivating students to question and discover
8. Provides misleading information and direction for further learning and teaching	8. Provides complete information that helps to guide and strengthen the curriculum and to provide direction for both teachers and students for further learning and teaching
9. Noninterdisciplinary, failing to help students transfer insights into their own lives	9. Interdisciplinary, helping students to transfer subject insights into their own lives while enabling them to see how disciplines, subjects, and what they are learning relate to each other
10. Provides no understanding for students, teachers, or parents of what it means to be intelligent or educated in today's society	10. Serves as a guide for parents, teachers, and students as to the meaning of intelligence and how intelligence can be cultivated, fostered, and learned
11. Of little use to students, providing them with no direction or standards by which to develop the art of self-assessment	11. Describes literacy as self-assessment and provides students with a profile of their work so that they might develop standards by which to improve their thinking through transformative metacognition

(continues)

TABLE 1 *(continued)*

Inauthentic Standards and Assessment	*Authentic Standards and Assessment*
12. Fails to account for or assess emotional intelligence or attitudes and dispositions of learning	12. Understands that attitudes and dispositions of learning and emotional intelligence are synergistically related to what it means to be intelligent
13. Serves to control teachers and students, what they teach, and what they think	13. Helps teachers and students control themselves, what they teach, and what they think
14. Tests disciplines	14. Tests disciplined thinking
15. Fails to account for differences in race, gender, and socioeconomic class and refuses to acknowledge the social construction of knowledge	15. Understands that knowledge is socially constructed and conceives of differences as positive
16. Nondialogical	16. Based on communication and dialogue
17. Looks at students as objects or raw materials to be produced and worked on	17. Looks at students as subjects in the process of identity formation
18. Conceives of education as a result only	18. Conceives of education as a process that produces results

opment, and praxis are paramount and cannot be ignored. A reading and writing social studies classroom, for example, that labors under the paradigm of inauthentic assessment or *passive literacy* might ask students to read short texts, answer simple questions, select from multiple-choice answers, and supply missing words in close exercises. The implications of passive literacy are explicit: teachers spend less time on subjects not tested, lecture to students rather than dialogue with them, and are unwilling to stray from the mandated curricula for fear of being humiliated, penalized, and ostracized. As such, passive literacy builds on the model of teacher as all-knowing subject and student as spectator.

In those classrooms working under a paradigm of authentic assessment or *active literacy*, students might be asked to read texts with depth and interest, thereby seeking to understand points of view and assumptions, and to see how people arrive at conclusions and decide to act in a world with others. Students would be animated to problematize their learning and create and answer complex questions that call on multiple intelligences and a host of cognitive and affective abilities in the service of creatively accomplishing a project, or recognizing and solving relevant real-life problems; they would learn to become *participants* in their learning. Multiple choice or limited-response examinations might not

be abandoned, but their use would be minimal and only applied to test students' understanding of important basic skills, while performance and portfolio assessment would be recruited in the service of assessing the development of critical and creative thinking and communication processes, along with students' actual application of knowledge and basic skills.

Conclusion

A school should not be a preparation for life. A school should be life.

—Elbert Hubbard

From a postformal perspective, what all this means is clear: we must begin to concentrate our efforts on a *public language of literacy*—authentic standards, intellectual diversity, and critical thinking assessment that will enable us to provide a vision of what it means to be actively literate as opposed to passively literate. We must speak to issues of accountability and responsibility in education, but from a postformal point of view. It is important to recognize that institutional and societal support must be cultivated and nurtured in order to create an environment for the achievement of learner outcomes and goals; the current universal standards debate must be seen as inauthentic and antithetical to human development.

Once again, this specifically means that we as educators must come to understand that the debate regarding assessment and standards as it is defined in the popular media is mythological, jingoistic, propagandistic, and disingenuous; that it does little to foster a healthy, critical discourse regarding student achievement; that it is political. We must reform this debate with a new language of assessment and learning, one tied to what it means to be a human being in search of liberation and subjective emancipation. The standards we adopt should help students become global citizens, not simply global producers and consumers. Standards and assessments should have as their purpose the promotion of healthy individual and social growth through critical reflection. And they must truly offer opportunities to all students, regardless of class, race, culture, or gender.

Societal support and a realignment of economic and cultural priorities and reality would also serve as a means for accomplishing educational goals and commitments. This would mean that the debate regarding education would need to confront objective reality—such as issues of racial, sexual, educational, and socioeconomic equity—directly and honestly, to embrace the necessity for an acute paradigm shift toward general societal humanistic values and changes in forums from the classroom to the workplace, from the family to the state. It would be perfidious to propose that equity can exist within the institutions of education while economic and social inequality pervades major societal institutions as a whole.

For this reason, teachers as intellectuals must become teachers as social activists, collaborating and reoxygen-

ating their unions with vision and struggling for a social commitment to make children the top priority, to preserve and strengthen public education, to provide adequate nutrition and health care to families, to furnish safe schools and neighborhoods, to ensure the development and distribution of fair and adequate funding for public education, to equalize opportunity, and to support local decision making by governing bodies. As society and its institutions forge a partnership for critical thinking and educational opportunities for all students, the primary indicator of our effectiveness will be our ability to achieve our greatest goal: the education of all our nation's children and the creation of a loving world of authentic agency and caring human beings.

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RESPONDING TO STANDARDS

The Professor of Education's Legacy and Responsibility

William H. Schubert and Thomas P. Thomas

It is our contention that a principal responsibility of professors of education is to create possibilities for the future, to question assumptions, to imagine innovative alternatives and their consequences, to see things as they might be otherwise, to make the strange familiar and the familiar strange, and to keep matters of goodness and justice in the foreground of consideration. The works of eminent educational philosophers such as John Dewey and Maxine Greene are replete with these values. In contrast, the current enthusiasm (mania?) for standards at all levels of education is promoted as a proposal for responsible education, with standards constructed primarily from a narrow historical tradition and faithfulness to an institutional status quo. While we can easily accommodate these standards as intelligent consultants and collaborators in creating a curriculum that is relevant to the lives of learners, we cannot abide its pretentious usurpation as the dominant or even exclusive voice in curriculum construction or teacher education. Standards can and have generated anxiety and exasperation; they do not evoke inspiration or aspirations.

Standards are more prevalent than ever before; there are standards for teachers, for teacher candidates, for students, for administrators, for counselors. Forerunners of standards for teachers and students have been seen before, especially in the post-Sputnik curriculum reform of the 1950s and 1960s, the behavioral objectives movement of the 1960s and 1970s, and the special education emphasis on individual educational plans (IEPs) from the 1980s to present (see Schubert & Lopez Schubert, 1981; Schubert, 1986). Nevertheless, the governmental emphasis on standards is unprecedented at both the federal and state level. Thanks to GOALS 2000 funding, nearly every state has developed statewide goals and tests designed to verify the extent to which standards have been acquired and implemented. Professional associations

in a remarkable thirteen different disciplines have designed elaborate statements of standards, most federally funded as well.

The prophet of the movement, the National Council for Teachers of Mathematics, has already approved a second edition of their influential standards. Some school districts have followed suit in developing their own standards with an eye on compatibility and consistency with state and national standards. The Association for Supervision and Curriculum Development (ASCD) has published books summarizing these many standards (e.g., Kendall & Marzano, 1997). Moreover, producers of major commercial achievement tests have adopted national academic standards to blueprint their assessment instruments. These tests, combined with state testing, are often used to compare and rank individual teachers, schools, districts, states, and real estate. This constitutes another kind of standard that the public has come to accept as valid. Such misapplications of standardized (a term that now has *two* meanings) tests have overstepped the bounds of merely providing information that can be used as a basis for curricular and instructional improvement.

Certainly many of these efforts are well intended. Most of the so-called blue ribbon commissions, the special agencies, and particularly the professional agencies claim to be offering guidelines, possibilities to ponder, and even ideas to inspire the work of those who daily influence students. Carefully constructed assessments that offer useful information for personal and program development can be helpful to educators. Something adverse (even perverse) happens, however, as statements of standards move from the drawing boards to the school boards and into the lives of teachers and students. They become *the law*, policies to abide by, mandates that must be implemented, and tests that confer or deny status.

It is not unusual for schools, especially those regularly receiving low test scores (schools that often are located in economically impoverished environments), to feel pressured to direct nearly all of their educational resources and efforts toward raising test scores. Colleges of education are themselves giving increased attention to state teacher certification examinations; recent federal policy mandates that their teacher candidate scores on state certification tests be published for ranking. The transformation that occurs when guidelines become mandates was well depicted by Sir Isaiah Berlin when he said: "The history of thought and culture is . . . a changing pattern of great liberating ideas which inevitably turn into suffocating straitjackets and so stimulate their own destruction" (Berlin, 1980, p. 159).

Heralded by their promoters as liberating possibilities or heuristic devices (e.g., Haertel, 1997), standards have been passed along with such force of requirement as to repress the creativity of teachers, students, and professors of education. The achievement of standards that can be demonstrated by a large-scale test score has

become a kind of "bottom line" (to use corporate parlance) for judging all aspects of the educational system. The consequences for students is that a hidden curriculum emerges that makes the test score and the credential more important than genuine learning and human growth.

In past eras of such mandates, there was almost always leeway for school district and teacher interpretation—at least a modicum of faith that local authorities could imaginatively tailor guidelines from the conference rooms of experts and policy makers to the idiosyncrasies and special needs or interests of localities. In *Behind the Classroom Door*, John Goodlad, Frances Klein, and associates (1970) noted, for instance, that the rhetoric of post-Sputnik curriculum reform was present at the surface structure of school-public relations, but the deep structure of classroom life (when the door was closed) represented what teachers really wanted to do. Assessment was not as stringent then as today; there was little if any formative evaluation to indicate whether implementation of reform projects was on track, and in the end, summative evaluation measures were rarely tied explicitly to goals. Some would argue that this was a fault of the reform; reformers failed to *make sure* that practitioners did the bidding of outside authorities. Diane Ravitch, for example, argues that standards must "precede and be linked to student tests" if policy makers want the standards to be taken seriously (Ravitch, 1995, p. 24). Others might argue, as is our tendency, that less stringent connections between standards or goals, implementation, and outcome evaluation gave local administrators and teachers opportunity to apply their craft knowledge to students whose particular lives could not be known by outside authorities.

The current failure to assume that teachers can creatively make good decisions in light of their knowledge of the extant situations in which they live and work has a controlling tone that lacks faith in others, especially subordinates. Lee Shulman (1986) cites the novelist John Fowles for insight into this lack of faith. In Fowles's novel *Daniel Martin*, a political leader is asked why we have governments and laws. He replies that it is to prevent bad dreams about what humans would do without them. Shulman applies this to educational policy, noting that we make and enforce standards to prevent our bad dreams about what teachers and local school administrators will do if we do not control them.

When standards are tied to high-stakes large-scale assessment, a top-down controlling mechanism is put in place that can restrict, indeed subvert, grassroots intelligence (except perhaps the intelligence involved in trying to design motivational and instructional strategies for student attainment of these often unengaging standards). The standards and their large-scale assessments can become autocratic impositions that discourage democratic involvement. Ironically, democratic citizenship is often claimed to be one of the ultimate ends of these stan-

dards. Standards advocates have so cluttered the educational landscape with required competencies that they appear to assume that the experts who are removed from educational situations and do not know the teachers, children, and environments in those situations are in the best position to say what is needed there. Thus, they offer the same prescription for all learners—a strange notion that would be intolerable to patients in a medical doctor's office. Susan Ohanian (1999) argues convincingly that one size clearly does not fit all.

The content and competency standards before us today *are* the new curriculum, a curriculum mostly developed by disciplinary learned societies and translated by state and local policy makers. These groups, along with test makers, are more often grounded in psychometrics, not in curriculum studies, and stand ready to provide answers to our fundamental and complex curriculum questions: What is worth knowing, experiencing, needing, doing, being, becoming, sharing, and contributing as individuals and as societies? Implicit in such a complicated question are issues of what it means to live a good and worthwhile life, what a just and fair society is like, and how human beings should interact with their natural environment.

These questions are much greater than mere matters of how to be certified for the next level of schooling or for being a teacher or educational leader. Too, they are greater than the political and economic worry of whether we have the competitive edge in comparison with other nations. Indeed, the basic curriculum questions embrace the whole of life that *is* the fundamental and pervasive educator of us all (see Foshay, 2000), which includes everything that influences the intellectual, emotional, social, physical, aesthetic, and transcendental purposes of life. Surely, state goals and assessments and standardized tests deal with only a minute proportion of the aspects of life that A. W. Foshay set forth in his *curriculum matrix*.

What Noted Curricularists of the Past Say that Pertains to Standards

We have noted above that standards are constructed from traditional past academic practices and perceived contemporary demands. Curriculum scholars of the past who do not share the curriculum orientations currently in favor in public policy have much to say; they provide a cautionary tranquilizer for the rampant acceptance and implementation of the standards movement as the next "quick fix" for education and especially curriculum. We mention a few who, in our view, are among the most insightful and whose work helps us form salient questions about the standards phenomenon and its potential controlling presence on the lives of students and teachers.

John Dewey

Whole treatises continue to be written on John Dewey's proposal for educa-

tional reform (e.g., Simpson & Jackson, 1997). S. M. Fishman and L. McCarthy (1998) have reflected on his contemporary relevance to classroom practice, and William Schubert (2000) has written a chapter on Dewey's philosophy as a basis for more just educational communities. Deeply embedded in Dewey's philosophy of education (see Dewey, 1902 and 1916) is his progressive organization of a curriculum that begins with the *psychological*—the needs, interests, and concerns of students—and moves to the *logical*—public knowledge in diverse disciplines and personal knowledge from lived experience that are effective for deliberation on issues of social significance.

Since standards are tied to Dewey's concept of the *logical*, the standards movement counteracts the main tenet of progressive education, that is, to initiate any educational experience in responding to the concerns and interests of students. The problems, relationships, and mysteries that learners ponder are the basis for introducing them to knowledge and skills in existing subject matter areas, facilitated by an integrated curriculum that pertains directly to student growth (see Beane, 1997). To leave students and their concerns out of the curriculum is akin to Shakespeare writing *Hamlet* and omitting the Prince of Denmark!

In an engaging but little-known piece in the *New York Times*, Dewey elucidated his position on standards and purposes in a fictional conversation with members of a utopian society that is far advanced in its educational practices. Dewey wrote:

> Naturally I inquired what were the purposes . . . of activities carried on. . . . At first nothing puzzled me more than the fact that my inquiry after objectives was not at all understood, for the whole concept of the school, of teachers and pupils and lessons, had so completely disappeared that when I asked after the special objectives . . . , my Utopian friend thought I was asking why children should live at all, and therefore they did not take my question seriously. After I made them understand what I meant, my question was dismissed with the remark that since children were alive and growing, "of course, we, as the Utopians, try to make their lives worth while to them; of course, we try to see that they really do grow, that they really develop." (Boydston, 1989, pp. 137–138)

Within a controlling framework of content standards, where can we hear the voice of individual students and small communities of learners? How can student interests and concerns become the basis for their genuine growth and development, instead of the current conception that assumes students are defective adults in need of adult experts whose contrived standards can fix them?

George S. Counts

In 1932, George S. Counts wrote the landmark social reconstructionist book, *Dare the School Build a New Social Order?* Here he asked by implication: what kind of social order is most fair and just, and how can school cur-

ricula and teachers contribute to the reconstruction of this order? Given that state standards are geared to perpetuate the existing social order and its value system, we might take his question further to ask, how can a new social order be advanced by states that are fashioned out of the dominant values of the existing social order? Are Counts's reconstructionist ideas, which build on Dewey's reconstructionist orientation (see Dewey, 1948), a warranted hope or an unapproachable ideal?

Carter G. Woodson

In *The Mis-education of the Negro* (1933), Carter G. Woodson anticipated much of today's critical reconstructionist message to standard bearers (see Schubert, 1996 and 1997). In the preface of this work, Woodson starkly depicts how the learning of African Americans perpetuated the enslavement of their mental, emotional, and social lives. He observed, "The problem of holding the Negro down, therefore, is easily solved. When you control a man's thinking you do not have to worry about his actions. You do not have to tell him not to stand here or go yonder. He will find his 'proper place' and will stay in it. You do not need to send him to the back door. He will go without being told. In fact, if there is no back door, he will cut one for his special benefit. His education makes it necessary" (Woodson, 1933, p. xiii).

Given this insight, we might ask, to what extent do content standards reenforce social class and privilege? When one set of standards is applied for all, regardless of their origins, treatment, and circumstances, do they then become a measuring tool of status?

Harold Rugg

Had there been statements of standards, state goals, and today's industry for achievement testing in the first half of the twentieth century, Harold Rugg's textbooks would probably have not been published. If we add the controlling interests that direct state adoption policies in Texas and California, it is certain that his textbooks would not have been used in the public school. Rugg's social studies texts, which sold in the millions, eventually were smothered by critics who charged his social inquiry approach was un-American. These texts criticized injustice and the competitive ethos in America, encouraging students to be democratically oriented critical thinkers.

With today's prevalence of textbooks driven by state standards and curriculum frameworks, how possible would it be to have alternative conceptions of the curriculum rise to this level of influence? After publishing *That Men May Understand* (1941), in which Rugg explained the trials and tribulations of this effort to depart from the mainstream, he devoted much of the rest of his career to the study of human imagination from diverse cultural standpoints. This inquiry resulted in the posthumous publication of *Imagination* in 1963 with

the assistance of philosopher of education Kenneth Benne. Rugg's interests were consistently focused on the projecting of possibilities rather than the reification of knowledge. What possibilities do content standards invite?

Caroline Pratt

What happens when teachers learn from their students? In the first half of the twentieth century, Caroline Pratt, a dedicated early childhood teacher and later a professor, titled a book, *I Learn from Children* (1948). (Putting this in the parlance of today, William Ayers [1993] admonishes teachers to be students of their students.) Pratt asks that we try to fit the school to the child, not mold the child to the school. To truly see children as having something to teach us, as grown-ups and educators, is not to see children as defective adults. Instead of seeing our work as deciding what is good for children to make them better, how can we help them form the emergent ideas and concepts about life that are within them? Standards as mechanisms of control would not seem appropriate to this kind of philosophy.

Harold Benjamin

A satirist of education, Harold Benjamin wrote *The Saber-Tooth Curriculum* (1939) under the pseudonym of J. Abner Peddiwell. In this work, an old professor of education lectures a young teacher-to-be in a bar in Tijuana on what he had learned from an extended sabbatical leave, during which he studied educational systems of prehistoric men and women. He revealed to his young tutee that among key courses in the prehistoric curriculum were *Saber-Tooth Tiger Chasing with Fire* and *Fish Grabbing with the Bare Hands.* These courses served an immediate practical value. When glaciers arrived, however, the environmental conditions changed, making these skills obsolete. Nevertheless, many of the educational standards-makers urged that these two great time-honored curricular areas continue to be taught, arguing that they helped build the mind and character! This story might lead us to question whether learned societies have ensured through their standards the perpetuation of their discipline—not because all standards they promote have relevance to contemporary communities of learning but rather because they perpetuate academic custom.

In a 1949 book, *The Cultivation of Idiosyncrasy*, Benjamin offered a captivating story called "The Animal School." In this school, all students, for their own good, were taught a "required curriculum. This was a school of no nonsense. It was a good, liberal educational institution. It gave broad general training—and instruction—and education too" (Benjamin, 1949, p. 1). Each of the many kinds of animals in the forest had their strengths, but they also had their shortcomings. For example, the eagle was great in jumping and excelled in flying classes but saw no relevance in climbing classes; the squirrel was a wonderful climber but a poor flyer. The prodi-

gious strengths that each kind of animal possessed, their beautiful idiosyncrasies, were overshadowed by the required standards that each animal had to accomplish in many areas. Old Man Coyote was wise enough to see the leveling effect that this standard curriculum was having on learning and he offered the following advice:

> "These schools start with the things that birds and animals do—or even more often what they did some time ago," explained Old Man Coyote. "Then the teachers hammer these doings—or as much of them as they can handle and as they think high toned enough—into schoolings, courses, curriculums, and subjects. Then they hammered the pups into the schoolings. It's a rough and dopey process, and the teachers have had to invent good explanations to defend it. Discipline, culture, systematic training—things like that—are what the teachers use for this purpose." (Benjamin, 1949, p. 7)

Coyote's alternative is deceptively simple: "Turn it around," said Old Man Coyote. "Start with the pups. See what the pups do. Then see what the school can do for the pups. Then see what the pups and school together can do for all the creatures in the woods. Simple—forwards instead of backwards—right end to instead of wrong end to" (Benjamin, 1949, p. 7). Could this alternative work in schools today?

Alice Miel

A pioneer of action research by teachers during the 1940s and 1950s, Alice Miel wrote of cooperative learning (1952) many years before its contemporary revival. Students working collaboratively on ill-structured problems have received considerable positive attention today, unfortunately often only as an instructional strategy for higher achievement on assessment instruments. Time and again we see teachers help students realize that cooperative learning is important only to have to contradict the message with the arrival of individual large-scale assessments, where we work only as individuals and interaction with others becomes a moral violation. Teachers announce that these events are *really* important, so important as to contradict the admonition to cooperate.

Miel also encouraged teachers to work together to build schools through a social process (see her 1946 book *Changing the Curriculum: A Social Process*). With her colleagues, Miel even encouraged doctoral students to work together to develop dissertation research! If on the one hand students are encouraged to work together on projects, yet on the other hand the events that mean the most for their future are not cooperative but competitive, what message do they receive? Is it the message that what really matters most is not of their making; instead, their challenge is to demonstrate compliance?

Stephen M. Corey

Like Miel a faculty member at Teachers College, Columbia University, in the 1940s and 1950s, Stephen Max Corey called for *Action Research to Im-*

prove School Practices (1953). For both Corey and Miel, the criticism of standards is simple and direct: If teachers are supposed to work together to improve the curriculum, and if this improvement includes reconstructing the standards, how can educators succeed in their craft if the standards are not subject to their influence?

Thomas Hopkins

Author of one of the first book-length treatments of curricular integration, Hopkins combined integration (1937) with democratic interaction (1941) and elaborated on the focus of both with his concept of "the emergent self" (1954) as the most fundamental educational project. To help students pursue the project of self-development, he argued, it is essential to know them well, to help them set forth standards unique to their own emergence and growth. Consistently focused on the development of the individual, Hopkins believed that four convictions (a different approach to standards) constitute the work of the democratic school. These beliefs are:

- All human beings are accepted and respected as ends in themselves, not as means to ends fixed by others to promote their favored institution or fixed system of life.
- Meaningful education assists the individual in the discovery and development of his or her gifts and capacities.
- The potential capacity is released and developed by providing experiences that are responsive to the needs that develop in the life of the learner. The educator must place study of the learner at the forefront of curriculum development.
- This process works to improve the self-acceptance of the learner, not for some external social standard. (Hopkins, 1954)

How can this vision of schooling be effected from afar by policy makers who do not know the students as individuals?

Harold Alberty

Following in the footsteps of his mentor, renowned progressive philosopher of education, Boyd H. Bode (Bode, 1938), Harold Alberty articulated a conception of core curriculum that has similarities with that of Hopkins, although Alberty's work was primarily with the high school curriculum. Alberty presented high school study as a progression of group study units on relevant social issues. The development of the core curriculum was from local immediate problems of contemporary life to broader community problems. The secondary school education culminated with the examination of contemporary socioeconomic issues.

Alberty recognized that most high schools were constructed around traditional academic disciplines (a reminder of how *very* different schools were in 1947). He offered a transition process involving six types of curriculum design, to move from the status quo cur-

riculum to a social core curriculum that integrated disciplinary knowledge around controversial issues deliberated on in democratic discussion toward a majority decision (Alberty, 1947). He pointed out that in Type 6, "the core consists of broad units of work, or activities, planned by the teacher and the students in terms of needs as perceived by the group. No basic curriculum structure is set up." His Type 5 (slightly less radical) "consists of broad, pre-planned problem areas, from which are selected learning experiences in terms of the psycho-biological and societal needs, problems, and interests of students" (Alberty, 1947, p. 119). If either a Type 5 or 6 core curriculum were enacted today, what contemporary problems and purposes would emerge? What then would be the role for externally devised academic standards? Could they assume any role beyond advising the curriculum development process?

Theodore Brameld

Theodore Brameld amplified the social reconstructionist perspective initiated by Dewey and developed by Counts and Rugg, assuming a more structured political and global posture. Unabashed in his promotion of a new economic order, Brameld identified education as one of several endeavors for building new social and global relationships. He wrote, "Education becomes a constructive force only when it fuses with the economic, political, socially creative forces of the culture—when it is the very stuff of the growing struggling life of every large and small community" (Brameld, 1960, p. 178).

In defending a value base on which to construct a reconstructionist education, Brameld arrived at a different conception of standards for education. Rather than thinking of standards as the knowledge and skills to be attained in academic disciplines, Brameld encouraged educators to think of the standards of human living. He suggested twelve basic needs that are inherent in the human condition:

- sufficient nourishment
- adequate dress
- shelter and privacy
- sexual expression
- physiological and mental health
- steady work and income
- companionship, mutual devotion, and belongingness
- recognition, appreciation, status
- novelty and recreation
- literacy and information
- sharing participation
- order, direction, and meaning (Brameld, 1947, pp. 10–11)

Brameld encouraged educators to place these human standards before the learners and ask them to consider social options for realizing these standards for all members of the society and, extensively, all peoples of the world. The learning community, provided guidance and resources by adults, is asked to come to consensus and act on their deliberation.

With one or more of the social standards at the center of investiga-

tion, Brameld suggested a "wheel curriculum" be employed for senior high school and the first two years of college. The hub of the wheel is group consideration of a social issue, based on one or more of the above basic human needs, which require social resolution. The spokes are groups of students concentrating on different aspects of the issue who come together periodically to share research and proposals (Brameld, 1956, pp. 179–192). Disciplinary knowledge (the arts, communication, sciences, mathematics, and the social sciences) are integrated into the processes of inquiry, deliberation, and action.

What would schools look like if they replaced the academic standards with standards for human dignity as the driving force of education?

Ralph W. Tyler

Ralph Tyler is best known in the curriculum field for his rationale for curriculum development (1949), which consists of questions about four salient topics (purposes, learning experiences, organization, and evaluation). He also insisted that curriculum goals be placed against two intellectual screens, the psychological/developmental and the philosophic. When current standards for teacher performance refer to the role of the teacher in curriculum development, they are uniform in their selective use of the Tyler rationale. They dismiss the philosophical screen as an important process in thinking through what students should know, share, and become.

Another point that is seldom emphasized is Tyler's insistence that curriculum and instruction should pertain to the active social experience of the learner. In order to relate to this experience, educators need to know about learning that occurs in the nonschool lives of their students. In the late 1970s, when asked to reflect on what he might add to his rationale, Tyler (1977) said he would try to emphasize more fully the nonschool dimensions of student lives. In this sense, he was saying that to develop effective curricula, educators must know students well. This pertains to students in particular as individuals. How would standards be transformed if they were opened to philosophic conversations and to the lives of the learners?

Joseph J. Schwab

In the late 1960s, Schwab (1969) argued that curriculum inquiry suffered from being too theoretic and should be practical in character. Practical inquiry (drawing from both Aristotelian and Deweyan roots) should derive its problems from difficulties in states of affairs, not generalized states of mind as in theoretic inquiry. Practical inquiry should seek situationally specific knowledge, not the will-o'-the-wisp of lawlike knowledge. Practical inquiry should proceed through interaction with and embeddedness in the lived context being studied, not merely through detached induction and deduction about it. Finally, the end of practical inquiry should not be knowl-

edge *qua* knowledge, rather it should be knowledge that informs morally defensible decision and action.

Schwab (1971) called for eclectic arts that match theoretic knowledge to extant situations, tailoring and adapting such knowledge to situations—especially knowledge derived from a repertoire of experience in comparable situations to enable the anticipatory generation of alternatives. Elaborating still more, Schwab (1973) called for a curriculum that is the dynamic interaction of four commonplaces: teachers, learners, subject matter, and milieu (or environment). He emphasized that the most important curriculum work is to continuously monitor and adapt to changes in the relationships among these commonplaces (Schwab, 1983).

The kind of focus on the situation that Schwab advocated necessitates substantial curriculum decision making at the situational level. Thus, it clearly and substantially diminishes the power and value of generic policy and standards. Should curriculum creation be primarily top-down, grassroots, or a continual work in progress based on the thoughtful consideration of all commonplaces in education?

Phillip Phenix

For those readers who have grown impatient with the persistent criticisms of a traditional academic disciplinary curriculum, Philip Phenix would appear to provide comfort. Phenix divided the "various possibilities of significant experience" into six realms of meaning. Two of the realms—the *symbolic*, which relates to language use and mathematics, and the *empiric*, the method and knowledge of scientific inquiry (encompassing both the social and physical sciences)—are strongly represented in the conventional school curriculum. A third realm, *aesthetics*, including the languages of music, the visual arts, and literature, has a less prominent role in the schools but is also represented in the standards movement.

The fourth realm, *synoetics*, the lived reality of the individual either in personal existence or in relations, is seldom responded to in disciplinary content standards. The fifth realm, *ethics*, "is based on free, responsible, deliberate decision" (Phenix, 1964, p. 7). As described by Phenix, this language is not represented either in the standards movement or in conventional schooling. The sixth realm, *synoptics*, refers to integrative languages, the languages of history (understood as cultural narrative), religion, and philosophy. This realm combines the other realms of meaning into an ever developing statement of the person's understanding of the nature of existence. Synoetics, ethics, and synoptics are seldom represented in the conventional academic disciplinary standards.

Phenix contended that the education of young people in the United States lacked direction because those realms that develop personal expression and understanding, purpose, commitment, and integrity are conspicuously absent. This absence establishes a curriculum that serves a

"democracy of desire," a directing of society toward the ends of accommodation and self-gratification. The academic disciplines are mere diversion if the larger questions of human purpose are not given voice. Phenix invited the educational community to take seriously the profound responsibility of its profession. Educators are to transform people who might otherwise be inclined to meet only their own limited interests and distractions to participate in a human adventure committed to drawing meaning from life, considering visions of what is worth living for. He suggested:

> Whatever its visible forms, the important goal is that redirecting of life from finite attachment and acquisitiveness to the active love of the good. To accomplish this change is the supreme end of all teaching and learning. All increase in knowledge and skill that confirm one in his (or her) lust for autonomy is loss, not gain. From this standpoint, much of what has been taught and learned in present day education misses the mark. Studies that increase the power to exploit the earth and other people, that arm one for the struggle for privilege, that prepare one to pursue his advantage more successfully, destroy rather than edify a person. The sovereign test of all education is whether or not it is religious, that is, whether or not it tends towards conversion of the person to unconditional commitment to right and truth. (Phenix, 1961, p. 243)

What would happen to the traditional academic standards if they confronted the fuller realms of meaning that Phenix suggested?

James B. Macdonald

Building from Ivan Illich's (1972) notion of de-schooling society, James Macdonald, B. Wolfson, and E. Zaret (1973) decided to take the debilitating and controlling aspects of schooling out of the schoolhouse and make schools places of meaning-seeking (Macdonald & Zaret, 1975). Macdonald developed a hermeneutic for a democratic praxis in education. It begins in the lived experience of the participants. He wrote: "Our activities, efforts, and expectations should, in other words, be focused upon the ideas, values, attitudes and morality of persons in school in the context of their concrete lived experiences; and our efforts should be towards changing consciousness in these settings toward more liberating and fulfilling outcomes" (Macdonald, 1981a, p. 145).

Macdonald encouraged the critical analysis of repressive or oppressive social structures using multiple perspectives. Language communities (academic disciplines are one expression but are not the only kind of language communities) are encouraged to give theoretical perspective to the problem. It is understood that no one language encompasses the fullness of lived experience. Using the analysis of the languages of inquiry developed by Jürgen Habermas (1968), Macdonald isolated three epistemological languages for framing inquiry. By far the most perva-

sive is scientific/technical language. Its focus is on control and certainty of outcome, not questions of value. Second, the epistemological language of critical theory seeks social emancipation through historical analysis to decode power interests. The failure of using only these two frameworks is that they are incomplete in their consideration of the human condition. Macdonald calls for the engagement of a third language: "Whatever rests in this category which is truly separate from control or emancipation must rest in the area of poetics. I would propose that there is a third methodology; that of the mytho-poetic imagination, particularly related to the use of insight, visualization, and imagination, which is essentially separate from science and praxis. . . . The mytho-poetic deals with 'why is there being rather than nothing,' at the awe, wonder, and anxiety of this puzzle" (Macdonald, 1981b, p. 12).

Macdonald did not give primacy to any of the three language communities. Rather, he encouraged educators to engage people in all of these forms of speaking, thinking, and knowing. From participation in these discourses, we construct the metaphors that help us to interpret and disclose reality. Continued inquiry causes new metaphors to arise and old metaphors to fall away. The hermeneutic circle of understanding takes place within each of the three language communities and across all of them. Macdonald argued that curriculum theory should be a prayerful act by those who educate, a statement of confident hope in existence as well as an effort to engage its myriad mysteries (1995). The seeking of meaning and reflection about how to live together in this world is a personal and community endeavor. Can it be governed by externally developed standards?

Paulo Freire

In *Pedagogy of the Oppressed*, a book of immense worldwide influence, Paulo Freire (1970) proposed that education should be a problem-posing experience as opposed to the banking image that he used to criticize most institutionalized education. Drawing from liberation theology, he argued that education as liberation comes about when the oppressed can name their world, identify their oppression and oppressor. Often his pedagogy for teaching literacy started with an artifact from the experience of those with whom he was working. He would not tell them what to write or say about it, realizing that the interpretation of an outside "do-gooder" would not evoke meaning. Instead, he would listen to their experience and learn from it, asking the oppressed Brazilian peasants he worked with to share their understanding.

Education is a process of sharing, not directing. Freire offered, "True humanism which serves human beings, cannot accept manipulation under any name whatsoever. In humanism there is no path other than dialogue. To engage in a dialogue is to

be genuine. . . . Dialogue is not to invade, not to manipulate, not to 'make slogans.' It is to devote oneself to the constant transformation of reality" (Freire, 1973, p. 114).

Freire invited educators to advance social transformation by making the art of listening, especially to those who are so often repressed and marginalized, share importance with the making of grand statement. His proposal has spread to many parts of the world, translated and elaborated on in numerous works (see Freire, 1997, and Freire and Macedo, 1998). What kind of standards policy could presume to enable others to name their worlds in ways foreign to the experts and policy makers?

Engaging with Contemporary Curricularists

There are contemporary curriculum thinkers who also challenge the notion of building education and reform around standards for content and performance. Dwayne Huebner, Maxine Greene, Louis Berman, Elliot Eisner, Nel Noddings, David Purpel, Michael Apple, Henry Giroux, Joel Spring, Max van Manen, William Pinar, Madeleine Grumet, Jean Anyon, Gloria Ladsen-Billings, Patti Lather, Joe Kincheloe and Shirley Steinberg, Lisa Delpit, William Ayers, William Watkins, and others are significant critics of the supremacy of standards and offer alternative proposals for educating our youth and ourselves.

Conclusion

If we take seriously the advice of past curriculum scholars, it is evident that conceding a controlling function to standards in directing what is most worthwhile to know, become, and share is detrimental to the positive possibilities of what curriculum could be. It bespeaks a pervasive lack of faith in the ability of human beings to decide and act in good, right, and just ways without coercion. Standards, as usually employed by the educational systems of the United States, seem to be based on the antithesis of a Deweyan faith in human capacity (see Dewey, 1934). A democratic faith in government requires faith in its citizens; similarly, a democratic faith in education demands a faith in students. As an aside, schooling appears to be the only business that does not adhere to the almost universal adage that "the customer is always right." In fact, schools seem to hold that their customers (students and even their parents) are almost always wrong; it is their defects that schools want to clean up and correct!

Drawing upon Abraham Lincoln's Gettysburg Address, as Dewey did, we call for education that is of, by, and for students. Dewey expressed it thusly: "The philosophy in question is, to paraphrase the saying of Lincoln about democracy, of education of, by, and for experience. No one of these words, *of*, *by*, or *for*, names anything that is self-evident. Each of them is a challenge to discover and put into op-

eration a principle of order and organization which follows from understanding what educative experience signifies" (1938, p. 29). To begin to enact a faith in human beings that is the basis for democracy requires education that is genuinely *for* students because it is first *of* and *by* them (see Schubert & Lopez Schubert, 1981). We contend, therefore, that education that is of and by students, that grows out of their concerns and commitments, is prerequisite to education that is truly for them in a relevant way.

We should not be content with standards that do not involve students and teachers in their design. The educational process itself should create standards for authentic living, being in the world, and relating with it in meaningful, just, and compassionate ways. Thus, the fundamental curriculum question (What is worthwhile to know, experience, need, do, be, become, overcome, and share?) must be infused into the entire educational process. It must be the central consideration of teachers and students. If this ideal were realized, or even approximated, what then would be the implication for standards as we usually see them in education—mandates designed from afar and used to control local educational leaders, teachers, students, and thus societal growth?

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HERMENEUTICS' INVITATION TO MEANING-MAKING

The Ecology of a Complexity of Standards, Educational Research, Policy, and Praxis

Marjorie Mayers

The standards movement in education is cause for great concern. One of the more pressing matters is that for the most part, the majority of us are not part of the standards discussions and as a result are also not part of the dialogue about what standards mean for educational policy, research, and praxis. The way we understand and make meaning of the standards issues is to defer our own thinking, values, educational philosophy, and creativity to the "experts" who have devised, planned, and set the standards agendas for our teachers, students, schools, and communities. Many of us are not seen as conversants or contributors to the discussions; we are neither welcome nor invited. But we surely have much to offer.

In an effort to change the aforementioned circumstance, to offer a challenge to standards proponents, and to empower a greater number of people to be involved in this educational debate, this chapter will introduce hermeneutics as a way of seeing the world and our educational work in it in a more ecologically holistic way, and it will serve as an example of how an alternative approach to taking up the world, such as hermeneutics, can act as a catalyst for reframing the standards-of-education discourse and our participation in it. There are many provocative questions that involve our deep engagement with the issues at hand, including: What do standards for practice and pedagogy really mean (to you and beyond you)? What are the values undergirding the standards movement? and In what ways can we become participants in renewed visions of what a complexity of standards might entail? These are the kind of questions a hermeneutic approach to looking at the educational standards movement might raise as critical

facets of any complexity-of-standards discussion. These questions demand scrutiny and careful attention to the complicatedness inherent in the standards-of-education issues, and this complexity is what I will take up here.

This chapter is split into two parts. First, I will offer an explication of the central tenets of hermeneutics in terms of educational standards issues so that I can demonstrate how a hermeneutic approach recomplexifies that which has been made simple by the current prostandards rhetoric. Second, I will look at major standards/educational issues hermeneutically to exemplify how a hermeneutic approach deepens the discussions at hand. To do this, however, we must first explore the philosophic attributes that make a hermeneutic approach to living in the world meaningful in the standards debate and beyond.

Hermeneutics as a Way In

One might ask what place a discussion about educational research, philosophy, and methodology has in a conversation about educational standards and other practical questions about education. The answer is: everything. Although the standards issues seem to focus on outcomes and means-to-ends, approaches to educational standards necessarily imply some view or other about knowledge, education, pedagogy, expertise, truth, value, and so on. How we come to know, how we judge what it is worthwhile to know, and how we evaluate knowledge has everything to do with what is happening in classrooms. For example, how much do you trust numbers as representatives of the truth, as in the case of statistics? Often, people believe that statistical analyses represent truth more than do other kinds of data, such as qualitative information derived from interviews, for example. But even though a statistical study may not say anything explicitly about the truth of its claims, there is behind statistical analysis a belief about the nature of 'truth'. In our culture, statistics are positioned as data that are irrefutable and infallible—potent ammunition for "proving" that a certain thing is the way it is because the numbers say so. The purported objectivity of "science by statistics" is further promulgated by the accompanying values that support the contention that data derived from standardized, quantitative measures are value-neutral, clean, and believable, that they correspond to reality. These positivist assumptions include the ontological (the nature of reality) belief that there is an apprehensible *reality out there*—an obdurate existence independent of the observer—that in order to know, or to come to know, objective and value-free approaches must be implemented to achieve *true* results, and that the aim of methodology is to converge on the truth by methods of deduction.

An alternative vantage point stems from a belief system that suggests that there are no privileged positions of authority, and that all data are connected to the contexts of their creation. In other words, despite statistics' claim to truth and certainty, no

approach to evaluation, or knowledge acquisition, or inquiry is safe and free from values, perspectives, and biases. The hermeneutic position posits that 'truth', 'reality', and 'knowledge' are a little more complex than some numerical equivalent of how the world works. Hermeneutics wants to problematize that which has been made simple by simplifying questions and linearizing results. Believing that the lifeworld is continually being interpreted by all of us and that the lifeworld is indeed complex, hermeneutics compels us to name our positions, state our histories, and explore how what we think we already know stands in contrast to what seems foreign to us. It is this hermeneutic conversation that I hope to re-enliven so that some of the more pressing issues about educational standards can be illuminated in a challenging way.

Part I—Hermeneutics and Standards of Education: Learning the Approach

As we find our way through the complexity of our existences together, we knowingly or unwittingly adhere to particular processes and methodologies that help us in clarifying, negotiating, and mediating the meanings of our experiences. Often, we align ourselves with that which makes us feel secure, stable, and certain. In this case that might mean that we are more comfortable in attaching ourselves to the kinds of educational standards that are measurable, linear, tangible, knowable, simplified, and straightforward. This knowingness assures us of what we know and helps to quiet whatever ambiguities about education, or pedagogy, or learning we might have. This knowingness seduces us into thinking that we have understood something about knowledge, learning, or education in a way that closes the conversation because we believe that the truth has been rendered and the decisions have been made. The discourse of the standards movement in education tends to exemplify such thinking.

Clearly, the unprecedented momentum of the standards revolution suggests that this kind of certainty is what we are looking for. Adopting a certain belief, value, and ultimately an approach to knowledge that we believe can deliver the goods to us in a way that won't confuse us, or scare us, or speak to us too personally has meant that we've suddenly closed the dialogue for further investigation. This kind of stability mythologizes education by equating it with outcome measures or teacher standards, while reinforcing the characteristics of the current educational enterprise as that which is dismembered—comprised of disembodied souls who design curricula, power brokers who set policy, disenfranchized workers who deliver data, and severed young beings who are merely recipients of a predetermined, packaged, authoritative education. In this case, knowledge and truth are seen as static, stable, and obdurate. Education is the passing on of substantive data—nothing more, nothing less. Hermeneutics, on the other

hand, is all about meaning-making, not apprehending what is already out there but finding ways to take up how we live in the world together.

Hermeneutics offers us a new opportunity to explore what moves us about education and to dig a little deeper into the complexity of what standards might mean and what education is, or could be, or should be. Hans-George Gadamer says that "we are possessed by something and precisely by means of it we are opened up for the new, the different, the true" (Gadamer, 1977, p. 9). And so it is true of this issue and of this offering to you. The standards movement in education is herein presented to be taken up in a new and different way. It is to be engaged by me and by you. In illustrating and demonstrating what I have come up with in thinking about standards in education, I invite you to explore the hermeneutic perspective that implores me to engage the standards-of-education issues beyond the givens. I ask you here to engage this text in a way that will free you from the constraints that bind scholarly inquiry into a narrow set of acceptable procedural rules and evidentiary standards, with the hope of creating a space that allows an unencumbered understanding about the standards issues to emerge and in order for this discussion to act as a building block toward revisioning a different and more complex set of educational standards.

"[T]he real power of hermeneutical consciousness is our ability to see what is questionable" (Gadamer, 1977, p. 13), and so it is our task to look anew at all that complicates and confounds an understanding of what standards of education mean for educational research, policy, and practice. The central tenet of this kind of approach is to make meaning and in some way to impart that meaning in a pedagogic and transformative way (Gallagher, 1992; Smith, 1994). It is not about separating and holding in abeyance our experiences in life, like the false promises of standardized tests that pretend to correct for all variables that may impinge on the "purity" of the results. To the contrary, hermeneutics understands that it is precisely because of our history that we seek to bring to bear what might be otherwise lurking quietly behind the scenes. That means that education is restored to the life-world in which it lives, in all its endless messiness and with all its many contradictions. It is not about reproducing the world so that there is a finite, obdurate, static truth that can be measured against some other truth, but rather it is about engaging in the dialectic and multilayered conversation that is continually in flux, changing, evolving, and shifting.

Hermeneutics is about a kind of personal acuity that enlists us to take up life and all that is mingled in the complexities of living despite our desires for certainty and predictability. Hermeneutics asks us to be critical and careful, and it demands that we struggle—rigorously—to find a clearing in the thicknesses of life. Understanding through interpretation is the hermeneutic quest and "good interpretation shows the connection be-

tween experience and expression" (Smith, 1994, p. 107). This is my goal here. The focus of my efforts is to show you, to engage you, and to help you understand that from a hermeneutic perspective, standards involve much more than just getting teachers to be accountable for their professional performance and ensuring that students achieve in certain substantive areas. The hermeneutic mandate is an important one, and it seems to me to be an articulation of the most natural form of communication, of conversation, of questioning, and of living.

Even though we want to be able to get a handle on what is happening in educational discourse by reducing the discussions to issues of accountability and achievement, a hermeneutic or complexity-of-standards approach directs us to take back the conversations that have been severed from the multivalent and rich textures of life and instructs us to reconnect educational questions to a world beyond educational borders. Perhaps that might mean exploring issues of social justice or looking at questions that address socioeconomic contexts, or access to education, and so on. Hermeneutics is, after all, a philosophy of living, looking at all the complexity that is imbedded in the educational endeavor, not a prescription for inquiry, research, or teaching. But a hermeneutic approach to research and teaching can deliver us back to the entangled, confused, and confounded places and spaces in which we live and learn, and it can offer invaluable insights into why, how, and in what manner one might take up the complexities of questions and ultimately the messiness of answers.

The first step in adopting a hermeneutic approach is to admit that we are interpretive beings and that we propel ourselves from day to day by using our interpretations as guides. For example, the fact that you're reading this text might suggest that you have some interest in educational standards and that because you have an interest you also probably have an opinion on the subject. In exploring what it means to have an opinion, hermeneutics asks us to leave the metaphysical questions of ontology (the nature of reality) to the philosophers and to admit that the world in which we live is the world to which we must pay attention and the world in which we must make meaning. And so what we want to look at is the lifeworld where standards of education get meted out, where kids get caught up in achievement rankings, and where teachers and teaching get dumbed down by being overbureaucratized. And so, the lifeworld where standards meet people and where standards affect lives is central to and inextricably part of what we are discussing here.

Partly because of my intention to explain what hermeneutics is, partly because the standards complexities need to be addressed in a different manner, and partly because I am hoping to engage you in this discussion, a dialogic conversation has begun. This hermeneutic tenet involves the important relationships that are built when

we engage text. From this place of experience and expression, I will lead you, and beckon you, and show you. The text will be our place of meeting; it is here that we will be engaged in the conversation around standards and hermeneutics and here that we will raise the issues of knowledge and rigor in the light of what hermeneutics might bring to the standards debate.

Gadamer (1995) suggests that this intermingling of our knowing and understanding, of our beliefs and perspectives, is a "fusion of horizons" where we reach in for the common ground between us, using language, history, and conversation to mediate our communication. This is done in the spirit of understanding and renovation. In this case, the intention is to get closer to the complexity imbedded in the standards-of-education constructs and to explore the interpretive process of engaging the discussions for all the things that our explorations may tell us, things we might be ready for as well as things that might surprise us. In the hermeneutic process we follow the threads of conversations and ideas that lead to various places and diverse understandings. In this case I am trying to explore the central ideas of hermeneutics so that you can appreciate a different perspective and an alternate worldview, especially as it relates to knowledge, truth, and evidence. But simultaneously, this hermeneutic tenet also frees me to wonder what an education based on this kind of discovery might look like. Like Dewey (1916), who advocated for teachers to meet their students where they are, hermeneutics invites us to do the same in order that meaning can be made between us. What would a standards discussion look like if meaning-making were a central value for learning, teaching, educational research, administration, and policy development?

As noted earlier, there is no unbiased position from whence to offer up a value-free assessment and to extricate information from its context. We always begin from a perspective and carry with us our history, language, purposes, and convictions. In other words, there is no way of getting behind perspective—there is no place of pristine *tabula rasa* from which to depart. The point of departure is always referential and prejudiced, relational and prejudged, in terms of one's history and all that is invoked by one's tradition (Gadamer, 1977, 1995; Gallagher, 1992; Smith, 1994). This is true of me, of the issues, and of you. Standards of education do not exist in a vacuum and have not come to be all by themselves. There are contexts that frame the standards movement as there are values, beliefs, and aspirations tied into the complexities of the issues, as I will try to show you.

But the admission that there is no objectivity to rely on need not frighten us with the thought that everything is relative and subjective. Rather, this approach demands that we be intellectually honest and rigorous and that we offer meanings and interpretations that lead us to understandings we hadn't conceived of before. Tradition or perspective need not translate into the narcissist's ego

fantasy, luring us into her world, separate and cloistered from anything else we might know or understand. Perspective is rather about the interplay between dynamic experiences and understandings, between situating what is new in relation to what we may already surmise and where our understanding may already be. Hermeneutics is, in the end, a practical approach to dialogue, dialectic, and discovery.

And herein lies the point of this chapter. It is to admit that there are multiple perspectives about standards and to cogently offer one here. It is to admit that the advocates of technical standards are offering a perspective on what may improve education—including teacher accountability/ability and student achievement—but that it is only a perspective, not the 'truth'. It is to connect the familiar to the unfamiliar and to find our way through the tensions of both. It is to present a case for an interpretation of what the standards movement is doing to the educational enterprise and to the human beings who are therein involved, and to investigate what that potentially means to me, to you, and to our understanding of how certain views are prized over others when particular perspectives are dawned. And so, despite the misunderstanding that interpretation—including the values, approaches, and worldviews that accompany it—is about the self, the ego, and the solipsistic space of the interpreter, we can see otherwise. Good interpretation is certainly not about these things. Hermeneutical interpretation can never be merely about the reconstruction of the world as it is (as if that would be possible) or as the narcissist sees it, but rather it is always an open and critical approach to questioning and understanding the meanings that are given as well as those that erupt in the geographies we are exploring (Gadamer, 1995). Hermeneutical interpretation is about understanding ourselves, our cultures, our beliefs, our issues, and our lives by way of understanding others, and I will therefore attempt to show you the manifold ways that these connections encounter the topic.

Gadamer suggests that history and language can act as both inhibitors and liberators in terms of our own understandings (Gadamer, 1995). This does not mean that once you have understood yourself you are all of a sudden able to see things as they actually are—definitively, finally—but rather that constant reflection is a necessary component of exploration, understanding, and knowledge creation. At its core, the careful scrutiny of ourselves, of others, and of the world as it presents itself beyond what we may be prepared for can lead us to take up more complex and critical issues, can free us to challenge the status quo, and can help us negotiate the muddled waters that are representative of a complex life. Does the standards movement allow for teacher self-reflexivity that might enable professional growth? Does it encourage students to be life investigators? Are there spaces to critically question the knowledges that are taken for granted in the classroom? A hermeneutic standards-of-

complexity approach enables the richness and multifaceted nature of teaching, learning, discovering, exploring, relating, and knowing to take shape in the opening of a dialogue about what it is that we want education to be about in the first place.

To admit in advance that I have a perspective does not justify saying anything at all about standards and the corollary educational issues. If I want you to see the connections that I have made in our complex world, I need to be able to sway you, to build a case for you that illustrates how more complex perspectives on knowledge production, dissemination, and control illuminate the possibilities of the educational enterprise. This is the hermeneutic task. My perspective is a dynamic energy of thoughts, reflections, learning, questioning, feeling, and assessing. I am continually muddling through to make meaning of the things that are presented to me as well as of the things that I seek out. I must bring these things to light if I am to be successful at making a case.

Gadamer (1995) suggests that this is precisely how I may be able to maintain my openness about the topic. Hermeneutics doesn't ask us to hide how our perspectives position us; it requires that we use that perspective to cogently argue for a certain interpretation. These are tasks, I might add, that require a good amount of investigation, perseverance, intellectual prowess, and strong communication abilities.

Now that we have discussed perspective as an important facet of hermeneutics, I will show you how my history, language, and perspective open me to the possibilities of interpretation, possibilities that erupt in the generative engagement and search for meaning with the topic at hand (Jardine, 1998). As Gadamer notes, "history is only present to us in light of our future" (Gadamer, 1977, p. 9). And so it is that hermeneutics recognizes the centrality of the tradition from whence one speaks, set among and in between the fluid motion of the world. Indeed, it is precisely because of my history, my beliefs, and my ideas that I have come to ask questions about standards and how they impact kids, teachers, and the art of pedagogy. For example, questions about the aims of education explode in front of me when I read about standards that aim to prepare students for the global economy of the twenty-first century. Although I might tell myself that there are economic realities, I wonder what economics and employment have to do with learning?

Perhaps this kind of query comes from my work with kids on the street who vision a different world and who value community over competition, or perhaps this comes from my visceral fear of the kinds of values we are teaching our kids by equating meaning-making with money-making. Whatever the case, this questioning process is an example of how I would begin to explore and interpret the kinds of deep meanings that are associated with education, as I see it. If my exploration takes me down paths that lead back to myself, then the interpre-

tation is about me and not about the question of standards of education and economics. If, however, my exploration leads me beyond myself, leads me to investigate the complexity of these issues, then perhaps I may be able to make a case and show how my fear is "justified." A standards-of-complexity approach would welcome the deep thinking and critical exploration that my perspective would bring.

Understanding and interpretation come from a tension that lives between what is familiar to us and what is unfamiliar. This means that my approach to a topic has been based in part on some familiarity with what I imagine education to be about. But the conversation doesn't end because of my familiarity with the topic. In other words, the goal is not to finally decide anything. I am not trying to fit what I find out into what I already know. Hermeneuts contend that what is familiar to us opens up the topic precisely because it presents itself as unfamiliar (Gadamer, 1995; Gallagher, 1992). As an example, the standards-of-education topic that I am addressing has been opened up because of the interplay between my historical experience as a teacher and my difficulties in understanding the issues at hand. Whatever is familiar to me about education presents itself as needing to be taken up again in relation to what seems foreign to me about the standards movement and the values therein. Thus new questions arise. My questioning leads me to read and talk about what standards mean for education in the future, which in turn leads me to ask more questions.

And so it goes: hermeneutics is pushed and propelled by the questions that we ask and the understandings that throw into question the things we thought we already understood (Gadamer, 1995; Gallagher, 1992). From the technical standards-of-education perspective, the discourses about achievement and teacher accountability seem to be all tied up and closed—already convinced about the relative merit of this kind of standards approach. But for me, the literature about standards is but an opening that allows me to search deeply for clues and ideas about how to make meaning around educational issues beyond what I am currently being offered.

This is where interpretation resides—oscillating between what we understand and what we don't, what is familiar to us and what is not. Gallagher (1992) says that "[i]nterpretation is an attempt to responsibly bridge these two demands [i.e., what is familiar and what is unfamiliar], to resolve or in some way to deal with the tension between them" (p. 150). To that end, taking the standards issues and grappling with all that they present prompts me to ask questions about the aims of education as I have not done before. Vacillating in between what I already understand and what is still foreign to me, I take up the tensions that arise in the in-betweens of the discourses about standards.

As noted earlier, it is my task to artfully bring to bear in expression what has been experienced, and to that end

you also play a part. Inasmuch as text engages a reader and from that engagement a relationship is born, the dialectics of understanding, communication, questioning, and thought are initiated between us. That is, the text is restored to a living communication when it is taken up, when it is read, when it is interpreted (Ricoeur, 1981). I offer this text as a pedagogic encounter for all of us. I hope that the relationship that you have with this text, like the relationship that I have had with this text, will be an opportunity for learning. We are engaged, you and I, and our lives will never be the same because we are the accumulations of our experiences and because of our experiences, we are ever changing beings. Above and beyond what we will or want, the lifeworld calls us and we are intertwined in it. We are called, as it were, to pay careful attention. It is to that existential state that hermeneutics invites us. And it is to that flux of dynamics between all that makes this discussion about hermeneutics and standards of education what it is that I invite you.

So how might we take up that invitation? How might we judge an interpretation? What counts as evidence for the interpretation that we offer when we take up the world hermeneutically? In much of his *Truth and Method* (1995), Gadamer refutes scientific claims to truth and authority. He battles with positivist conceptions of objectivity and reason and in their stead offers an alternative view of epistemology. How can we determine the extent to which understanding has occurred, if not in a static measure? How can we be certain that an adequate interpretation has been rendered? There are no better questions to begin with. How might these questions play out if a complexity of standards were adopted as a framework for determining how learning and inquiry, teaching and curricula development take place?

"[G]ood interpretation is a creative act on the side of sharpening identity within the play of differences—and we thereby give voice to and show features of our lives ordinarily suppressed under the weight of the dominant economic, political, and pedagogical fundamentalisms of the time" (Smith, 1994, p. 123). A complexity of standards aims at reinvesting educational research, policy, and praxis with values that acknowledge diversity in its many forms. As Smith (1994) suggests, one of the goals of good interpretation is to lay bare the complexities and underpinnings of the metanarratives that often operate silently but nevertheless influence and constrain the possibilities of our understanding. To make good cases and to provoke and persuade in the hope of renovation and elucidation, hermeneutics offers three central tenets beyond its epistemological position that address the parameters (or the boundlessness) of how we might engage a topic, how we might build a cogent interpretation, and what we might do with the myriad strands and complexities that arise from looking at the world as a complex of interrelated and interdependent ideas, beliefs, circumstances, and so on. Questions, understanding, and

the hermeneutic circle are components of a hermeneutic approach that are not clearly delineative, and thus their explication does not lend itself to linear articulation. They need to be understood as a complex of interdependent ideas that reflect the possibilities that the hermeneutic approach offers. Questions and the complexity of openness, issues around understanding and the fertile process by which we reach it, and the hermeneutic circle, understood as the interpretive inertia that continually churns and alters questions and understandings, all of these will enable us to proceed, hermeneutically, in taking up the complexities of standards-based education.

Questions

Questions and openness are central to the hermeneutical endeavor. As Gadamer (1995) contends, "the question is the path to knowledge" (p. 363). For me, this means that a program of inquiry-by-question as opposed to only inquiry-by-methodology opens up doors through which diverse or competing ideas and knowledges can emerge. For example, in terms of this chapter specifically, my questions began years ago when I undertook to become a high school teacher, and they continue to surface as I am engaged in the various roles that connect me to education. As a counselor, educator, scholar, citizen, and student, I question how these roles fit into or rub up uncomfortably against the standards movement. Another example of how hermeneutics is driven by questions is the uncertainty that arises when one is investigating how educational issues are dominated and shrouded in neoliberal agendas, rhetoric, and opinion. As the hermeneutic endeavor commands, questions beget questions, and this is true of what we find here. By questioning what seems familiar and final, hermeneutics involves an archaeology of meaning-making. Hermeneutic thinkers understand that taking up a topic involves following the trails forged by the substantive qualities embedded in the topic and by the questions that are raised in the pursuit of its understanding.

Each question directs us toward or away from understanding, but questions also drive what we uncover, what we wonder about, what we admit we do not know. "A question places what is questioned in a particular perspective. When a question arises, it breaks open the being of the object as it were" (Gadamer, 1995, p. 362). Therefore, in the act of inquiry, we must situate our questions within the domains of our own understandings so that they can be laid open to possibilities. The hermeneutical understanding of the foregrounded question is that which stems forth from a position, that which is exposed to whatever hinders or helps propel the question beyond itself. "The important thing is to be aware of one's own bias, so that the text can present itself in all its otherness and thus assert its own truth against one's own fore-meaning" (Gadamer, 1995, p. 269). After all, we are

ultimately concerned with understanding and meaning, and therefore the extent to which a question reveals possibilities will determine to some extent the value of the question itself.

And so in the trajectory of this exploration into the standards movement, I've been compelled by some questions, while quieting and laying others aside. Jardine (1998) notes that knowing in advance which threads to follow and which to lay aside is indeterminable until such time as the leads lead nowhere. Perhaps this is one of the aspects of hermeneutics that we can perceive and judge, that can help us conclude whether or not an adequate interpretation has been rendered. Are our questions evoking more questions? Are they leading us somewhere else—somewhere beyond the boundaries of what we already know, or think, or feel?

Language

Language, as Gadamer (1995) emphasizes, is central to the way understanding is experienced. In the first place, a conversation is always about something, and in the second place, a conversation is dialectically engaged by languaging about that something. Hermeneutics prescribes that we enter into multiple dialogues at multiple levels. Here, for example, I am both conversing with the texts that explicate the hermeneutic/interpretive nature of conversation, dialectic, and dialogue and, simultaneously, I am conversing with you and with this text. Invested in these conversations, there is an impetus to arrive at some shared meaning and some shared conception of what this text is revealing about hermeneutic understanding, conversation, and standards in education. Language is the foot soldier that helps deliver the "fusion of horizons" I mentioned earlier.

Similarly, in the course of my conversing with what the standards movement presents, I have initiated multiple conversations with the ideas and questions that arise from taking a topic up. I grapple with and sway in the decisions that direct which questions persist in asking for reconciliation and which understandings I might follow and explore. I am continually engaged in a dialogic conversation with myself, with others, with literature, with society, with complexities, and with the world. To that end, the entire interpretive turn is about conversation and renovation. Perhaps we might say that understanding is temporarily achieved when something new emerges about a topic, something that leads us someplace else. In this case, perhaps we might posit that understanding "of the particular case leads us to understand the universal" (Gallagher, 1992, p. 342; Jardine, 1992), all the while knowing that understanding and learning are never complete or final (Gallagher, 1992; Gadamer, 1995; Jardine, 1998).

The Hermeneutic Circle

One way of conceiving of this convergence of voice and conversation, understanding and reflection in a herme-

neutic approach is by invoking the hermeneutic circle. The hermeneutic circle is a process in which meaning and understanding unfold through the constant renewal of questions and conversation. This process is fluid. It has movement like the gentle (or maybe not so gentle) ebb and flow of the ocean's tide. The hermeneutic circle refers to the interplay between parts and wholes where, as F. Schleiermacher explains, "the meaning of the part is only understood within the context of the whole, but the whole is never given unless through an understanding of the parts. Understanding therefore requires a circular movement from parts to whole and from whole to parts" (as cited in Gallagher, 1992, p. 59).

And so this process of questioning and understanding, reflecting and questioning again, reveals the unending reciprocity between thinking, feeling, knowing, questioning, experiencing, and interpreting. The hermeneutic circle therefore implies a temporality, a contextual referent or chronological stream of turnings and twistings that contiguously evolve in the processes of education, learning, teaching, inquiring, discovering, arguing, and so on. As a result of each experience that beckons our intention and calls our attention to it, we accumulate a knowing that propels us into the future, all the while incorporating our understandings of the past. The process evolves and revolves, always enlarging itself to incorporate new aspects of understanding, producing more questions and leading into deeper and more complex directions. As Gadamer (1995) notes: "The art of questioning is the art of questioning even further—i.e., the art of thinking" (p. 367). As Gallagher (1992) concludes, "[t]he more movement in the circle, the larger the circle grows, embracing the expanding contexts that throw more and more light upon the parts" (p. 59) and increasing the potential for a more comprehensive interpretation to emerge. And so it is true of this chapter, of this book, and of the move to reaffirm a standards-of-complexity approach to educational research, policy, and praxis.

Part II—Standards as a Way into Hermeneutics: A New Vision of Complexity

Now that we understand something about the process and importance of hermeneutic exploration and the meaning-making possibilities of good interpretation, and now that we have explored the central tenets of hermeneutics with regard to truth, questions, language, knowledge, conversation, and the hermeneutic circle, we can begin to weave into our hermeneutic conversation specific examples of how a hermeneutic approach would break open, change, expose, and free the standards debate to incorporate a more complex and ecologically full perspective on what standards mean for education and beyond. Questions that beckon some kind of attention might include these: How does current standards rhetoric fix the educational issues under discussion, and to

whose advantage? How might standards of complexity embrace a hermeneutic approach in exploring some of the issues that are so presented? Is it even possible, given this rigidity, to enter into the discussion about the relative usefulness of standards of education? Instead of a closed case that claims that standards for teacher accountability and student achievement is the way of the future, a hermeneutic approach to this topic opens and broadens the discussion to include the multitude of particularities, complexities, confusions, and contradictions that are simplified, reduced, and expelled by the current standards movement rhetoric.

If the conversation is already in progress without us, where is our entrée into the fray? I suggest that shifting our way of thinking about truth, knowledge, rigor, research, policy, and practice; altering how we take up the world and restoring the world to its original complexity; and admitting that issues are more complex than we would like them to be will break new ground and will create renewed educational hope and enthusiasm. This is what a hermeneutic approach would count on. How might we take up the issues and how might we re-vision what education is, or could be, or should be? How shall we look at this in all its complexity, a complexity that might be different from what the standards-in-education movement has already uncovered? The answers are simply to dig a little deeper, to search a little harder, to be a bit more reflexive, to understand our own invested interests, to look a little further afield, and to examine in more detail what this standards conversation is really about.

Contesting what the implications of a standards-driven education might actually mean is a complicated venture to undertake. For example, when we speak hermeneutically about perspective, we must acknowledge, as we did earlier, that your engaging this text suggests that something about the question of educational standards intrigues you, compels your attention, or draws you into this topic. Is your reading value-neutral, or are you aware that you have certain beliefs already in place with regard to issues of standards-based education? A great place to begin would be to wonder about what draws you to the topic of standards in the first place? What beliefs, values, and approaches do you already have in relation to educational standards and the goals the standards movement purports? What experience is so deeply a part of you that it positions you in a specific way relative to standards-of-education questions and relative to a hermeneutic approach?

These are important perspectival questions. They are the lenses through which you frame your interpretation of the information, ideas, and suggestions throughout this chapter and throughout this book. We are, after all, the accumulations of our experiences, and our lives cannot be severed from how we might take up a topic such as standards in education. As teachers, administrators, policy planners, academicians, parents, and citizens, we all have a stake in how educa-

tion is framed in the larger social order, and we all have a responsibility to engage the discussions that sometimes seem beyond our reach.

To this end, the following substantive examples have been raised from the issues about the standards movement that struck me as I undertook to write this chapter. The questions and musings that follow are the result of my hermeneutic approach to this educational debate. These are the issues that a technical standards of education might ignore because they may not relate directly to the outcome-based standards to which this movement is connected, whereas a standards-of-complexity position would welcome the multifarious ways in which one might reframe what is complex about the project of education, as complex. It is my task here not to explore standards issues in depth but rather to invite you to experience the kinds of circular turnings and twistings that a hermeneutic approach brings to the standards topic.

The Seduction of Language

Hermeneutics is about language. It's about the conversations that we have with each other, the way that language can conceal or expose ideologies; it's about all that we do in our lives together, how we make and search for meaning; it's connected to everything that we are, and hope for, and dream of. In looking at the importance of language in a hermeneutic dialogue, I am seduced by the exquisitely crafted documentation that abounds in standards-of-education literature. My own experience with the language of the standards movement often left me wondering what was wrong with teacher standards. When reading about how standards encourage teachers to be next to godly, I loved the language about what teachers could be, or should be. I loved what I was reading about education and the complexity of the educational endeavor. If teachers could be all this with standards, who would dare argue against them? I was hooked, convinced, and captured. Then, after a pause and a question about what might lie behind this beautifully constructed case, I began to wonder how this language had seduced me to buy into what the standards movement proponents are selling. Entitled to make a case for a standards of education, the standards people use language to construct the meanings and persuasive arguments that hermeneuts encourage. For example, the following comes from the documentation of the National Board for Professional Teaching Standards:

> What Teachers Should Know and Be Able to Do
>
> In this policy, the National Board presents its view of what teachers should know and be able to do—its convictions about what it values and believes should be honored in teaching. This expression of ideals guides all of the National Board's standards and assessment processes.
>
> The fundamental requirements for proficient teaching are relatively clear:

> a broad grounding in the liberal arts and sciences; knowledge of the subjects to be taught, of the skills to be developed, and of the curricular arrangements and materials that organize and embody that content; knowledge of general and subject-specific methods for teaching and for evaluating student learning; knowledge of students and human development; skills in effectively teaching students from racially, ethnically, and socioeconomically diverse backgrounds; and the skills, capacities and dispositions to employ such knowledge wisely in the interest of students.

This enumeration suggests a broad base for expertise in teaching but conceals the complexities, uncertainties, and dilemmas of the work. The formal knowledge teachers rely on accumulates steadily, yet provides insufficient guidance in many concrete situations. Teaching ultimately requires judgment, improvisation, and conversation about means and ends. Human qualities, expert knowledge and skill, and professional commitment together compose excellence in this craft. The document continues:

> The National Board has led the vanguard effort to develop professional standards for elementary and secondary school teaching. The National Board Certified Teachers stand for professionalism in the schools. The National Board's responsibility is not only to ensure that teachers who become National Board Certified meet its professional standards of commitment and competence, but also to maintain standards and assessments that are so well regarded that America's accomplished teachers will decide to seek National Board Certification.

Well, I'm sold—how about you? We can see that there is clearly nothing wrong with what this document tells us about how teachers should be prepared for the classroom. If life were only this simple. But the seduction lies in how the language positions detractors, and also how the standards assumed here are measured.

We all need to be careful with language because it can capture us without our critical selves noticing the circumstances of our capture. In this case, scrutinizing the language of the standards-in-education documents made me question how I feel about the topic at hand. I came to understand two things I had not realized before. In the first place, I realized that the way in which the standards debate is articulated leaves no room for an alternative viewpoint to be taken up. Perhaps we might consider whether or not that is the deliberate positioning of the debate, whether it intentionally frames those people who would take issue with these kinds of standards philosophies as crazy, irrational, and so on. How can you argue when everything has been so neatly tied up? But despite the seemingly Pollyannaish language that beckoned me to abandon my commitments to a hermeneutic, complex, and messy existence and to release myself into the capable hands of those who would

make sure that "everything was going to be all right," I realized that no matter how beautiful and promising the language of the technical standards movement is, the bottom lines will continue to be focused on teacher accountability through the evaluation of student achievement.

I recognize that not all standards boards want the same things. Some allow teachers to prepare portfolios to demonstrate their excellence. But I am continually left with the same bothersome questions about who determines excellence and what measures will be used to judge. This hermeneutic lesson about language has heightened my sensibilities. By confirming the importance of language in how we construct meaning, it has shown me how attentive to language we must be as we take up the issues of standards of education.

Standards as 'Truth' and Rigor

Previously I spoke about the nature of 'truth' as it relates to knowledge production and acquisition and its connection to 'reality'. I found examples of this relationship in the documents of the standards movement. In coming to understand something about the standards-of-education movement, I noticed that technical standards literature presents the issue of improving education as largely synonymous with improving students' performance on standardized tests. Improving education is the goal behind the movement. On the surface, that seems fine; who could possibly suggest that improving education is a bad enterprise? But who sets the standards, what aims of education do the standards represent, and what values undergird the standards reforms? A complexity of standards might situate this approach to educational improvement in the context of exploring how certain appropriations of the 'truth' are represented in numerical representations of achievement and rankings, and it might posit that there are multiple 'truths' to which we might attend.

My investigation has led me to consider that, in fact, the issues are so complex that it is difficult to see a clear path toward encouraging schools, teachers, students, administrators, and so on to do better. In other words, I am restoring the difficulty of taking up a philosophy of science theme in the debate about what achievement tests represent in the complex world in which we live, learn, and teach. The questions above and others rise to the surface because I am circumspect about the assumption that the educational enterprise can be reduced to a focus on outcomes. Similarly, the assumption that rigor comes with high achievement on tests leads me to question what it is we want for our kids. Why do we want them to achieve? The standards argument seems to be based on a reductionist model that implies that if you are not in favor of "achievement" then you are not interested in student well-being, student development, or student learning. I would submit that we first need to explore the values that undergird what we expect achievement to encompass.

Questions about the aims of education need to be reintroduced into the dialogue to help lay bare what we want our kids and teachers to be doing and achieving and for what purposes.

Teacher Standards and Student Achievement: One Happy Family

Of course, when we speak about rigor, the topic that naturally follows is how to ensure rigor for both teachers and students. In the pursuit of teaching excellence, the standards movement purports that rigor equals achievement, and achievement equals teacher accountability. What strikes me as odd is that teacher standards and student standards are often discussed separately. Why is that the case when teachers and students live in relationship in the context of learning, knowing, and exploring? What agendas are the standards proponents meeting by keeping separate these notions of accountability and achievement?

A complexity-of-standards approach would ultimately want to take up the question of how teachers relate with students and vice versa, since they live together in the dynamic flow of relational complexities present in the educational enterprise. Moreover, there are contexts that frame the experiences of both teachers and students, contexts which cannot be severed from the discussions about rigor, achievement, and accountability. To do so would be to claim that the issues presented are not tied into and are not a part of the larger systems of our living together on this planet. Global economic issues or local, state, and national political agendas frame how we see and interpret these standards constructs. In the hermeneutic spirit of seeing parts as relative to wholes and understanding that neither can exist without the other, perhaps hermeneutic inquiries in schools would let these kinds of questions and paths develop and be followed—from the particularities of what is happening in schools to the systemic influences that frame schools in the first place.

At the school level, it seems that students are being rated, and as a result teachers are being evaluated. Teachers' own hermeneutic, creative, inquisitive natures for pedagogy and relationship are lost in the simplified discussions about standards and mired in the fear that they must be accountable for how their students perform on measures that are often created miles away from the lifeworld of the school in which they teach. If this is how we want our teachers to work, is it any wonder that they in turn question the nature and purposes of "education" as we have defined it? Living in the knowledge that their own sense of creativity and pedagogical expertise must be seconded to the "experts" who lay out the curricular agenda, teachers find their roles reduced. They feel it, they know it, and so do we.

At the systemic level, agendas are set by the few to encourage educational endeavors to fit into the dominant educational modality, treated as if everyone and everything should fall in line without question or controversy.

There are incentives for people in all camps and on all sides to simplify arguments so that the "buy-in" is more likely. Perhaps the search for simplicity has to do with a fast-paced, changing world, or maybe it has more to do with the pervasiveness and persuasiveness of the dominant economic, social, and political ideologies that are firmly implanted in the collective psyche. A hermeneutic investigation could expose some of the underlying values that compete in the spaces and places of educational reform and could create a conversation that is more fully ready to accept the complexities and confusions that abound in the teacher-student-pedagogy-school-system-society-values matrix.

This says nothing about the fact that in all of these various discussions, students seem to be left out of the picture and out of the conversation. These are unnegotiable spaces for kids. I can't help wondering what their aspirations are relative to their own educational dreams and hopes. Can we not trust their input, their answer to the question Why is education important? Are we not interested in how they perceive the "achievement" regime that is currently being pushed?

To my mind, this seems to be another example of a top-down approach to getting the education equation neatly tied up and linearized. Herbert Marcuse (1964) would suggest that the standards agenda for educational reform is a part of a larger vortex that reduces possibilities for complexity, diversity, controversy, and change. He would offer that the system seeks to rationalize people into the dominant ideology to reduce resistance and perpetrate the status quo. Could he be right?

Gadamer (1995) says that the strength of an interpretation lies in the very act of trying to see whether or not the other person's perspective might be valid. Can we allow ourselves the freedom and flexibility to engage that kind of educational debate and that kind of serious deliberation? What room does a technical standards-of-education value system open for resisters, dissenters, and those who otherwise want to challenge the systems that we take for granted? How might I respond to the reality that we are ready now to reward teachers and schools, financially and otherwise, for high achievement scores? What value system is being prized in this instance?

Substantive Severings

In addition to the ways in which teachers and students are severed from each other and asked to fall into line in a technically standardized modality of education, I have also noticed that the organization of the standards movement is both convoluted and compartmentalized. In the first place, standards boards abound, all racing to "nail it down" and "get it settled" once and for all. These include the National Assessment of Educational Progress Board, the National Board for Teaching Standards, and dozens of state boards of education that are joining the standards-based education reform frenzy. Even though teacher ac-

countability is set up to ensure that teachers are rigorous, serious, and faithful servants of the curriculum, teacher standards are completely intertwined in the substantive dictates of standards-based education.

There is a plethora of information that defines, delineates, and describes curriculum-based standards for the various subjects taught in school. Although I am in favor of the rigorous pursuit of knowledge, I must pause and ask myself if these prefabricated, severed, and compartmentalized snippets of what kids should know are reflective of the kind of broad-based education that we should arguably be valuing. One of the questions that keep surfacing as I think about the myriad questions and confusions I have about the standards movement is: What happens when something erupts in a classroom that is beyond the dictates of the standards but is worth following because the students are invested in and interested in understanding their experiences?

More specifically, let's imagine that a geography class takes up learning about Ethiopia, and in the course of that learning, territorial claims by surrounding countries are reported in the local newspaper. Imagine that the class wants to understand how space and politics merge in complicated ways in the politics of nationhood. The traditions, cultures, histories, religions, politics, economics, and social configurations of Ethiopia's placement, literally and figuratively, inspire the kids to look at Ethiopian literature, eat Ethiopian food, and listen to Ethiopian music. Clearly, our class has digressed away from the set geography curriculum and the teacher is chomping at the bit because in four weeks' time the kids are going to take an exam that is not going to ask them to comment on what kinds of investigations, questions, curiosities, intrigues, and excitement their inquiry into Ethiopia had for them. So the teacher presses on to fulfill the curricular mandate, feeling pressured to cover what the state has set out as the standard.

This hypothetical example highlights how severed substantive standards alienate and constrain the potential for complex configurations of learning. Taken to the extreme, technical standards sever substantive topics and reduce them to dead knowledge—that is, knowledge that is severed from the lifeblood of the lived world. There is no doubt that there are many teachers who would take the opportunity to journey down the aforementioned Ethiopian path, but what are the ramifications of diverting from the set agenda? What happens to teacher accountability when students don't cover the curriculum?

This example illustrates the potential for a hermeneutic learning that has the depth and breadth of a complex knowledge. Requiring the kids to follow trails of inquiry that are propelled by questions, encouraging the study of systems that may be foreign to our own, and renovating what we understand by means of what we

don't—this kind of hermeneutic, complexity-of-standards approach requires high quality and rigorous study.

Furthermore, I wonder how the world is perceived by students who are taught that the world is compartmentalized very much like the subjects they take up in school. Is geography really only about geography, or is it otherwise connected to how we make space for ourselves in the world? This kind of ecological perspective calls on students, teachers, policy planners, and administrators to view education as an endeavor that promotes learning, questioning, and exploring. Standards of complexity recognize the need for teachers to be invested with the kind of scholarly trust that promotes excellence in classrooms and beyond, while simultaneously recognizing that the issues around substantive standards are difficult to tackle since we continually have to engage the complex question, what do we want our kids to be learning?

The standards-of-education movement lures us into believing that everything we can know is definable, measurable, and quantifiable. The overriding impressions that I am left with are that the standards movement pays a lot of attention to "what" and less time on "why". The "why" slips silently away because the "what" represents the status quo and the dominant neoliberal ideologies that have fast-tracked the educational debate into a discussion about how to prepare our students to be the workforce of the twenty-first century.

Educational Research and Colleges of Education

Of course, all that we name as problematic about technical standards in education has monumental implications for colleges of education and educational research. Although the standards discussions are situated far away from university classrooms and are often cloistered in their own kind of "practical," "real world" spaces, universities are still the places where teachers are taught about teaching, and they are likewise the places where much of educational research gets done. The hermeneutic circle that takes me from the particularities and practicalities of the geography example spirals me out to the more philosophical spaces where education is connected to research and practice at the university level.

One observation about the standards movement is that there is a movement afoot for a voluntary national teacher certification program. What, then, are colleges of education doing if not preparing competent, skilled, bright, committed, scholarly, complicated, teachers? What is implied by a standards board on top of a state board? How much bureaucracy can the system sustain?

These questions burn to be answered as the standards movement makes a case for national teacher certification. Why are colleges of education being positioned out of the process of preparing excellent teachers? Do some believe that colleges of

education are producing bad teachers? Or is this move about making a hierarchy of teachers, to establish rankings much like those created by student standards? What other elements could be operating covertly that beckon some investigation? Are these things connected to the publication of school rankings, promoting "success" as the end-all and be-all in learning? I suspect so.

Further, what questions about educational standards do not ultimately affect how we train future teachers and encourage innovative educational research initiatives? Why should we prepare excellent teachers if their jobs are really about meting out a standards-based education? How are the worlds of the high school classroom similar to or different from the worlds of the university classroom, and what values are being perpetuated by the approaches that we take with respect to educational research and its impact on educational practice?

Hermeneutics, as we have been discussing, is centered on the experiences and expressions of the lived world. This kind of approach to inquiry demands a complex research method that cannot be rendered in reductionist models of epistemology. To that end, educational research needs to be more closely aligned with the lived world and must also work in conjunction with real schools. The research issue is complex because there is a place for inquiries that may not take place directly in the schools but that nonetheless have an educational impact. However, a research agenda that is wholly severed from the lifeworld of education might not bear the same kind of complex fruit that a more integrative agenda could.

What a hermeneutic approach offers is its generative and transformative goals in meaning-making. It is always about seeing things anew and making that which has become familiar unfamiliar, thereby creating an opportunity to look again at the world; it is always about making connections beyond the small systems of which we are a part.

Knowledge Producers and Knowledge Production in the Classroom and Beyond

What would it be like if teachers were trained to see themselves as researchers, inquirers, and knowledge producers? What kinds of information might emanate from a teacher education that instilled scholarly identities into those who go into the classrooms to teach and mentor our kids? In the first place, that kind of endeavor could only come to light if a complexity-of-education approach were adopted. Standards of complexity recognize that teachers and students are themselves researchers. Hermeneutics can invite them to ask questions and can encourage them to look at all that is complicated about their learning, about the contexts in which they learn, about the subject matter that they are asked to engage, and about the values of knowledge that they encounter.

Because the new pedagogical hermeneutic requires of teachers first and

foremost that they be *interpreters* of culture, rather than merely *transmitters* or managers, it is imperative that they be as widely and deeply educated as possible so that they can speak across disciplines, across cultures and national boundaries. The pedagogical modus of the hermeneutic classroom is *dialogue*, in which the teacher has the capacity to interpret culture and information so that students can appreciate their participation in it, as in a living stream that both flows through life and is the source of its sustenance (Smith, 1999, p. 5).

If technical standards of education take root, will teachers be able to be what Smith is suggesting? Will they have the freedom? Will the complexity of the world as it presents itself be simplified and concretized for an achievement-based educational system?

Hermeneutics in the classroom might entail a complexity-of-standards approach that would hermeneutically explore the cultures of schools, the breadth of social, political, psychological, relational, and substantive learning that happens simultaneously in the educational space. What about children who are becoming fine citizens and well-adjusted individuals but who are doing only marginally well on their achievement tests? A hermeneutic approach might investigate all the complexities and surprises that might be operating in classrooms that don't make the "grade." Such an approach would include and encourage questions about our lives together, about our purposes for engaging with children, for being part of learning.

Standards, Hermeneutics, Administrators, and Policy Makers

The kind of broad questions that I have raised throughout this chapter demonstrate how a hermeneutic perspective might take up the standards-of-education issues, for teachers and students, in classrooms and universities, for teaching and learning. A hermeneutic perspective does not alienate anyone who is interested in the complexity of our lives together. Open, critical, and difficult queries about our lived educational experiences can be undertaken at all levels of the educational enterprise. Requiring investigation that involves looking critically at all that plays into educational, pedagogic, psychological, and social interactions, the learning endeavor is deeply connected to the policy that frames it. I wonder what it would take for policy makers and administrators to also re-vision themselves as questioners, researchers, and educational practitioners who, like detectives, look for the things that strike them beyond the simple task of enforcing a standards-of-education agenda. Perhaps this explication of a hermeneutic approach might elucidate, to some extent, how we might begin to do that.

Questions as Conclusions

The standards issues are complex, as I've tried to demonstrate. Part of what makes the topic so complicated is that there seems to be an easy answer waiting for us in the standards-of-education movement, an answer that will al-

lay our fears about what we're doing with teachers, students, scholars, and schools by replacing complexity with complacency in education. Hermeneutics wants us to resist that temptation and to commit ourselves to the original difficulties of the lived world. Hermeneutics offers us the opportunity to get into the lived world where these issues play out and where we are offered the opportunity to make the world a better place, to come to know ourselves and our values, and to articulate those values and beliefs as they relate to education in general and educational standards in particular.

The questions that I've raised throughout this chapter are meant to serve multiple purposes. In the first instance, they teach what hermeneutics is. In the second instance, they demonstrate how hermeneutics can break open the standards-of-education debate by offering an approach that encourages us to get in the business of making meaning in the messiness of our lives together.

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CHALLENGING HIGH-STAKES STANDARDIZED TESTING

Building an Antiracist, Progressive Social Movement in Public Education

Alex Caputo-Pearl

In 1997, I returned to teaching in Los Angeles. I had taken a three-year hiatus from the public schools to focus on community organizing and graduate work in urban planning. As I watched the halls buzz with students eager to see their friends, I was filled with excitement and was sure that I had made the right decision. I would once again be a white teacher in a low-income community of color. But this time, in addition to taking on the challenges of teaching young people, I would look for opportunities to build labor/community coalitions for social justice with parents, teachers, and students. Peering into the corridor from a classroom that had cracked chalkboards, a leak in the ceiling, and no books, I did not have to look far for injustice.

Simultaneous with my return to the classroom, the momentum behind racist and class-biased high-stakes tests—those that are tied to student promotion, student scholarships, funding for schools, and tracking—began to grow in educational public policy circles. As my students face another year of narrow "drill and kill" and "test preparation" exercises amidst appalling learning conditions, it has become clear that the crisis in public education requires intervention by a social movement that challenges racism and class bias. To be effective, this movement must challenge the dominant ideas and myths—the ideology—that perpetuate systematic discrimination in schools and other institutions.[1]

This article first explores three major questions. First, what is the dominant ideology at the foundation of U.S. public education? Second, how has standardized testing historically supported this ideology? Third, how is the current high-stakes testing policy in Los Angeles both rooted in and

supportive of ideology that perpetuates racism and class bias?

The last section will be devoted to exploring an experimental political organizing model that is being used in Los Angeles by the Coalition for Educational Justice (CEJ). Several questions will be addressed: What dilemmas are presented to this kind of organizing at a historical moment when racist and biased ideology is so powerful? Given these dilemmas, what kind of educational reforms should CEJ be fighting for? What kind of organizing model should be used to build a grassroots base of power? Are there reforms that can legitimately improve quality of education for low-income students of color and simultaneously open space for transformative social movements?

Dominant Ideology in U.S. Public Education

The dominant ideology and mythologies surrounding U.S. public education contradict the real purposes of schools in a capitalist and racist society. The myths of meritocracy and "educational attainment" as the avenue for overcoming poverty and racism are at the foundation of support for U.S. education. If you walk into any public school, you will see some version of the incantation "All Students Can Succeed" posted visibly. Chances are that you will also see eye-catching posters encouraging students to "Stay in School" so they can "Go to College and Get a Good Job." These invocations are central to reproducing the dominant ideology, which assumes that (1) U.S. schools, from a level playing field, objectively determine who merits social privileges, thereby giving us a meritocracy, (2) everyone can receive these privileges if they can show that they are deserving, and (3) no matter what conditions surround a person, "educational attainment"—understood sometimes as high school graduation, at other times as high standardized test scores—is the true avenue to overcoming poverty and racism.

This ideology conceals profound racism and class bias in education and employment, particularly affecting low-income African-Americans, Latinos, Native Americans, and Asian-Americans. Factually, educational attainment—for example, getting a high school diploma—is not as important a determinant of job and university access as race and class are.[2] Similarly, race and class are tightly correlated with school drop out, a phenomenon that, when allowed to occur, violates students' rights to equal educational access. Many dropouts are in reality "push outs" because of the retention, or mandatory "flunking," policies popular today under the euphemism of "No Social Promotion." Rather than improving students' academic performance, these policies tend to disproportionately encourage low-income students of color to quit their underresourced and often hopeless schools.[3]

Racist and class-biased school funding policies are a primary cause of these inequalities. A 1999 study by the

Civil Rights Project at Harvard University found that public education in the United States is becoming increasingly segregated by race and income. Nationally, segregation has increased for African-American students since the 1980s and for Latinos since 1960. Students in the most racially segregated schools are ten times more likely to be poor than students in all-white or nearly all-white schools (Colvin, 1999a). Their schools are also more likely to be poor. Though reliance on regressive property taxes to fund schools has diminished slightly, vast disparities in per-student funding still exist between majority white and middle-class schools and those that serve low-income communities of color.[4]

A racist and class-biased job opportunity structure is also a primary cause of such inequalities. At the turn of the twenty-first century, the U.S. economy is as bifurcated as ever. The expanding high-tech "informational," financial, electronics, and "dot-com" sectors have generated high-paying, high-prestige jobs, disproportionately for white people.[5] Concurrently, there has been an increase in low-paying service and light manufacturing jobs and contracted-out, lower-paying public-sector jobs, where people of color are heavily overrepresented. In this context, it is clear that all students are not meant to succeed.

Yet only by placing these trends into a broader political and educational context do we see the full extent to which the "All Students Can Succeed" mantra is a lie. City police departments in New York, Los Angeles, Philadelphia, and other cities regularly violate the rights of people of color (Seeley, 2000; Hayden, 2000; Getlin, 2000), who have been criminalized throughout the 1990s, with many thrown into an expanding prison-industrial complex for nonviolent offenses. Simultaneously, social services have been attacked, defunded, or willfully neglected. Welfare and related services have been deformed, leading to an increase in hunger and poverty. Inadequate monies have been devoted to inner-city transportation, and in the health care sector, the ranks of the uninsured continue to rise. Simultaneously, decent-paying jobs have left working-class neighborhoods and communities of color. Affirmative action is under attack, and representation of Latinos, African-Americans, and Native Americans is falling in many universities (Jenkins, 2000; Weiss, 1999a).

This oppressive broader context extends to youth and educational policy. States are passing legislation that would allow teenagers to be tried as adults and placed in jail for longer periods of time (Giroux, 2000; Cooper, 2000). The police presence in inner-city schools is unprecedented. Zero-tolerance discipline policies in schools have a racially discriminatory impact as students of color are suspended and denied equal access to education at levels many times that of white students (Ayers & Dohrn, 2000). Understanding the desperation for employment options in low-income communities of color, the U.S. mili-

tary concentrates its recruitment in the inner cities, eager to place youth at the front lines of the "drug war" in Latin America and other excursions abroad. Low-income parents of color are routinely treated like second-class citizens on school campuses, stereotyped as lazy welfare queens, violent offenders, or immigrants "taking advantage of the system." Immigrants' languages have been denigrated, deemed inappropriate for school.

Fundamentally, contrary to the mantra, all students are not meant to succeed in a capitalist and racist society. Meritocracy, equal opportunity, and "educational attainment" ladders do not exist. Rather, a race and class hierarchy exists. Separate and unequal schools and separate and unequal job/university opportunity structures comprise a linked setup for students of color and low-income students. Not surprisingly, capitalism needs exactly this type of setup to function. The capitalist school system has always played an important role in (1) sorting people into the socioeconomic hierarchy, for the most part along racial, gender, and linguistic lines, and (2) socializing people to accept hierarchical relationships by perpetuating the dominant ideology, such as white male superiority and meritocracy (see Bowles & Gintis, 1976; Morrow & Torres, 1995).

Yet the victories of the civil rights, workers', and women's movements against some of the most egregious racist, classist, and sexist barriers have been both forceful and real. These victories, in combination with the incredible perseverance and brilliance of many individuals, have helped some low-income people of color reach middle- and upper-class status. In fact, enough have reached this status to help the media to perpetuate and strengthen the myths of meritocracy and "educational attainment" as the avenue to overcome poverty and racism. But the reality is that structural forms of discrimination—those that systematically violate human rights—still stand in the way of the majority of low-income people of color. To challenge these structures, we must combine sophisticated political analysis with a strategy to build a social movement.

The Historic Role of Standardized Testing in Supporting the Dominant Ideology in Education

For decades, standardized intelligence and achievement tests have served as a racist and class-biased tool for the sorting and socialization process that capitalist and racist schools perform. They have also served as a vital tool in the perpetuation of ideology that posits the inferior intellectual abilities of people of color, immigrants, and low-income people. The racist eugenics movement in the early 1900s substantially contributed to the development and administration of the first standardized tests. In 1923, Princeton professor Carl Brigham's U.S. Army intelligence tests laid the foundation for the creation of the Scholastic Aptitude Test (SAT), a variation of which

now determines college entrance. His all-English standardized testing of army recruits—81,000 "native born" whites, 12,000 foreign-born immigrants, and 23,000 African-Americans—led him to conclude that (1) "the foreign born are intellectually inferior to the native born," (2) intelligence rises as the recruit spends more time in the United States, and (3) relative quantities of Nordic blood determine a person's intelligence. Not surprisingly, beyond the clear language bias, the tests were culturally and socioeconomically biased, including questions about U.S. postage rules, bowling, and tennis (Sacks, 1999, pp. 29–32).

Also in the 1920s, Lewis Terman, Stanford University professor and originator of the Stanford-Binet intelligence test, began to perfect the role of tests in sorting and socialization. He convinced many school districts to use high-stakes and culturally biased tests to place students onto gifted and talented tracks, "slow" tracks, or entirely separate schools. For example, in the 1920s an educational consultant for the San Jose school system recommended that the district use Terman's tests to guide "children for their proper economic life activities in accordance with their abilities." The vast majority of Mexican-American children in the district went to lower academic tracks because of "inferior intellectual quality." By the mid-1920s, more than 2 million school children across the United States were tested primarily for academic tracking purposes (Stoskopf, 1999, p. 12).

Today, politicians and business leaders have increasingly advocated standardized testing. They argue that this emphasis will ensure that (1) schools and teachers are accountable to communities and students are made accountable for their lessons, (2) the quality of education is increasing when scores are increasing, and (3) economic and academic opportunities are expanding for students who attain higher scores. Using standardized tests as a hammer, they tell students to be accountable for their classwork and homework, parents to be accountable for their children's performance, and teachers to be accountable for their students' performance. In doing so, they effectively marginalize discussion of the real problems—that government and corporations refuse to be held accountable for the provision of decent public services, jobs, school supplies, and resources to low-income people and communities of color.

Wearing the dual masks of "objectivity" and the "need for a tool that precisely measures educational attainment," the rhetoric of government and business leaders surrounding the use of high-stakes standardized tests is more subtle today than it was in the 1920s. However, the objectives and effects of the tests, specifically around sorting and socialization, remain largely the same. Now, as during the 1920s, white and middle-class students are disproportionately rewarded with the top of the test score tallies. Low-income students of color who live in underresourced communities, attend underresourced schools, and

experience racism on a daily basis are punished and neglected at the bottom, many of them tracked into low-wage jobs or "pushed out" of school into prison and the military.

How High-Stakes Standardized Testing Supports Dominant Ideology, Racism, and Class Bias in Los Angeles

Political-Economic Context

The nationwide crises in job stratification and government cuts are explosively magnified in Los Angeles. Los Angeles is considered a "world city," with a corresponding bifurcated, unequal job structure.[6] On the high end of employment, LA's job growth rate in the financial, real estate, and business services sectors—including advanced services provided to corporations involving financial innovations, transactions, accounting, computer programming, and management consulting—was over 50 percent between 1972 and 1984. In addition to the consistency of the primarily white-collar film industry, growth in electronics and telecommunications is also driving the economy, with firms clustered in the suburbs of Northern Orange County, El Segundo, Chatsworth, and Burbank-Glendale (Keil, 1998, pp. 99–112).

At the same time that these primarily white-collar sectors have boomed, wealth disparity and poverty have been increasing and continue to be overwhelmingly race based, that is, concentrated in communities of color.[7] Two hundred eighty thousand manufacturing jobs—many of them union and overwhelmingly held by people of color—were torn away from working class areas of LA County between 1979 and 1993, as corporate leaders in the auto, rubber, steel, and glass industries sought consolidation and lower-wage locations (Wolff, 1994). Public sector cuts have resulted in layoffs for thousands in the government workforce, also disproportionately made up of people of color and women. "Reindustrialization" that has occurred since the loss of heavy manufacturing has been in low-wage, nonunion sectors such as garment making, food processing, and restaurant and hotel services (Keil, 1998, pp. 95–112. See also Soja, 1991).

Meanwhile, government spending and programs for social needs have been under attack. Women of color in particular have been punished by President Clinton's welfare reform. Of the thousands of women in LA County who have had their welfare cash grant reduced, half have not been able to pay for food. Just under 50 percent of those women affected by welfare reform have become homeless, and 25 percent have not been able to find child care. Moreover, 58 percent of women in LA County who have been removed from the welfare system are currently unemployed. Of those who have jobs, over 50 percent earn less than seven dollars per hour, substantially shy of a living wage (Welfare Reform Monitoring Project, 2000).

Health care is also in crisis. Approximately 2.7 million of the 9 million residents of LA County do not have health insurance, 700,000 of them children. Forty-six percent of Latinos and 26 percent of African-Americans do not have health insurance. Meanwhile, hospitals are downsizing, and the entire county health system is in permanent financial crisis (LA County Dept. of Health Services, 2000; Riccardi, 2000). The Los Angeles Metropolitan Transportation Authority has defied a court order to buy more buses to serve its ridership, which is overwhelmingly low-income and of color, focusing instead on building corporate rail projects to suburbs and the port (Rabin, 2000a, 2000b; Mann, 1996).

On top of this, anti–working class propositions based on racist campaigns of misinformation about the undeserving poor have devastated communities of color. Affirmative action and bilingual education have been banned through passage of Propositions 209 and 227. Jail construction is exploding with the passage of Proposition 184's "three strikes" and Proposition 21's "juvenile justice."[8] Meanwhile, it is not crime that is increasing, but the desire to criminalize the poor and people of color. As evidence of this, the top two reasons that people are entering California jails are nonviolent offenses—possession of a controlled substance and possession of a controlled substance for sale (Irwin, 1999). Thirty-two percent of the California prison population is African-American and 34 percent is Latino, far disproportionate to their share of the California population (Southern California Criminal Justice Consortium, 1999). The Los Angeles Police Department is under federal investigation for beating, shooting, and stealing from people of color.

At the same time, the California state university system has been cutting its remedial programs, which have historically helped students who come from underresourced K-12 schools (Weiss, 1999c). The University of California system has become more exclusive. The 1999 freshman class at UCLA had an average GPA of 4.24 and an SAT score of 1330. Representation of African-Americans, Latinos, and Native Americans is decreasing, down to 13 percent (Weiss, 1999a). Its student body came mostly from families that earn between $100,000 and $150,000 per year (Weiss, 1999b).

Public Education Context

The separate and unequal job/university opportunity structures in Los Angeles are supported by separate and unequal schooling. California's ranking of forty-first in the United States in per-pupil spending (Yates, 1999) and the 1978 passage of Proposition 13, which permanently reduced property and corporate tax rates, have been substantial causes of the inequalities and inadequacies of schools. Beyond this, California state policy is in place for Basic Aid Districts, allowing the wealthiest areas in the state to keep a higher-than-average percentage of

their property tax money in their own districts, thereby further concentrating wealth and privilege (for more information, see Odden, 1992). Further, PTA groupings from wealthy areas routinely put thousands of dollars into their school systems to buy new teachers or supplies. But beyond these policies, the inequality has been driven by the consistent and racist neglect of urban poverty and institutions and the refusal of policy makers to understand that creation of first-class education in crowded, historically oppressed, inner-city communities will require massive investment, well beyond what is invested in middle-class suburbs.

Over 80 percent of students in the Los Angeles Unified School District (LAUSD) are people of color and 70 percent are poor (Kantor, 1997, p. 21). Many of the over 700 schools in LAUSD, the second-largest district in the country, are literally crumbling. Since 1978, only eight new schools have been built, while enrollment has expanded by 10,000 students per year (Colvin, 1999b). Class and school sizes have soared, making it virtually impossible for regular, engaged student-teacher interaction to occur (Blume, 2000; Smith, 2000). Over one-quarter of the teachers in LAUSD are noncredentialed and lack the professional support they need. Many classrooms have no permanent teacher (only rotating substitutes) and no teaching assistants, especially in the most racially and economically isolated areas (Colvin, 1999b). A severe textbook shortage exists across several subject areas (Smith, Sahagun, & Sauerwein, 2000). These conditions present a portrait of inequality when compared to those in the predominantly white public schools of Beverly Hills, Santa Monica, La Jolla, Mountain View, or Santa Cruz.

Amidst this political economic and educational context, independent and progressive movements fighting for social justice have been profoundly weak (for an analysis of different types of movements see Wypijewski, 1997). Many movements are of the narrow "Not In My Back Yard" (NIMBY) nature, focusing on community-specific issues—for example, struggling to keep a landfill from being built—without determining whether a problem is extinguished or merely relocated to another neighborhood. Other movements are tied to and dependent upon Democratic Party or AFL-CIO (American Federation of Labor) officials, thereby confined only to the narrow, often racist and class-biased politics of these organizations. Still other grassroots mobilizations are temporary in nature, formed only for short-term struggles to defeat propositions or candidates. And finally, other movements have been under consistent threat of police repression, such as the Justice for Janitors movement of Los Angeles (Olney, 1993). Notwithstanding these obstacles, the rise of high-stakes testing in Los Angeles—and the necessity of opposing it—may open political space for a new, transformative social movement in public education to emerge.

The Rise of High-Stakes Standardized Testing

The California and Los Angeles governments' preferred "solutions" to the educational and economic crises have been to implement high-stakes testing and retention rather than to invest heavily in schools and attack racism. In 1997, California's Republican governor, Pete Wilson, sponsored legislation requiring the statewide administration of the Harcourt Brace Corporation's Stanford 9 test. It would be administered in English to the vast majority of students, regardless of English fluency levels. This racist attack by Wilson on immigrant students was consistent with his support for Proposition 187, which threatened to remove undocumented immigrant students from schools, and for Proposition 227, which effectively banned bilingual education.

Stanford 9 tests—acknowledged by prominent academics and educators to be culturally and socioeconomically biased—have included questions about foods, furniture, television programs, legends, computer usage, and views of private and public property that would favor students from white, middle-class backgrounds and those who grew up in the United States (Groves, 2000a). These are the students who have the highest degree of access to resources and to the "cultural capital" that is valued by the dominant white, middle-class strata. Most importantly, on top of the language and cultural bias, the Stanford 9 is administered in an unequal educational and employment context—where students in low-income communities of color who go to schools without resources are at a severe disadvantage.

In 1998, "No Social Promotion" legislation passed the California Assembly and Senate, receiving support from Governor Wilson, LA Mayor Richard Riordan, and other politicians looking for a quick fix to the public's concern about schools. This legislation was separate from the earlier statewide Stanford 9 law, but the two laws would come together to create explosive high-stakes testing policies. Under the 1998 law, the practice of socially promoting students would be ended, and districts would be required to retain, or "flunk," students not considered to be at grade level. This policy sailed through Sacramento with strong bipartisan support and constant political grandstanding around a "new era of accountability" for the schools.

This political support came despite the fact that virtually all research on student retention shows that it does not have positive academic effects, instead dramatically increasing the chance of student drop out. Experiences in New York City and Georgia in the 1980s and in Chicago and Texas in the 1990s have shown that, predictably, low-income students of color are the most likely to be "flunked" and to be "pushed out" because they are the most likely to attend schools that do not serve them.[9] Despite this, in a rush to score political points locally and in Sacramento, LAUSD put a re-

tention plan in place a year early. In LAUSD and all over the state, the Stanford 9 and other standardized tests would be phased in as criteria for retaining students, creating a triple hit on low-income students of color in the form of a biased test given in a context of inequality that is linked to discriminatory policies like retention.[10]

Democrat Gray Davis—dubbed a right-wing, "Crackdown Democrat" by the *New York Times*—was elected governor of California in 1998 on a platform of education "reform" and law-and-order politics that demonized youth of color and promised more police and status quo economic development policies (Nieves, 2000). Davis immediately outlined more punishments and rewards for students, teachers, and schools based on Stanford 9 results. At the same time, he guaranteed that he would not raise per-pupil spending to the national average. The politically ambitious Davis offered this guarantee as a clear signal to right-wing and business interests that he would not move to implement even remotely progressive tax measures to fund schools (Pyle, 2000).

Instead, Davis created the Academic Performance Index (API), based on Stanford 9 scores, in order to rank schools statewide. Low-ranked schools that remain low-ranked are threatened with the stigma of "reconstitution"—the involuntary transfer of all staff. Moreover, Davis and his staff have taken measures that virtually ensure a narrowing of curriculum around the Stanford 9, rampant "teaching to the test," and racist and class-biased rewarding of the privileged. In his 2000–2001 budget the governor included (1) financial rewards and punishments for entire schools depending on changes in their Stanford 9 and API scores, (2) scholarships for students in the top percentiles of the Stanford 9 and for some others who markedly increase their scores, and (3) financial rewards for individual teachers—up to $25,000—who improve the scores of their classes (Colvin & Helfand, 2000).

As these policies were sailing through Sacramento, another leading force in Los Angeles education, United Teachers-Los Angeles (UTLA), an affiliate of the AFL-CIO, was the center of great contestation regarding high-stakes testing. The union leadership had lobbied in Sacramento for the student retention legislation in 1998, worried that union opposition would give the impression to the public that teachers were against "school accountability." Since then, union leadership has been very involved in helping the district implement high-stakes testing and retention, arguing that it is a moving train with public support and that the union should jump aboard to impact its direction. As the policies have moved forward, UTLA's most visible official critiques of testing and retention have focused narrowly on teacher rights—how the policies create too much paperwork for teachers and how teachers should not be held accountable to only one measurement device, in this case the Stanford 9.

But rank-and-file activists—many involved in the CEJ—passed motions at the UTLA House of Representa-

tives to oppose the Stanford 9. Further, motions were passed in some UTLA area meetings to reverse union policy and oppose the retention plan. Predictably, union leaders delayed any public opposition to the Stanford 9 test, even with motions in place. But to their credit, they eventually did take action.

Meanwhile, portions of the union leadership and significant sectors of the rank and file continue to argue that if UTLA militantly opposes the Stanford 9 and student retention, the union's current efforts to advocate for a pay raise will be defeated. The union's prioritization of the demand for increased teacher pay and benefits and its primary focus on teacher rights in its critiques of testing and retention reflect an economistic strategy. In this way, UTLA has continued the long tradition of labor union leaderships subordinating antiracist, community-based, antipoverty, and antisexist demands to narrow, economistic demands that overwhelmingly benefit union-organized, upper-strata working class, and middle class constituencies rather than the most vulnerable in society (for discussion, see Mann & Ramsey, 1996; Mann, et al., 1994).

Meanwhile, a third leading force in education—corporations and business interests—advocated strongly for standardized testing. Harcourt Brace, Inc., which develops the Stanford 9, receives millions of dollars in contract money from the State of California. McGraw-Hill, Inc. and other companies make millions in publishing year-round test-preparation materials. Other companies have contracts with districts nationwide to provide narrow, test-coaching tutoring to a handful of students (for more on the money in testing, see Sacks, 1999, pp. 12-13, 221-230). Lobbyists for these companies can often be found in Sacramento and at district offices. Further, business leaders from Hewlett-Packard, Boeing, IBM, Pacific Bell, and other corporations formed the California Business Consortium for Educational Excellence. The consortium has a full-time staff devoted to lobbying in Sacramento for standardized testing, among other policies (Colvin, 2000).

On another front, Eli Broad—a financial services/real estate millionaire and a key member of LA Mayor Richard Riordan's inner policy circle, made up of white male millionaires—recruited and helped to hire former Colorado Governor Roy Romer as LAUSD's new superintendent.[11] Time will tell what Romer's policies will be, but the former cochair of the National Committee on Educational Standards and Testing has expressed support for retention programs and test-based rewards and consequences. In his early days as superintendent, he has offered very few ideas that might address inequality, institutional racism, and adequacy of resources ("Roy Romer's," n.d.; Callan, n.d.). However, now with the beginnings of a movement called the Coalition for Educational Justice (CEJ), the debate about high-stakes testing is taking new directions within the UTLA. This group has mobilized an antiracist, multicultural coalition of thousands of parents, students, and

teachers to achieve victories forcing the LAUSD to allow parental waivers of these high-stakes tests and notification by the district that waivers are available. They have also moved the debate from accountability to educational and social justice.

For their part, however, business leaders have four major interests in public education, all of which are supported by policies that emphasize standardized testing. First, they are interested in tapping into new markets in which they can make profits. Thus, the more services within public education—from testing and evaluation to food services—that can be "spun out" to private companies for lucrative contracts, the better.

Second, business leaders are interested in having at their disposal an appropriate workforce. Looking beyond their feel-good rhetoric of "raising all standards and levels," we can see that most business leaders want a labor market that is stratified and segmented, like that which is supported by unequal education and standardized testing. This type of labor market contains both highly skilled and highly paid workers and those workers that would accept lower-paying, unsatisfying jobs.

Third, most business leaders wish to push public agencies to "run more like businesses"—where the guiding dirges dictate cost-benefit analysis and more investment in the private sphere than the public sphere. Thus, business leaders advocate for fiscal austerity in the use of public money for the schools. To this end, they advocate financial discipline through tools such as standardized test results to determine which schools and employees should get public money and which should not. Business leaders' key objective in advocating that schools be "run like businesses" is that corporations be shielded from progressive taxation measures that would substantially redistribute wealth and place more money in the public sphere.

Finally, business leaders are often in the forefront of advocating a narrow "core curriculum." Because so much power in the United States is concentrated in the hands of corporations, curricula that engage students in interrogating, dissecting, and "speaking truth to power" are dangerous. So social movement histories, labor histories, civil rights histories, and other histories that deal with the struggles of working people against powerful institutions are often excluded from curricula.

The majority of these political players—politicians, union officials, and business leaders—promise that raising test scores will attack income inequality and racism. Yet if that is truly the intention of some, it stands in direct contradiction to many of their other policy choices. More likely, for many it is a cynical ploy to divert attention from real problems and from the need for massive investment. The "rising test scores equals an attack on poverty and racism" formulation is the newest reflection of the "educational attainment" recitation.

The Real Impacts of High-Stakes Standardized Testing

As I've pointed out, the proponents of high-stakes standardized testing argue that testing will ensure that (1) schools and teachers are accountable to communities and students are made accountable for their lessons, (2) the quality of education is increasing when scores are increasing, and (3) economic and academic opportunities are expanding for students who attain higher scores. The *real* impacts of high-stakes standardized testing in Los Angeles refute what the proponents argue and, in fact, deepen existing inequalities.

First, high-stakes testing strengthens racism and class bias. Also, because the Stanford 9 test is culturally and linguistically biased and administered in an entirely unequal context, test results have duplicated the patterns of standardized test results throughout history—they have left whites and middle-class students at the top of the test score tallies and have left a disproportionate number of students of color and low-income students at the bottom of the tallies. In 1999, among low-income students in California the average API score—based entirely on Stanford 9 scores—was 499, 118 points below the statewide average. The scores for students whose parents did not go to college—a right that has been abrogated for most Latinos and African-Americans in LA and elsewhere—were approximately 50 points lower than those whose parents did go to college. Further, API rankings dropped as the percentage of non-credentialed teachers in the school rose (Friedman, 2000; Groves, 2000; Helfand & Sahagun, 2000).

Though Los Angeles and California are in the early stages of doling out the high stakes attached to Stanford 9, a pattern is clearly being set. The majority of punishments set by Davis and the districts will be directed at low-income students of color and those who don't speak English—and their schools. Rewards will primarily go to middle- and upper-class white students with good schools and access to cultural capital—and to their teachers and schools (see Zamichow, 2000).

Second, particularly in schools that serve low-income students of color, uncritical, unimaginative work on basic skills and "test prep" is glorified, serving a corporate agenda to prepare entry-level workers. The curriculum has been narrowed at many inner-city schools in LA, further marginalizing the histories of women, national liberation and anti-imperialist movements, labor, gays and lesbians, and so on—as appointed testing coordinators hold unprecedented power, requiring homerooms, study halls, and entire classes for Stanford 9 test coaching. Racism is further embedded in the curriculum as languages, experiences, and information that are deemed unrelated to "standards" and tests are devalued. Separate and unequal schooling takes another parallel form as inner-city LA schools focus on disengaging "drill and kill" test coaching

exercises while suburban, primarily white schools—less worried about test score punishments—engage their students with project-based and critical thinking–based learning (see Caputo-Pearl, 1999; Groves & Richardson, 2000; Berlak, 1999; Aratani, 2000).

This discussion reveals the third major impact of high-stakes testing in Los Angeles. One result of test coaching, according to virtually all education researchers, is a predictable "bounce" upward in test scores, even at underresourced schools, as we have seen over the last two years in LAUSD (Groves, 2000b; Helfand & Sahagun, 2000). Educational researchers further agree that rising test scores are not tightly correlated to academic achievement or improvements in school quality. They equate to student knowledge of the test and test format, not to real learning or expansion of student economic opportunity (see Kohn, 1999, pp. 73-92; Groves, 1999). Despite this research, much of the public believes that rising scores indicate healthier schools. The media and the LAUSD's focus on this "improvement" smokescreens the need for a much broader discussion of what is needed for real educational reform.

Fourth, new forms of tracking, or "educational triage," have been institutionalized in LAUSD, primarily at schools in low-income communities of color. District officials, under pressure to improve the lowest-scoring schools, have directed teachers in these communities to focus their attention on those students who have already scored relatively high on tests. These students, the district contends, have proved they take tests well. If they receive more attention, so the argument goes, their test-taking abilities are bound to improve. Their resulting higher individual scores can pull up the entire school's average, thus creating the illusion of reform and opening the possibility for test-based rewards (Caputo-Pearl, 1999; Moberg, 1998).

Fifth, corporate and private influence over LA's public schools has deepened, privatization forces have been strengthened, and school accountability to communities has been weakened. Because of the Stanford 9, much of the LAUSD curriculum is now influenced by Harcourt Brace, Inc. and its economic and political allies in national business consortiums. Sylvan, Kaplan, and other companies have signed contracts with several LAUSD schools to provide "test preparation," thus cracking open the door of the public schools to privatization and advocates of "contracting out." Students all across LAUSD are treated like numbers (test scores) and commodities (with value based on test scores).

Test scores influence more and more school site decisions, playing the same role as profit in disciplining financial decisions and workers and promoting fiscal austerity. Business leaders and CEOs have unprecedented power over LAUSD. Mayor Riordan and his inner circle have advocated for the corporate-inspired and test-frenzied LEARN reform program, for the inclusion of McKinsey International Business Consulting Firm into the top circles of decision

making in the district, and for an expansion of the role of the UCLA Business Program in the training of principals, teachers, and top administrators. Further, there is less and less school accountability to communities in LA as more and more district policy is determined by state mandates, such as the Stanford 9, retention, and bilingual education laws.

Sixth, and perhaps most importantly, dominant ideology in public education has been strengthened by high-stakes standardized testing. Many more people have bought into the ideas that students must compete for limited resources and that they will have better life chances if their test scores rise—legitimating the supposed "objectivity" of the tests and reflecting adoption of the meritocracy and "educational attainment" myths. As a result, many youth of color and low-income youth have internalized low test scores as objective proof that they should not expect to get into universities or satisfying jobs.

Media accounts of LAUSD's eighth-grade retention plan this year were filled with the angst and anxiety of many students who were attending underresourced schools and threatened with failure. For example, one student said, "I keep thinking, 'What if I fail? What if I don't make it to high school?' It would be so embarrassing. I sometimes get mad and break down and cry." Another eighth-grade student who was interviewed clearly stated her intention to drop out of school because of the high-stakes testing, and a third summed it up: "I don't think the end of social promotion is fair because some students come from bad elementary schools. They've had bad training and now they're going to be punished?"[12]

It is in this realm that a model for building social movements must be tested. The nascent movement must first carve out the political space to engage with an alternative vision of education. Leaders who emerge from that space must then begin to build a base of support around a collective, alternative vision. The organizing of a base of support must be rooted in the dual premises of qualitatively breaking from dominant ideology and respectfully engaging parents, students, and teachers in authentic dialogues on concrete educational issues.

Experimenting with an Organizing Model: Building a Transformative Social Movement for Educational Justice in Los Angeles

The introduction of this chapter included key questions about social movements. What kind of educational reforms should a social movement be fighting for? What kind of organizing model should be used to build a grassroots base of power? Are there reforms that can legitimately improve quality of education for low-income students of color and simultaneously open space for transformative social movements?

This final section explores some responses to these questions through an examination of an experimental grass-

roots organization in Los Angeles. The views in this section do not represent the views of the organization, Coalition for Educational Justice (CEJ). Rather, they are my views as one of the founders of the organization and a member of the CEJ Steering Committee.

In September 1999, a group comprised mostly of teachers but also including parents and university-based activists came together to form CEJ. The organization established unity around a strategy of building a long-term, multiracial, grassroots parent-student-teacher social movement to change public education. Further, the organization established unity around a broad political program that challenges racism and class bias in education with the following demands:

1. A moratorium on high-stakes testing and retention,
2. A massive infusion of resources for schools—particularly those in low-income communities of color—through a shift of state funds away from prisons and the implementation of progressive taxation measures,
3. The reinstatement of bilingual education and devotion of resources toward meeting the language needs of African-American students,
4. The creation of well-paid, meaningful, socially useful jobs in low-income communities of color, starting with an expansion of LAUSD's Teaching Assistant Career Ladder, which subsidizes predominantly students of color in their training to become teachers,
5. Massive expansion of university access for low-income students of color,
6. The creation of a community- and teacher-developed curriculum that is progressive, student-centered, and founded upon critical thinking and alternative assessments.

The moratorium on high-stakes testing and retention has emerged as the leading, or most high-profile, CEJ demand for several reasons. First, the testing policy is the latest egregious attack against low-income people of color. Building a strategic alliance to hinder the policy is the conscionable thing to do.

Second, because the impact of high-stakes testing will fall most heavily on low-income communities of color, opposing the testing policy opens space to organize new constituencies of low-income people, women, and people of color. These constituencies, with the active participation of antiracist whites and men, must form the leading core of transformative social movements. It is the collective life experiences of these constituencies that situate them as the main force in opposition to market-based, transnational capitalist, racist, and sexist principles—exactly those principles that must be frontally challenged in order to fight the multiple axes of oppression in society (Mann & Ramsey, 1996; Mann, 1998).

Third, the testing policies constitute the major "reform" in public education today, advocated by Democrats, Republicans, and independents alike. Without discrediting this "reform" that occupies so much political space, it will be very difficult for CEJ and other educational advocacy organizations to successfully put an alternative political program forward into the public debate.

Fourth, attacking high-stakes testing can unmask the bankruptcy of the dominant ideology in education today. High-stakes testing is both rooted in and supportive of ideas around meritocracy, racism, and faulty premises such as "rising test scores are an avenue to overcoming poverty and racism," "low-income people of color should be the ones who are held accountable," and "government functions better when it is run like a business." We must wage battle against these ideas if we truly seek to build a transformative social movement in public education—one that is putting forward an alternative model for public education that is qualitatively breaking from existing ideology and indicative of a radical restructuring of societal priorities. Waging ideological battle is most effective when the context is a concrete struggle over policy—like high-stakes testing—that deeply affects people's lives and a city's trajectory.

Fifth, opposing high-stakes testing opens great tactical opportunities. In the everyday operation of schools there is tremendous reliance on testing and "test preparation." There is also a frenzied political attachment, from a variety of forces, to testing policies. The possibility exists, therefore, that coordinated protest against testing policies could create a political crisis in schools and policy circles, opening new points of leverage against policy makers and new spaces for building political consciousness.

Though the nuances in CEJ's work will be shaped by cycles of action and reflection within the organizing, we must pay attention to central dilemmas and key strategic elements over the long term. Two sets of dilemmas will be discussed in detail here, and then others will be flagged in the course of the discussion on strategic elements.

Dilemmas

First, how do we assure that teachers will not dominate CEJ over the long term? Many teachers are from relatively privileged backgrounds, where their voices in public—including in front of classrooms—have been granted respect. Partially as a result of this, many teachers are comfortable speaking in front of groups. On the other hand, many parents and students have not had as many opportunities to speak publicly. Further, in a context where national teacher organizations are advocating that educators view themselves as "professionals," many teachers adopt elitist attitudes that justify talking over rather than listening to youth and parents, especially those from low-income backgrounds. In addition, teachers have easy access

to information about schools and district policies that many parents and students do not have.

If these inequalities and attitudes are not addressed in a straightforward manner, teacher domination of meetings and organizational decisions will flow unchecked. Given this, CEJ must reflect upon and be willing to change dynamics in parent-student-teacher interactions, organizing styles, and meeting and committee formats and must make efforts to create a culture of language equality.

Second, how does CEJ concretely build genuine parent-student-teacher trust and collaboration? This question is particularly problematic because schools—and by extension, teachers—have been legitimately viewed by many in low-income communities of color as oppressive and authoritarian. Further, many politicians subtly and explicitly encourage distrust and mutual blame among teachers, parents, and students. In order to address these obstacles, can CEJ effectively acknowledge historic tensions, explore feelings generated by these tensions, and seek solutions?

One flashpoint of tensions within and outside of CEJ might be around the issue of teacher pay raises. UTLA and other teacher unions all over California are currently seeking double-digit pay raises. Many rank-and-file teachers, including many members of CEJ, have become involved in mobilizing support behind this contract demand. Personally, I would not oppose pay increases for teachers. However, I do not believe that a demand for teacher pay raises should be part of an antiracist, progressive political program such as the one developed by CEJ. Teacher pay, benefits, and protections provide for a relatively comfortable quality of life, especially when compared to that of the majority of families with students in LAUSD. Although teacher compensation is an important issue, a progressive, antiracist movement's mission is to expose and challenge the most egregious forms of oppression, which do not include the undercompensation of teachers.

Throughout history, substantial sectors of the organized upper strata of the working class and the middle class, including teachers, have *philosophically* supported progressive and even antiracist political change. But when achieving elements of that progressive change has depended upon sacrificing pay or comfort, the majority in these classes, led by their union leaderships, have dispensed with philosophical support and protected what they have perceived to be in their economistic self-interest—pay raises and benefits. Given this, where will teachers, parents, and youth within CEJ fall when the LAUSD is deciding between devoting money to teacher pay raises or to books for low-income students? How will levels of trust be affected? If teachers and others within CEJ are not clear that teacher pay raises are *not* a part of the organization's political program, will parents, students, and community members see CEJ as an organization that is tied to the narrow teacher union agenda?

Key Elements of a Strategy for Building a Social Movement

Let's begin by asking what might constitute a progressive social movement. What might some strategies for building such a movement entail?

A Political Program That Constitutes a Challenge to Dominant Ideology and Requires Structural Change but Also Creates Space for Related Short-Term Demands

As argued earlier, a transformative movement must develop its long-term political program so that it constitutes an ideological challenge to racist, capitalist, and sexist structures. It is only through a qualitative break from existing capitalist, racist, and sexist ideology—rather than a quantitative, gradualist extension that is consistent with existing ideology—that a new vision of society, a new consciousness, and a new militancy can be built. The political program must also require structural change in government funding, distribution of wealth, urban power dynamics, and urban and industrial planning.

Yet short-term demands will emerge from the political program, and at different moments, these must be highlighted. These shorter-term demands may not in and of themselves require structural change in order to be implemented. But they may be very important to the immediate improvement of people's quality of life and to the opening of more political space for the movement as it builds support for its broader program.

For example, the six planks of CEJ's transformative political program always provide a broad framework communicated in CEJ's organizational leaflets and materials. However, we also highlighted the following short-term demands at a May 2000 CEJ press conference and through subsequent delegations to school board members: (a) LAUSD must accept all forms of Stanford 9 test exemptions from parents, (b) through all district media, LAUSD must inform parents and students of these exemptions, and (c) LAUSD must cease and desist from intimidating parents into not signing exemptions and from intimidating teachers into not talking about exemptions.

We felt that pressuring the LAUSD School Board to accede to these short-term demands would concretely support the rights of students and parents. Winning the demands would also open political space for CEJ—winning media attention, allowing for unhindered discussions with parents and students about test exemptions, and allowing for the possibility of creating short-term alliances with some board members.

Political Objectives

The central objectives of a transformative movement must be to (a) build political consciousness, (b) build leadership, (c) build long-term organization, and (d) win reforms that improve the lives of the most vulnerable in society.

CEJ has been developing an experimental organizing model in which we

put forth to parents, students, and teachers an analysis of education that is based explicitly on antiracist and antibias politics—centered around the six planks of our political program. We have viewed consciousness-raising as a process that emerges from dialogue around these explicit politics.

Many of us have disagreed with progressives who argue that we must organize with a "lowest common denominator" or "electorate focus group" politics. These progressives seek to avoid alienating middle-class people, especially whites. They therefore avoid using words like "racism" and censor themselves when it comes to describing what their long-term political vision is, out of fear that they might seem "too radical." Further, many of us in CEJ have rejected the argument that offering explicit political analysis in the organizing process is a form of undemocratic imposition of views upon people.

Rather, we see the necessity of explicitly naming racism and other forms of oppression. Though the group of people attracted to these politics may be small at first, the theory is that they will be strong ideologically and passionate about the mission to broaden the base and build power. Our confidence that an initial leadership core can build a broad movement over time is based on the belief that there is an existing constituency in Los Angeles—though largely unorganized—that is seeking political forms through which to engage in antiracist and antibias struggle.

Moreover, we have viewed the reluctance of many progressives to engage working-class people with explicit political analysis as, at best, an indication of an unwillingness to engage in authentic dialogue and debate and, at worst, a sign of disrespect for and underestimation of working-class people. Do these organizers believe that low-income people are not able to handle the assertive presentation of deep political beliefs or that they will simply adopt a politics that is presented to them with no debate or dialogue?

Toward the goal of building a long-term organization, CEJ is attempting to cultivate new leadership by creating a committee structure that gives people (so far, mostly parents and teachers, with a real weakness in youth participation) many spaces and manners in which to participate. Further, we are seeking to self-consciously rotate responsibilities and "project leads" so that as many people as possible may obtain a breadth of experience. Perhaps most importantly, CEJ has begun to institutionalize a process for self-reflection. We regularly assess and criticize our organizing and outreach work through report-backs, debriefings, and goal-setting sessions.

In its very limited existence, CEJ has won small reforms in LAUSD and union policy. We have struggled to find a balance between the desire to celebrate these modest victories and the necessity of theorizing the reforms, that is, seeing them only as beginning steps toward a long-term transformation. We are developing a social movement theory of education

reform, where reforms for the sake of reforms and unconsolidated reforms are critiqued, and structural reforms that open political space for transformative social movements are sought.

In February 2000, CEJ organized behind a motion that overwhelmingly passed through the UTLA House of Representatives. The motion made it union policy to oppose the administering of the Stanford 9 test on the basis of its high-stakes, racist, and class-biased character. With ongoing CEJ pressure and the new policy in hand, the union leadership appealed to LAUSD Interim Superintendent Ramon Cortines to cancel non–state mandated portions of the Stanford 9 for the 1999–2000 testing year. Within days after CEJ and UTLA leadership collaborated on collecting petitions from around the district, Cortines acceded, assuring that students would endure fewer hours of testing and "test prep," thereby protecting more instructional time.

CEJ claimed the limited victory and attempted to publicize the organization and the political message in the days afterward. Yet an ongoing process of critical self-reflection has been necessary to assure that (1) CEJ members do not fall under the illusion that the victory brings us substantially closer to the realization of our broad political program, and (2) CEJ members avoid seeing UTLA as a long-term ally, instead seeing the union leadership as a force that, for a moment, flowed in a direction similar to ours for a variety of reasons, including our pressure.

Main Base

The main base of transformative movements must be composed primarily of the most vulnerable in society—low-income people, people of color, and women. There are five major reasons for this. First, as stated earlier, their objective life experiences situate them as the main force in opposition to market-driven politics, transnational capitalism, racism, and sexism. Second, the building of progressive movements with acknowledged and celebrated multiplicity creates the space to reconstruct race, class, and gender categories. These categories must be newly understood for a viable progressive movement to be sustained (see Kelley, 1998). For example, white people must, through the practice of engaging in meetings and political actions, understand the myriad ways in which they have benefited from white privilege. In a multiracial group context, then, they must struggle to find the appropriate roles for themselves within organizations (Lipsitz, 1998).

Third, placing a priority on the leadership of low-income people of color—with a focus on women—creates a space in which whites and males can be challenged to reject sexism and privilege in favor of broader politics. Fourth, by acknowledging the priority of winning reforms that specifically benefit the most vulnerable, a space is created in which narrow self-interest can be challenged as the primary motivator in politics. In the broader context, the most vulnerable people in the

United States and in the world need loyal political allies among the middle classes in order to win a massive redistribution of resources. Such allies will not emerge primarily out of self-interested motives. This quality of ally will emerge only through a spirit of altruism—of choosing to give up fruits of privilege. Fifth, victories that benefit the most vulnerable, while the hardest to win, can benefit the whole society. Expansion of a bus system that serves primarily low-income people of color may end up creating an infrastructure for real transit access for all; the creation of tutoring programs in inner-city schools may end up being extended to an entire district, benefiting white, middle-class students as well (on the main base in organizing, see Mann & Ramsey, 1996; Mann, 1998).

After nine months of organizing, in early 2001 CEJ had a small but expanding base and our active base—which participates in committees, actions, and petition collecting—consisted of approximately seventy-five teachers and thirty to forty parents citywide. Hundreds more teachers have come to meetings, know of CEJ, and consider themselves loose allies. Through a series of community meetings, we have engaged approximately 400 parents in conversation about the CEJ political program. In addition, we have tight links with a youth group that helps to bring high school students into the work. Most of our resources now go into building our parent and student base to address our weaknesses in those areas. For many of us, it is a major goal to have equal representation of teachers, parents, and students in the organization in the next year.

Political Independence from Parties and Unions, with a Policy of Unity and Struggle

A transformative movement must assert its political independence. For those of us attempting to build progressive, antiracist movements, two of the main forces that we must challenge and differentiate ourselves from are the Democratic Party and the AFL-CIO leadership. Both of these forces have been apologists for and, ultimately, defenders of the inequalities inherent in U.S. capitalism, racism, and male domination. They have advocated "getting a bigger piece of the pie" for workers and electoral interest groups while not only avoiding challenges to the most central elements of institutional racism and class domination but also becoming a leading force in regressive politics such as support for an imperialist, prointervention U.S. foreign policy, anticommunist hysteria, or anti-immigrant policy.

However, there are also more progressive strands within the histories of the Democratic Party and the labor movement, reflected in the Democrats' support of abortion rights and the creation of New Deal poverty programs. These strands give them a particular hold on the political allegiances of many low-income people, people of color, and women. CEJ must seek to point out these very contradictions in

the politics of the Democratic Party and AFL-CIO leadership in the realm of struggle over concrete policies.

A recent example of a struggle over the destructive "pragmatism" and regressive politics of these forces could be seen in their relationship to Proposition 227, the referendum that effectively banned bilingual education. A substantial group of teachers, parents, and students—many of whom are now involved in CEJ—staked out a position that affirmed bilingual education after the referendum passed. This group prepared to take militant action in organizing support for the reinstatement of bilingual programs.

However, the UTLA leadership threatened those teachers who were advocating noncompliance with the 227 law, claiming that such teachers would not be defended by the union, thereby opening them to potential lawsuits and dismissal. Meanwhile, Democratic Party leaders recommended that we make the best of a bad situation. Before the election, they advocated a "compromise bill" that would have ceded the antibilingual and anti-immigrant ideological victory to the pro-227 forces but protected some elements of local school control. In a startling move, the Democratic speaker of the California Assembly, Antonio Villaraigosa, counseled that "racism" not be discussed in opposing 227.

This was only the most recent reflection of the flawed Democratic Party strategy of capitulation and appeasement—going quietly on record against racist initiatives while not really fighting against them, saying they cannot be allowed to become "make or break" issues for the party. This strategy has led to an immeasurable level of demoralization among progressives who have found themselves struggling against racist propositions that use the terms of the Right while being expressly prohibited by the Democratic/AFL-CIO coalition from using terms like "immigrants' rights" or even "affirmative action" (for more on this struggle see Caputo-Pearl, 1998).

If CEJ holds to a position of independence from the Democratic Party and AFL-CIO, this does not mean that there is to be no interaction with these forces. On the contrary, a policy of independence must be merged with one of unity and struggle. Short-term alliances and unity with the Democrats and AFL-CIO should be sought wherever possible, but independence and political struggle should be asserted whenever necessary.

Long-Term Strategic Planning with Targets, Allies, and Tactics

A transformative movement must choose as main targets the institutions and individuals who have the power to meet the movement's demands. In the case of CEJ, Governor Gray Davis, the LAUSD School Board, and the LAUSD superintendent are the main targets.

To build pressure against these targets, a transformative movement must seek strategic and tactical allies in all forums—including labor leaderships, political parties, small businesses, and

so on. Strategic allies are those that share the movement's political demands and strategic vision over the long term. CEJ is beginning to explore a strategic alliance with some youth groups based in communities of color who are fighting against the prison-industrial complex. Tactical allies are those that may support one movement demand in a particular moment, as UTLA leadership did when helping CEJ pressure Interim Superintendent Cortines.

A transformative movement must develop political tactics that pressure targets to accede to demands. Tactics are concrete events, such as press conferences, demonstrations, civil disobedience, poster campaigns, letters, petitions, meetings, motions within union structures, and the like. The primary tactics that CEJ has used in its very young campaign are motions within UTLA, a press conference at the school board, a new petition drive targeting the LAUSD School Board, and delegations to school board members.

Conclusion

At the writing of this chapter, there is much conjecture about the emergence of a new progressive social movement across the United States, given momentum by the protests at the World Trade Organization in Seattle and the International Monetary Fund in Washington, D.C. While there are certainly positive aspects to this new movement, two of its weaknesses have been its over-focus on challenges to corporate power—somewhat to the exclusion of challenges to racism and sexism—and its emphasis on short-term anti-institutional civil disobedience rather than long-term political strategy.

It has been the goal of this chapter to provoke debate in progressive, Left, and liberal circles around issues of educational reform and social movement building. I have attempted to address the explosive intersections of class and racial oppression in education—at the nexus of dominant ideologies and high-stakes testing—and the necessity to challenge both along with gender oppression.

Further, I have attempted to provoke discussion around what is needed to build a long-term political strategy in education. The strategy that I hint at is one that goes beyond short-term actions of civil disobedience. Rather, it attempts to blend anti-institutionalism with a "through the institutions" approach that sees ongoing engagement with "the powers that be" as vital to winning reforms, building a multiconstituency movement, challenging dominant ideology, and achieving moral legitimacy. I hope that this article contributes to these much needed debates.

TABLE 1
Coalition for Educational Justice (CEJ)

This year, LA Unified School District will hold students back a grade (retention) in the 2nd and 8th grades if they don't pass certain "standards." By 2001 and 2002, LAUSD will hold students back in all grades based substantially on the Stanford 9 standardized test and others (given in English). Why should we oppose this?

High-Stakes Testing and Retention Are Class-Biased and Racist

1. Low-income students, who have fewer resources at their schools, aren't given an equal chance on these tests. Retention policies tied to test results, therefore, are class- and racially discriminatory because poverty mostly affects immigrants and communities of color. For example, LA County schools are hyper-segregated and students in communities of color are 12 times more likely to be low-income than students in white communities. Low-income students of color are also more likely to lack basic materials at their schools, and are 6 times more likely than white students to have less experienced teachers.
2. When given only in English, tests measure national origin more than mastery of school material. When tests are language-biased, otherwise competent students are punished for not speaking English fluently.
3. The tests are culturally biased as mostly middle-income, white test makers produce tests that measure the knowledge and experiences valued by middle-income whites. They ignore the knowledge and experiences valued by other cultures.
4. Schools in low-income communities of color in particular, where test pressure is highest, focus on destructive "Back to Basics" lessons and testing drills. They also "track" students. "Back to Basics" does not have high learning standards. Wealthy schools more often do rigorous, project-based learning.
5. Low-income students are retained twice as often as high-income children. Students of color are retained in large numbers. Retention contributes to the high dropout rate among African-Americans and Latinos, as compared to whites. The gap between white students and students of color is widened, not narrowed.

High-Stakes Testing and Retention Hurt Learning, Students, and Teachers

1. Standardized tests do not measure creativity, problem-solving abilities, ethical thinking, and many other things central to learning. They mostly measure what is crammed into students' short-term memories.
2. Positive jumps in test scores are often due to narrow test coaching rather than real learning.
3. Most students like school less when their classes and time are focused on standardized tests.
4. Retention contributes to academic failure rather than to success in school. A single grade retention increases the chances that a student will drop out by 50%. A second retention increases the risk by 90%.

(continues)

TABLE 1 *(continued)*

5. Retention blames poor performance on children, not on the school district. Rather than transform schools, retention policies make students repeat an experience that failed them before.
6. Testing hype puts negative pressure on teachers and stifles their creativity.
7. Ongoing tutoring without retention should be greatly expanded for students with academic needs. The focus on retention ensures that only narrow, pressure-filled tutoring programs will exist.

TESTING AND RETENTION PUNISH MOSTLY LOW-INCOME STUDENTS OF COLOR FOR THE FAILURES OF SCHOOL DISTRICTS. GET INVOLVED IN CEJ. *Call Alex Caputo-Pearl (310–452–3310), Ramon Martinez (213-389-3418), or a campaign representative at your school for more information.*

TABLE 2
Coalition for Educational Justice (CEJ):
Six Demands That Would Really Improve Schools

1. Place an Immediate Moratorium on High-Stakes Standardized Testing and Retention.

2. Devote More Resources to Classrooms. Reduce class size, build more environmentally safe schools, develop teacher peer assistance, hire and train more teaching assistants and other staff, raise school workers' pay, fully stock classrooms with culture- and language-appropriate books and materials.

Why? Smaller class and school size, as well as competent teachers, are important for all students, especially low-income students of color. The *LA Times* has documented severe textbook shortages in LAUSD. Little is being done to provide thousands of new LAUSD teachers without credentials with adequate assistance, while poor conditions and low pay discourage the hiring of credentialed teachers and other school staff.

3. Reinstate Bilingual Education in the Whole District and, in the Meantime, Protect Existing Bilingual Education Programs. Devote Massive Resources to Supporting the Language Background and Needs of African-American Students.

Why? LAUSD attacks immigrants' language rights by promoting monolingualism and the dominance of English over other languages. It marginalizes African-American students around issues of language. Further, educational access rights are denied to immigrants who would do better in bilingual classes. Bilingual programs in LA's Eastman Elementary and other states teach content, English, and other languages. In an increasingly small world, we can celebrate multilingualism rather than narrow our language choices by developing Early Second Language Development Programs for all students.

4. Raise Student Achievement Through University Access and Job Development. Build university affirmative action programs and expand Paraeducator Career Ladder and Multilingual Teacher Academy.

(continues)

TABLE 2 *(continued)*

Why? UCLA and other universities are more and more exclusive. The 1999 UCLA freshman class had an average GPA of 4.24 and SAT of 1330. Its student body came mostly from families that earn between $100,000 and $150,000 per year. Representation of African-Americans, Latinos, and Native Americans is decreasing, down to 13%. High Potential Programs, like that of the 1960s at UCLA, can open university access to student leaders from low-income communities of color who could not meet requirements because of poor conditions at their schools. Secondly, over 300,000 medium-wage jobs left LA County between 1979 and 1993, as corporations went elsewhere and government cut jobs. Working class people of color held many of these jobs. Expansion of the program that prepares teaching assistants (paraeducators) to become teachers could create jobs in low-income communities of color and address the teacher shortage.

5. Build a Student-Centered, Activity-based, Teacher- and Community-Developed Curriculum That Uses Alternative Assessments to Measure Student Growth, and That Brings Out Intellectual Curiosity, Critical Thinking, Cooperation, and Democratic Values

Why? Students do better in activity- and project-based classrooms that use performance-based assessments than in the "Back to Basics" classrooms that focus on drilling and standardized testing. Activity-based classes help students build their own points of view, rather than just hear the narrow points of view in the standard curriculum. The LAUSD Board approved reading programs that use "Back to Basics" approaches that are not good for students, particularly English Language Learners. Second, real local control of schools results when parents, students, and teachers can develop the learning programs rather than government and business people in Sacramento.

6. Shift Spending to Education. Reallocate money from standardized testing contracts, prisons, military, and corporations to schools.

Why? We need money to transform our schools. We can challenge the explosive growth in prison and military spending, fight for higher corporate taxes, and redistribute money that LAUSD already has.

To get involved in the Coalition for Educational Justice (CEJ), call Alex Caputo-Pearl (310-452-3310), Ramon Martinez (213-389-3418), or a campaign representative at your school.

Notes

1. Italian political theorist Antonio Gramsci believed that dominant social classes would advocate sets of assumptions, ideas, and myths—sometimes incoherent and contradictory—that eventually would become adopted by the majority of society as foundational. Regardless of its morality or lack thereof, this "dominant ideology" becomes hegemonic, or extremely influential, across all sectors of society. Once dominant ideology is embedded as "common sense," it can guide policy and lead to political consent from

the majority of all sectors of society even when its policies may be destructive in particular sectors (Sassoon, 1982, pp. 12–17).

2. In 1994, white high school dropouts had a higher employment rate than African-Americans and Latinos with high school diplomas. Seventy-three percent of white high school graduates not enrolled in college were employed, twice the percentage for African-Americans and almost triple the percentage for Latinos. Further, wage rates for white high school graduates far exceed those for high school graduates of color (U.S. Department of Commerce, 1994).

3. While well over 90 percent of white students finish high school, fewer than 85 percent of African-Americans and 61 percent of Latinos finish. In most low-income inner-city districts that disproportionately serve students of color, the dropout rates are two to four times as high as the rates in the surrounding suburbs that disproportionately serve white and middle-class students (Macias Rojas & Gordon, 1999) Nationwide, students of color and low-income students are retained at rates much higher than those of white and middle-class students. A single grade retention increases the chances that a student will drop out by 50 percent. A second retention increases the risk by 90 percent (Roderick, 1995).

4. In the 1980s, the ten highest per-pupil-spending elementary school districts in Illinois, New York, Ohio, and Texas—vastly white—outspent the ten lowest per-pupil-spending districts—vastly of color—by more than two and a half times (Lowe, 1997, p. 16).

5. Heavy concentrations of these jobs exist in southern California, Silicon Valley, Wall Street, the Boston suburbs, and Seattle.

6. Los Angeles is a major center of international trade and banking; a command and control point for the organization and functioning of the world economy; home to dramatically expanding white-collar financial, legal, and business services sectors; a major center of both international tourism and immigration; and home to both a transnational corporate elite—a well-paid sector of professionals working in government, business, and international organizations who support the transnational corporate agenda—and a growing multinational working class that is disproportionately represented in low-wage service sectors, low-wage manufacturing, the penal system, or unemployment lines (for more on world city theory and Los Angeles political economy, see Keil, 1998; Friedmann & Wolff, 1982; Friedmann, 1995; Soja, Morales, & Wolff, 1983.)

7. In Los Angeles, average real earnings for male full-time, full-year workers dropped from $32,000 in 1969 to $25,000 in 1990. In 1969, 7 percent of full-time, full-year workers made less than $15,000, while by 1990 the figure had risen to 19 percent. In 1989, wages for the poorest fifth of families as a percentage of wages for the wealthiest fifth was lower in LA than in any part of the United States (Mosely, 1996). In South Central LA, which is overwhelmingly African-American and Latino, unemployment rates annually stand at 30 percent or above, with portions of the African-American community hovering around 40 percent to 50 percent (Keil, 1998, p. 218). From 1993 to 1997, the average income of California's richest 1 percent grew by 57 percent to almost $900,000. For California's poorest working families, the average income in 1997—$13,000—reflected a 13 percent drop since 1989 (Arax, Curtius, & Nelson, 2000).

8. California has committed over $4.6 billion to building more state prisons, county jails, and youth facilities in the past fifteen years, plus $3.4 billion in interest. Since 1986, state prison costs have grown from 3 percent of California's General

Fund to 9 percent (Southern California Criminal Justice Consortium, 1999).

9. In New York's retention program, called Promotional Gates, many students were "flunked" repeatedly because they could not pass a reading or math test. The retained students had lower achievement, higher incidences of disciplinary problems, and higher dropout rates. Georgia implemented a retention program in 1980, based significantly on standardized tests. The high school completion rate in Atlanta, where the most underresourced schools were, dropped from 75 percent in the late 1970s to 65 percent by 1982 and then to 61 percent in 1988. In Texas, under high-stakes testing and retention policies, African-American and Latino graduation rates dropped from 60 percent in 1978 to below 50 percent in 1999, compared to 75 percent for whites. In Chicago, thousands of retained eighth-grade students are "unaccounted for," assumed to have dropped out after repeating grades under horrible conditions (Darling-Hammond & Falk, 1997; McNeil, 2000; Woestehoff, 1999).

10. Some of these tests, like the STEPS, are better than the Stanford 9 as performance assessments because they rely less on multiple choice and more on problem-solving and open-ended answers. However, the use of them as high-stakes tests determining grade promotion makes them as racially and economically discriminatory as the Stanford 9.

11. Riordan's inner circle also put $2 million into the 1999 LAUSD School Board elections in support of four candidates. Each candidate won, establishing a majority, and the election went on record as the most expensive school board race ever in U.S. history.

12. Other comments by different eighth graders included: (1) "The gifted kids already say I'm a slow-brain. I've told my mom that I don't want to go to school because I don't want to fail. I don't want to be stupid. I cry thinking about it." (2) "I told my mom I was seriously thinking about not going to high school but she told me about the consequences, so I told her I would try it" (Sauerwein, 2000).

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RAISING THE STANDARDS FOR DEMOCRATIC EDUCATION

Research and Evaluation as Public Knowledge

John Willinsky

The standardized testing movement in the schools may be the product of educational research, but our growing reliance on these tests is scientifically shortchanging the education system and the nation. The tests are developed through advanced statistical methods, subjected to reliability and validity assessments, and utilize controlled conditions and sampling principles, all to ensure a measurement of student achievement that is as accurate as possible. They represent another reassuring application of the modern scientific methods that deliver clean water to our taps and cool air to our air-conditioned homes on a hot day.

Yet the one-size-fits-all approach of standardized testing may be misaligned with today's diverse economy, as labor economist Robert B. Reich (2000) has pointed out, and I would also add that they set far too low a standard for the scientific contribution to an education system that serves the nation well. Given all that the realm of educational research has to offer, the tests represent a decidedly retarded view of research and a diminished conception of the democratic character of public schooling. That is, while most everyone would agree that test performance does not encompass the whole of what it means to learn or to be educated, we also need to recognize that the tests do not encompass the whole of the truth that research has to offer on the school experience, just as a faith in testing does not deliver what should be expected from an education system in a democratic society. We need to raise the standards of accountability for research and education so that we are working from a far more complete and diverse picture of what is required to create a democratic and educated society.

Educational research rarely tells a singular story and rarely offers but

one answer, and even then, it is certainly not the sort of answer that test scores offer, in which a single number, sitting in comparison with others, determines the fate of a child, a teacher, a principal, a school, a district. In the face of public faith in what the test scores say about the schools, people need to appreciate that research already affords, largely at public expense, a far-reaching understanding of what it means to send children off for a dozen years to learn about as many subjects, across a handful of public and private schools. Contrast that understanding with this current focus on a singular measure of how our children are learning, whether a school is good or bad, which provides little public incentive for discussing questions of educational means and ends. Thinking about test score standards, measured against national curriculum standards, displaces local and global thinking about what the school should be like and how it can serve the children and the community. Poor test results suggest the need for test mechanics to come in and tune the schools for better performance, better results.

The tests may well reassure the public that they know how this school compares to that school on a single measure, but they do little to inform the public about the nature of education and about the risks and possibilities of learning, which is something that educational research is good at, something that could go some distance in developing the conditions of a more deliberative democracy. We want to set a standard of accountability for education and the research that supports democracy, that allows—to call on one of public education's most traditional goals—for a strengthening of democratic purpose and process, especially as that purpose and process concerns the schools themselves.

Let us raise the standards, then, of educational accountability. The public deserves to know more, far more than standardized test results can tell. People deserve to know more not only because they have already paid for this wealth of educational research, not only because their children's and their own future depends on what it has to tell us about the education system, but also because such knowledge is vital to democracy, and because people might well wish, as a result of this education, to learn more about learning. This is a call for strengthening the basis of participation, of informed advice and consent. If the current standardized achievement standards do not help us think about different approaches to educating bilingual children, about creating an appreciation of literature and other arts, about developing critical thinking skills, about improving the health and well-being, the different talents of students, then those measures are not helping education's democratic project.

We need not abandon the standardized tests. They are one of the several sources of information that are needed within the context of the larger process of inquiry in order to examine what it means to learn and teach, and how that relates to the economy and

the welfare, the culture and the health of the nation and the planet. The goal is to raise the standards of public reason and deliberation as a means of increasing the quality of democratic life.

The challenge in adhering to and developing these standards of more democratic forms of education and governance resides in developing new expectations—and the corresponding information technologies—for the public value of this research among educators, researchers, policy makers, and the public. To make standardized test results the sole public face of educational research and evaluation, as we have at this point, is like making a baseball player's weight the sole statistic available not only to those watching the game but to the team's manager, coaches, and owners.

The research community needs to take far greater responsibility for bringing into the public discourse about education the complex and varied understandings afforded by research into how students learn. The lack of talk about any research except test results is not a failure on the part of the public, the policy makers, or the educators. Researchers have not made access to this understanding easy; research standards have yet to include consideration of a work's contribution to public deliberations. It is time to focus on how educational research constitutes a public good.

The standards for public reason and deliberation, informed by research, can only be raised, however, through support from both the research community and the public. As with any work or performance, the relationship between the producer and the audience can build an experience that goes beyond what either had thought possible, an experience that creates, in effect, a new standard for both parties. So this plea for raising the standards by expanding the expectations for the public value of educational research and evaluation is addressed to both the research community and the public, in the knowledge that an appreciation of its critical contribution to extending the educational reach of democratic possibilities will need to come from both.

As things now stand, with the public regarding a singular standard for student achievement as the whole of the educational question, not only is the democratic basis of education diminished but the entire research-into-policy system is open to large-scale abuse. In fact, I offer a case study in the misuse of research, in the vital area of teaching the young to read and write, to demonstrate just how critical it is to set this new standard for educational research as a viable form of public knowledge. This case study will demonstrate that while researchers are very good at policing the standards for research as professional practice, they have a distance to go in appreciating the standards for research as a democratic form of public knowledge. And until the whole of educational research becomes part of that public standard, the schools are left to the dictates of research's most singular and narrow form of inquiry, the achievement test.

Research and Democracy: A Case Study

In 1997, Bonita Grossen published the influential white paper, *Thirty Years of Research: What We Know about How Children Learn to Read*, through the Centre for the Future of Teaching and Learning in Santa Cruz, California (Grossen, 1997). Her synthesis of reading research was intended to demonstrate that a consensus had been reached on the value of "code-oriented" or phonics curriculums when it came to teaching children to read. The paper, which drew on a good deal of research from the National Institute of Child Health and Human Development (NICHD), delivered an assured and singular answer to the question of what we know about reading, and it has played a significant role in successful efforts to shift the educational programs of Texas and California.

Yet it was not long before the paper's claims were called into question by Richard Allington and Haley Woodside-Jiron, two educational researchers at the National Research Center on English Learning and Achievement at the University of Albany (1999). They found Grossen's white paper to have misrepresented the research and thereby to have proposed essentially unsubstantiated instructional recommendations for teaching reading. Allington and Woodside-Jiron then argued that this "misuse of educational research" was grounds for questioning "the reliability of any 'consensus' document whenever 'research' is used as a policy lever," and they advised the American Educational Research Association (AERA) to "develop an early-warning system and a viable procedure for responding to similar advocacy events in the future" (1999, p. 11). Their Cold War rhetoric of early-warning defense systems suggests just the sort of boundary between university-based research and the public arena of policy making that needs to be overcome.

Allington and Woodside-Jiron were obviously concerned that "consensus documents" such as *Thirty Years of Research* can distort the autonomous and independent nature of research and researchers in the name of having a greater public impact. My concern here is that the shroud of suspicion that they would cast over public *advocacy* and *consensus* only serves to absolve researchers of their civic responsibility for ensuring that their work informs democratic deliberations about education. Such suspicion lowers the researcher's public accountability, and it reduces, in turn, the prospect that research might contribute to the public's thinking about education, leaving that field to the narrow channel of standardized test results as the sole scientifically based measure of what schools are doing. While I have no objection to AERA setting up a committee to monitor the public uses of research in an effort to prevent misrepresentations of research results, I think this should be only the first and not the final step in increasing the public presence of educational research, especially at this

time of great changes in scholarly publishing.

It does seem apparent that academic journals will inevitably migrate to the Web over the next decade for reasons of economy, productivity, and plain convenience (Ekman & Quandt, 1999). However, in a field such as education, researchers face a critical choice in this process. They can simply let it happen so that the basic process by which researchers publish research for other researchers goes unaltered, or they can actively work with these new technologies and our own research practices to improve the public presence and value of educational research, with an eye to making this research more accessible, coherent, and comprehensible on a public scale (Willinsky, 1999, 2000). Researchers in education should be encouraged, for example, by how quickly the public, in considerable numbers, has taken to using on-line medical and financial research services.[1] The research community should see this process of "going public" as a way of limiting the political misuse of research, as a way of raising educational standards by enabling the public to learn far more than it could before about the risks and possibilities of schooling—knowledge that can be shared on a global basis. Where should reliable and rigorous educational research stand with principled, progressive advocacy, consensus, and public concern when it comes to such critical educational issues as literacy? At stake is the very integrity of the research enterprise.

Research's Public Value

Whether it represents industry alliances, social issues, environmental concerns, or consumer groups, the interest group has increasingly come to represent the forceful public voice of advocacy with significant political clout.[2] Interest groups have been particularly active around educational issues, getting behind state referendums on bilingual education and affirmative action, for example, as well as the teaching of evolution.[3] Now, it may be tempting to think of interest groups as a distortion of the natural course of democratic processes, to see them as the opinionated and vested ganging up against the individual expression of equal citizens, but interest groups also represent a freedom of association around deeply felt values, issues, and interests, if only in response to a politics of issue-less candidate consumerism.

What we need to recognize is that advocacy has raised the public profile and deliberative role of research. Allington and Woodside-Jiron make this clear in identifying three forms of advocacy in their questionable case against Grossen's work: "(a) The appearances of NICHD staff and NICHD-supported researchers before policymaking forums, (b) the widespread dissemination of this research through the popular print media, and (c) the use of a particular policy tool—a white paper (Grossen, 1997)—that purports to summarize the NICHD-supported research" (1999, p. 4). The flaws of the Grossen

paper aside, my concern is that the public uses of research are not inimical to the goals or quality of scholarship. Researchers have long been advocates, especially with literacy—whether for or against code-oriented curriculums (Stahl, 1999). However, the research community, rather than reinforcing its defenses against the political use of flawed work, needs to do more to make its work part of the public domain, which would provide, among other things, its own check on such abuses.

What might the increased public presence of educational research look like? Let me offer a quick-sketch version. Think of a public access Web site developed in conjunction with postprint journal publishing that would enable educators, policy makers, and researchers to survey related studies. This would need to be more than AskERIC, which provides a list of authors and titles linked to abstracts, although it could start that way.

Say one was interested in research on learning to read and chose Grossen's *Thirty Years of Research*. To appreciate what research has to offer in this on-line universe of knowledge, one should then be able to link not only to the studies that Grossen cites but also to the subsequent studies that have cited her study and the studies she cites, through a two-way citation process. This would enable readers to see how well these works have stood up to critical comment. It would enable one to access formal reviews of Grossen's work (such as that by Allington and Woodside-Jiron) and to join informal discussions that have referred to it. One should also be able to link to the relevant policies and practices in various states, to appreciate how this research works.[4] Such a public knowledge Web site could be supplemented by specialized dictionaries and sites about practice and application, much as the National Library of Medicine's MEDLINE*plus* provides for health research.[5]

It would take much experimentation, collaboration, and research to develop an accepted and sustainable standard for a public-access site like this. But such a site would drive up the level of debate among interest groups while providing people and policy makers with greater confidence in using research as part of the deliberative process. Thus it would speak to Penelope L. Peterson's concerns, expressed a few years ago in her presidential address to the AERA, "Why Do Educational Research?" wherein she insisted that the goals of this association and thus of its membership were not only to "ensure the continued funding for research" but to "communicate the findings of high-quality research in ways that influence policy and practice" (1998, p. 9).

The current standard of the value or quality of research assesses its internal consistency, the validity and reliability of its measures, and the soundness of its conclusions. Yet what we just as often herald in our work, from the initial funding proposal to the study's conclusions, is the claim that our research offers practitioners and policy makers, parents and the

public, the nation and the world a better understanding of, say, students' reading and writing. This may not apply to all educational research, but when we are pursuing a scholarly understanding of literacy, at some point it seems fair to ask whether what we know could offer more to people who want to understand more about literacy and to act on that understanding. We are educators, after all, and this element of *public* education seems worth our attention at a time when the very medium of scholarly communication is changing.

This does not mean abandoning peer review and other methods of ensuring the distinguishing quality of research as a form of knowledge, however imperfect these might be. However, it does mean thinking more about how research works in public and whether, by design and publication, it could work better in helping people think about what they want from schools. It may be too soon to argue that the public's capacity for research is increasing with this Web-borne age of information, but to judge from the medical and financial research sites at least, people are hungry for knowledge that once was the sole domain of experts and professionals.

The contribution of educational research to policy making need not be seen as external to its scientific claims. Rather, it can be seen as another potential validation of these claims. As literacy research often seeks to better understand how educators can improve children's reading and writing, it seems appropriate to judge its effectiveness as it informs those involved in the democratic process of setting and enacting educational policies.

We may refer to this process, a little self-righteously I find, as "talking truth to power," and yet it calls for more than keeping a watchful eye on public uses of this knowledge like librarians who see themselves as, above all, protectors of the books. It calls for improving the public's ability to tap into the truths and powers that this knowledge offers as if that were the very object of undertaking this research. This, in turn, will raise the standards of both the schools and the talk about the schools. It will also lead us to expect more educational work from both researchers and the public. Research into educational practices should matter to people, all the more so in an age of interest-group politics. The public quality of this knowledge is surely the best protection against its abuse by the politics of expertise.

Knowledge without Consensus

A critical point for raising the standards of educational accountability—which I am proposing we do by increasing the public quality of research on the schools—is whether the public has a stomach for results that do not reflect a consensus among researchers. To stay with our case study, Allington and Woodside-Jiron's critique of *Thirty Years of Research* is principally based on its pretense to represent a consensus among literacy researchers. As I noted above, Allington and Woodside-Jiron end up calling the

very concept of consensus into question, at least in policy settings: "The research community, in our view, should be concerned about the reliability of any 'consensus' document whenever 'research' is used as a policy lever" (1999, p. 11). I agree, and I hope to see that concern extended to the public's own regard for consensus among researchers. The value of research's contribution lies in the detail, in how it renders the differences among programs, the overlooked consequences, and the nature of students' and teachers' experiences.

Yet a consensus is also at work here, a consensus on the validity of such differences in research approaches and findings. Researchers are trained very well to scrutinize each other's work, with its divergences and distinctions, identifying its strengths and weaknesses. This ability to judge the quality of divergent work is surely part of what the research community has to offer, part of what makes this form of knowledge interesting and potentially helpful. While it may seem that the public and the policy makers will balk at any research that does not represent researcher consensus, policy makers at least have learned to work with a range of what Barker and Peters call "cognitive difficulties" posed by the relevant research, from the merely complex to the scientifically unknown and perhaps unknowable (1993, p. 2).

If the public can set aside the idea that research is a process of arriving at a singular, universal truth, at least with something as complex as learning to read and write, it will have the chance to better understand how literacy can be encouraged and studied in different ways. Rather than bolster the impression that research seeks a consistent and single-minded body of findings that would dictate, in effect, how to teach literacy—as if the decision of how to teach should be left up to the experts—we would do better to develop ways of representing the divergence and the agreement within this field of inquiry. Knowing the possibilities and risks identified so far, knowing the challenges that research still faces, provides its own comfort, its own basis for taking action in the face of always partial knowledge.

On the one hand, presenting this consensus about divergence seems simple enough. We make plain for people how the research has been divided, neatly so at times—much as is the field of practice—between code- and process-oriented, phonics and whole language. Go back to that public access Web site I sketched out earlier and imagine a series of concept maps and summaries representing the division between code and process studies, with commentaries bringing into juxtaposition comparable studies between the two schools of thought.

This division is made abundantly clear by Stephen Stahl, a professor of reading education at the University of Georgia (1999). Stahl's own tireless research efforts over the years capture the divergent literacy goals that divide the two approaches, while demonstrating that the impact on learners, whether in motivation or achievement, has often failed to differ, apart

from signs that whole language, for example, favors voluntary use of reading strategies, while its lack of interest in reading achievement diminishes test scores. Stahl also demonstrates how either of these reading programs appeals to a worldview among educators and researchers that encompasses more than the impact of test scores. Researchers need to help people see why studies might differ; they need to help people see the difference made by those differences. But this brings me to the more difficult part of representing this consensus over the divergent state of the research.

For, as things stand, these differences diminish the public impact of research. While he was editor of *Educational Researcher*, Robert Donmoyer wrote on the topic of talking truth to power: "As long as the research community tells the policy community contradictory things, the research community cannot expect to have much influence in decision making" (1997, p. 2). One challenge is to find ways of presenting studies that challenge and contradict what has come before in a way that enables people to judge for themselves, or in a way that invites additional studies to further resolve the matter. Another challenge is to design and present studies that support ready comparisons and contrasts among divergent stances, as Stahl, for example, notes how less than half of the forty whole language studies he examined used achievement measures favored by code studies, although in fairness adequate assessment would require that mutually acceptable measures be used (1999, p. 17). It should be obvious, then, that rendering research as a public resource of greater coherence and comprehensibility, even in its differences, will take far more than a nifty Web site. It will require a rethinking of the standards and practices that guide our scholarship; however, such a rethinking seems appropriate to this whole question of what we want to do with these new technologies for managing and sharing knowledge.

We might think of this enterprise as extending the example of the open inquiries of the National Academy of Sciences, which are making "going public" a regular part of what it is to do in publishing research. This could well augment public confidence in research, policies, and resulting practices while offering researchers a concrete relationship with an expanded audience. This is to use the Web as the printing press was originally used when scientific journal publishing began somewhat more than three centuries ago, to expand the reach and usefulness of knowledge (Eisenstein, 1979, pp. 543–566).

Up to now, this new medium has been largely directed at making it easier for researchers to publish their research for other researchers, which may well increase access among researchers on a global scale. But as we take this initial step, I want to ask whether we should not explore ways of using the increased access offered by the Web to make research a greater part of the larger social process of sense-making, which in turn could

only make this larger sense-making a greater part of the research process.

I recognize what I am asking of a lot of researchers who have grown wary of politics. I hear the resistance in Stahl, for example, when in concluding his perhaps premature obituary for whole language he lends his support to Allington and Woodside-Jiron by insisting that "we need to understand the nature of political movements in education so that we can transcend them to provide effective instruction to the young" (1999, p. 21). Nonetheless, I respectfully counter, researchers need to understand political movements in education so that they can increase the presence and play of publicly funded research in the necessarily political processes of organizing and directing education in a democratic state. Researchers need to understand political movements in education so that their work contributes to the scope and informed basis of democratic participation—be it the participation of individuals or political movements—by equipping people with the knowledge that can improve instruction in directions decided through public processes. Researchers need to do this because they believe, in their own form of research consensus, that the knowledge that they are so carefully pursuing through research has a valuable contribution to make to people's understanding and to the potential level of "public reason," a phrase borrowed from Kant and more recently worked by John Rawls (1999).

Effective instruction for the young does not require us to transcend the politics of democratic participation in education, as if to finally separate the singular researched truth of reading, as ascertained by a test score, from the rabble-rousing politics of education. What research can tell us about *effective* instruction and *the effects of instruction* should help us realize the consequences of those politics, should help us appreciate the risks and possibilities of coming together to create an education system for the young. The research should help educators and the public make sense of what is at stake in how we understand and approach the teaching of reading and writing. Our expectation that this research contributes to democratic processes raises the educational standards for both researchers—in rendering their work incisive, coherent, and intelligible—and the public—as people's use of this knowledge to increase their democratic and civic engagement adds to the very reasons for the public's investment in education.

Innovative experiments are already under way in the publication of research in electronic forms (Pea, 1999; Kiernan, 1999; Norris, Smolka & Soloway, 1999).[6] And if there is no telling what shape this medium will take in the years ahead, or what impact it will have on the role that educational research plays in public forums, we should not let this uncertainty dissuade us from experimenting with new technologies that can increase the play of knowledge in the public sector, encouraging people to democratically engage with the institutions that govern their lives. A consensus among re-

searchers on the value or possibility of improving the public value of research is as unlikely as is a consensus on how to teach reading and writing. But we might still agree that we should at least test the possibility that educational research can do more to inform the public and that professional talk about education falls within the public responsibilities of a research enterprise devoted to understanding educational processes. That is just the sort of cautious and concerned consensus that would advance the interests of democratic deliberation.

We should attempt, then, to set new standards for public knowledge so that people are able to readily draw on research findings, and we should set new standards for what educational research can contribute to our understanding of the schools, standards that go well beyond the narrow scope of a standardized test score. Such standards will contribute to an increase in effective democratic participation; they will help people realize the full value of publicly funded research; and perhaps most importantly, they will speak to the very value of public education in all of its contributions to the civic and political responsibilities that constitute a democratic state.

Notes

1. Donald A.B. Lindberg, Director of the National Library of Medicine, reports that "when the Library discovered that one third of the almost 200 million MEDLINE searches per year are being done by the public, for their personal health and the health of their families, the Library immediately began planning a new program to help consumers easily access health information on the Internet and MEDLINE*plus* was created as part of this effort" (Lindberg, 2001). This new service provides access to extensive information about specific diseases and conditions and also has links to consumer health information from the National Institutes of Health, as well as to clearinghouses, dictionaries, lists of hospitals and physicians, health information in Spanish and other languages, and sites related to clinical trials.

2. A front-page story in the *New York Times* explains the current political climate as follows: "So many independent interest groups are poised to spend large sums on advertising to influence elections this year that Republicans and Democrats alike fear the candidates may find themselves playing bit parts in their own campaigns" (Berke, 1998, p. A1).

3. The most recent example of interest group impact is found in the Kansas Board of Education's 1999 decision to make the teaching of evolution optional in science classes. As Stephen Jay Gould has pointed out, it took the fundamentalists behind that vote three elections to secure a one-vote majority on the ten-member board (Dreifus, 1999). But then journalist Richard Wright has accused Stephen Jay Gould's popular work on evolution of feeding the creationists' cause, as creationists "love the conspiratorial aura of Gould's description of these gaps [in the fossil record] as the 'trade secret of paleontology'" (Wright, 1999, p. 61). This risk of misuse that follows from the very accessibility of Gould's work is a necessary aspect, I am arguing, of research playing a greater public role.

4. These ideas are based on the two pilot projects of the Public Knowledge Project (see http://www.pkp.ubc.ca/) at the University of British Columbia. The first was a collaborative effort with the *Vancouver Sun*, a daily local newspaper, examining how print journalism could be

extended by providing links to related research, policies, practices, programs, and organizations available on the Internet. A Public Knowledge Policy Forum was then created with the British Columbia Teacher's Federation (see http://pkp.bctf.bc.ca) to facilitate public participation in the policy-making process of the British Columbia Ministry of Education, supported by access to the relevant educational research and the government policies and plans.

5. MEDLINE*plus*, National Library of Medicine. [On-line]. Available at: http://www.nlm.nih.gov/medlineplus. See note 1.

6. For more on the work of the Public Knowledge Project in this regard, see note 4 above.

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MOVING BEYOND COGNITIVE FORMALISM

The Democratic System of Meaning and New Modes of Thinking

Joe L. Kincheloe

The crisis of modernist reductionism can be conceptualized as a crisis of cognition, of thinking. Modernism has been marked by a way of thinking obsessed with the rational management of the lives of individuals. In this frame, technical standards can be better conceptualized as part of a culture of manipulation that wants to covertly teach us what and how to think. Indeed, technical standards are part of a larger process that involves powerful groups producing an educational experience and a way of thinking that serves their own interests. Technical standards are not designed to protect the sacred human spirit as much as they are meant to control that very spirit. Students often sense this purpose and sometimes rebel or resist the effort in a variety of creative ways. Such resistance is viewed by educators as a *motivational problem*. Maybe by understanding its genesis, we might come to see it differently—possibly as a sign of hope in the ethical sense of many of our students.

No matter how we view such student behavior, it is safe to argue that most students are not very interested in the memorization rituals of top-down technical standards. They are not motivated to explore the possibilities of the human mind, not because they are uninterested but because they have never heard or seen anybody make such a reference. What do we mean, they ask, by such exploration? Devoid of a meaningful justification for the pursuit of learning, teachers and students in these reductionistic situations wander aimlessly in a maze of fragmented information and unchallenging thinking. Classrooms in technical schools become spiritless places where nervous, rule-following teachers face students who have no conception of any intrinsic value in

the lessons being taught. Everything that goes on in such schools seems irrelevant in regard to its intrinsic value—those students who are motivated are typically moved by the extrinsic values of education, including its role in pathways to economic and social success. If the path to such success involved proficiency at picking raspberries, such success-motivated students would excel at that task.

The Cognitive Crisis

American society's inability to understand the limitations of reductionism and positivism is a part of a larger cognitive crisis. This crisis is characterized by a difficulty in understanding the social construction of self, the contradictions of what we label progress, the complexity of cultural difference, and the limitations of Western reason. Often when delineating a particular outcome as progress, for example, positivist observers are compelled to remove from view everything that falls outside the specific outcome in question. Thus, when we argue that a school's standards test score improvement is a sign of progress, we focus only on the scores. If the numbers are to constitute our proof, we cannot explore the simultaneous deterioration of students' sense of well-being, their inability to find significance in the everyday life of the classroom, or their lack of cognitive improvement as a result of the learning experience. A complex critique of standards-driven test score improvement reveals concurrent negative effects on the learning climate and the cognitive aspects of the school.

Complex analysis uncovers repressive contradictions in such pronouncements of progress. In one of the most important contradictions, the map of what is being studied is confused with the terrain itself. Standards-driven tests do not measure the educational competence or cognitive ability/accomplishment of students. Many political and educational leaders, however, believe that they do provide an accurate portrayal of what is happening in school. It is important to note that such scores tell us simply how well students have learned to take standardized tests and to engage in the specific type of thinking standardized tests require. Such a cognitive style is rarely required in academia or in the workplace. Two of the few places such thinking might be rewarded outside of the testing situation might be on *Who Wants to Be a Millionaire?* or *Jeopardy*.

Lost, of course, in these tests and the technical standards that drive them are the higher-order cognitive functions that help us see behind the curtain, beneath the surface. Such a cognitive ability helps students and teachers discern the processes in which knowledge is implicated. When reductionists fail to see the *process*, they view a misleading world of discrete entities, each separated from all others. Technical standards–driven schooling and the thinking it promotes reflect this isolating tendency as they search for fundamental essences, an understanding of "things-in-themselves." Thus, the possibility of a

process-oriented cognition that views an entity as part of a larger set of temporal, spatial, and conceptual relationships is severely reduced by technical standards. No one is examining these types of cognitive issues in the literature on standards floating around in the first years of the twenty-first century. Standards of complexity make sure that these cognitive dynamics are always addressed in the conversation about educational reform.

The cognitive crisis of modernism reveals itself in the tyranny of the unexamined word and unexamined cognitive styles. Any discussion of educational standards and the goals of education would seem to require an analysis of what academic abilities and cognitive skills contribute to the production of an educated person. So far such a conversation has not taken place. Voices that challenge the mentality of technical standards both inside and outside the United States have been silenced. The narrative of progress based on a reductionistic form of reason and its obsession with things-in-themselves have served to overpower dissenters. In the process, American society has suffered, cognition has stagnated, and schools have become more concerned with honoring the past than inventing the future. Questions of justice and fairness in light of the contextual experiences of different students are represented by advocates of technical standards as manifestations of the forces that are undermining the quality of our schools. Such a perspective reflects the reductionists' inability to think in terms of context and the influences it exerts on our relationship to the world.

As referenced elsewhere in this volume, technical standards promote a cognitive reductionism that finds it difficult to study the cognitive process, consciousness, and identity formation because of their immateriality, their refusal to be neatly characterized as things-in-themselves. How do we know for certain the nature of cognitive ability? Such a complex entity does not lend itself to concrete delineations of its nature. Just when positivistic scientists believe they have nailed it down, cognitive ability changes as a result of its contact with different cognitive forms. Such diversity changes what was previously viewed as cognitive ability because it induces reflection, which moves cognitive ability to a new space. This process of cognitive change continues, based on the experiences encountered and the new contexts negotiated.

Technical standards demand a twelve-to-sixteen-year training program for the fragmented positivistic mindset. Requiring an emphasis on quantities, distance, and location, technical standards ignore thinking that focuses on qualities, relationships, and context. Modernist assumptions are deeply embedded in various aspects of technical standards–driven school life. Standards-driven tests prepare students to think in terms of linear causality and quantification—the foundation of positivism. Because we are not taught to think in complex terms, in terms that expose the tacit assumptions that shape our conven-

tions, institutions, and everyday practices, many educators are not aware that they are promoting a particular ideologically inscribed cognitive style when they design, implement, and assess standards. Such naiveté exacerbates the cognitive crisis that undermines us.

Technical standards are handcuffed to a bed covered with a crazy quilt of unexamined assumptions. Because reductionistic observers are blind to these ideological, epistemological, and cognitive presuppositions, the questions they ask, the policies they formulate, the goals they pursue in relation to standards-driven educational reform are not very academically sophisticated. These tacit assumptions dictate the nature of the reform conversation without the participants' awareness. Often, standards advocates are oblivious to the implications and effects of their proposals.

Other times, however, standards advocates are acutely aware of the ideological, political, and cognitive dynamics involved and the interests they serve. In the back-to-basics proposals of the 1970s and 1980s, the same dynamics were at work that operate in the standards movement of the early twenty-first century. Presidents Reagan and Bush in the 1980s turned to increased standardized testing, strict accountability measures for teachers, and more business and school partnerships in their reform proposals. President Clinton continued these types of reform during his two administrations, and President W. Bush pushes them even more aggressively in his administration. Thus, current technical standards proposals are merely a continuation of policies already in place. A similar policy pattern was present in Great Britain under Margaret Thatcher and John Major.

The Reagan-Bush-Clinton-W. Bush/Thatcher-Major proposals emphasized the training of competitive and productive workers. While the production of good workers is not in itself a problematic goal of education, such a task is far more complex than envisioned in these reforms (see Kincheloe, 1995). Instead of educating smart workers and courageous citizens dedicated to the social good, the Reagan-Bush-Clinton-W. Bush proposals have often attempted to produce workers who are compliant and loyal to their companies, that is, passive thinkers. Such "team players" do not pose any significant challenge to the injustices and myopia of the reductionist mode of education. Of course, technical standards as the latest chapter of educational reductionism perpetuate these ideological and cognitive dynamics. The cognitive crisis is exacerbated.

Reductionism in the Cognitive Space: The Limitations of Formal Thinking

"Teaching the basics" is one aspect of the public conversation about standards that allows reductionists to score public relations points. Over and over again, they speak of teaching children to read and write, as if those

who oppose their oversimplifications were opposed to such teaching. Let it be stated clearly at this point: no advocate of standards of complexity is opposed to the teaching of reading and writing. The point for standards of complexity is not whether to teach such abilities, but how you teach such abilities without squashing children's desire to learn, without diminishing their understanding of how such academic skills affect their lives. How such skills are taught, how they are connected to a child's life so he or she will use and expand upon them, is a much more complex question. In the context of formal thinking, the same concept is applicable. Students, however, should not be taught formal thinking skills in a rote, simply-follow-the-procedure manner. Students must understand where such a way of thinking came from and what it can and cannot do. Such larger understandings or meta-awarenesses are central to standards of complexity (Spring, 1994).

Though we have alluded to positivism—the way of seeing that forms the foundation for formalism/formal thinking—throughout this volume, a quick overview of positivism is important in this cognitive context. Positivism is the epistemological extension of the modernist revolution initiated by Descartes, Newton, and Bacon. The assumptions of positivism are drawn from the logic and methods of investigation associated with reductionistic physical science. In such a context hermeneutical principles of interpretation hold little relevance. The meanings of the scientific data produced are rather obvious, positivists contend, so what need is there for interpretation? What is important in the positivistic context involves explanation, prediction, and technical control. How we decide what constitutes a desirable state of affairs—for example, a well-educated person—is of little consequence. To the positivist, knowledge is worthwhile to the extent that it describes objectified data; it does not involve imagining what could be.

Complex questions concerning the social construction of knowledge—the codes, media, ideologies, and socioeconomic structures that shape facts and the political interests that direct the selection and evaluation of data—are irrelevant when knowledge is assumed to be objective and value free. Since the hidden values of knowledge are unexamined by the positivistic tradition, the positivistic cult of objectivity suppresses political discussion in the public sphere. For example, who benefits and who is harmed by technical standards is not a political (power-related) question in the public conversation about standards. Since, in the eyes of positivists, technical standards have been identified in a value-free manner, then they are immune from such political questioning. Positivism and the forms of thinking it supports do not attempt to expose the power imbalances hiding in the languages of knowledge production, teaching, and everyday life. Since it is incapable of reflecting on the political dimensions that infiltrate it, positivism ultimately offers uncritical support for the status

quo (Scholes, 1982; McLaren, 2000; Hinchey, 1998).

Formalism and the Limitations of Cognitive Growth

Cognitive strategies that positivism appropriates from the physical sciences do not neatly fit into the social, psychological, and educational domains. Focusing on the goals of prediction and control, physical science–oriented positivism emphasizes exactness and precision. In an educational context operating within the orbit of positivism, the concern with exactness and precision overrides the flexibility needed for cognitive growth and self-direction, learning to teach oneself. Thus, positivist educational and political leaders attempt to produce exact forms of empirical proof for concepts that are nonempirical in nature. How might we quantitatively measure one of the most important goals of a complex education: students' ability to teach themselves? Madeline Hunter (1987) extended this notion when she admitted that the purpose of education may be to develop creative problem solvers and responsible, productive decision makers. But, thinking as the positivist she was, she said, "I can't cite any research to support that statement" (p. 53).

Just what kind of research would "support" such a statement? Indeed, such a statement involves making a value judgment about what constitutes educational goals. Such a judgment cannot be articulated as an empirical question. Positivists have terrific difficulty with issues, questions, judgments, concerns, and feelings that don't lend themselves to an empirical framing. When these dynamics are forced into the empirical framework, logical errors are committed that hold profound negative consequences. Thus, the complex question of educational purpose omnipresent in the standards debate is reduced to an empirical question of test scores. In such a move, all of the ethical, cognitive, political, spiritual, and social features inherent in the issue of educational purpose are erased without any contemplation. A complex question—what is a good education?—is reduced to a simple question—how do we raise standards-driven test scores? The cognitive reductionism inherent in this reductionistic formalism seems rather obvious.

Within much of what passes for cognitive theory, Jean Piaget's notion of formal thinking is viewed as the highest level of cognition that can be reached. Yet analysts operating in the zone of complexity do not accept such a perspective; they recognize the limitations of formal thinking. Adults do not reach some cognitive ceiling, a state of cognitive equilibrium beyond which no new levels of thinking can emerge. There have to be modes of cognition that move beyond the Western culturally inscribed formal operational ability to formulate abstract conclusions, understand cause-effect relationships, and to produce a reductionistic view of reality. Advocates of complexity maintain that we now know too much to define formalism as

the zenith of human cognition (Arlin, 1975; Kincheloe & Steinberg, 1993; Kincheloe, Steinberg, & Hinchey, 1999).

Formalism implies acceptance of a Cartesian mechanistic worldview and of a cognitive mode that is trapped within a cause-effect, hypothesis-generating, deductive system of reasoning. The formal operational thinker employs a science that breaks a physical, social, psychological, or educational system into its basic parts to understand the way it works. Emphasizing certainty and prediction, formal operational thinking organizes verified facts into a theory. The facts that do not fit into the theory are eliminated, and the theory developed is the one best suited to eliminate contradictions in knowledge. Thus, formal operational thought and its attendant mode of inquiry operate on the assumption that contradiction resolution is an important objective (Kramer, 1983). Many technical standards devisers, assuming that formal operational thought represents the highest level of human cognition, focus their efforts on its cultivation and measurement. Students and teachers who understand the limitations of formalism are often criticized for their lack of rigor, their subjectivism (Sternberg, 1985). (It is important to note here that many technical standards fail to get to formal operations, resting instead at a concrete level of thinking.)

Postformal thinkers are comfortable with the uncertain, tentative nature of knowledge as it emerges from complex research. They are tolerant of contradiction and value the attempt to integrate ostensibly dissimilar phenomena into new, revealing syntheses. In other words, postformal thinkers escape the confines of Cartesian-Newtonian reductionism and venture into the zone of complexity. Postformalism underpins a form of cognition suitable for an electronic world; only a postformal thinker is cognitively and conceptually equipped to handle the uncertainty of the contemporary. Where the formal operational orientation functions on the basis of the Cartesian assumptions of linear causality and determinism, the postformal perspective assumes reciprocity and holism (the complex, nonlinear interconnection of events) (Van Hesteran, 1986; Kramer, 1983).

Thus, simple, privileged vantage points from which to view socioeducational phenomena are rejected by postformal thinkers, as they come to realize that there are many ways of approaching an event. Teachers operating in the zone of complexity will see multiple depictions of the phenomenon, depending both on the context from which it emanates and the system of meaning they employ to help formulate their questions and research strategies; for example, do they adopt a view from above or a view from below? Traditional Marxism, for example, argued in its own deterministic way that humans see only what their conceptual lenses allow them to see, and that they understand what the context for understanding permits.

In the spirit of hope, possibility, and antideterminism, complex teachers

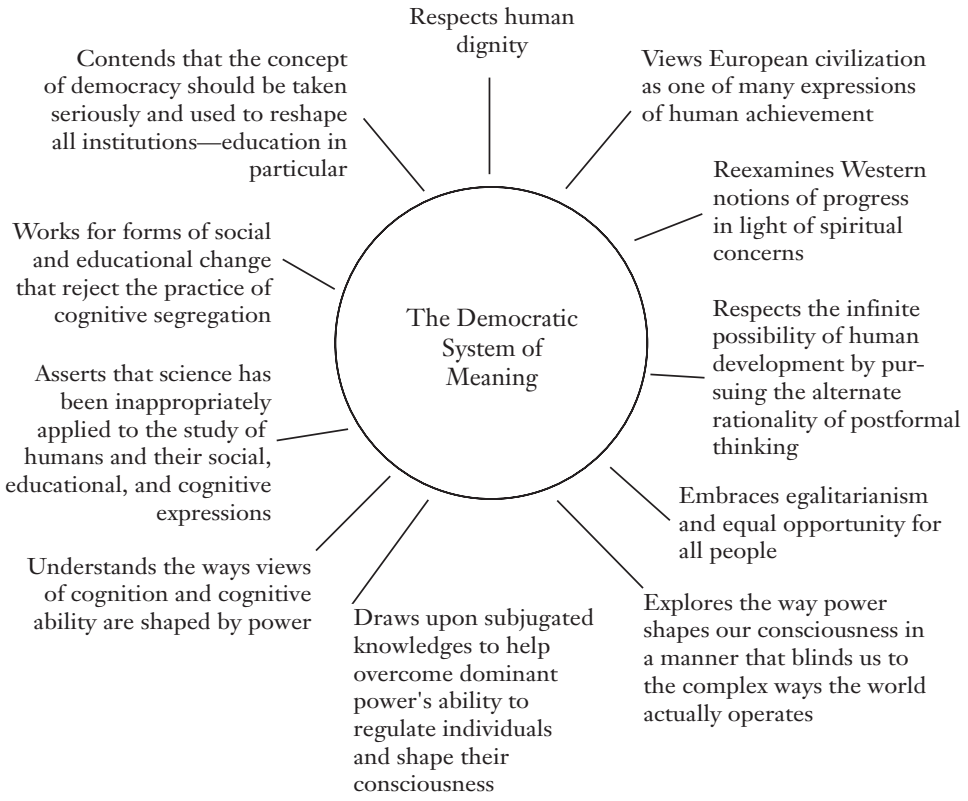
seek to liberate themselves from such determinism by taking control of their perceptual abilities, by transcending what the context permits. In this way we cognitively free ourselves from the constraints of Cartesian dualism and from the structural forces that limit our ability to see the world from outside our restricted vantage point. In its logocentrism, modernity discounted the terrain of private inner reality. What good was such a landscape in the process of industrialization, material progress, and the conquest of nature? As postformalism rediscovers the sensuous and complex, it incorporates such notions into new ways of exploring and perceiving the social, educational, and even physical world (Gordon, Miller, & Rollock, 1990; Kramer, 1983; Slaughter, 1989).

Such new modes of thinking and exploring the world incorporate sensual knowledge and self-knowledge in interesting ways. Researchers who do not understand themselves tend to misconstrue the pronouncements and feelings of others. The complexity and multiple readings characteristic of postformal analysis are remote to formal thinkers, as they seek comfort in the prescribed methods, the objectivity, the depersonalization of traditional social-scientific, educational research and positivist cognitive approaches (Van Hesteran, 1986). In a sense, the Cartesian objectivist tradition provides a shelter in which the self can hide from the deeply personal issues that permeate all socioeducational phenomena—personal issues, which, if it were not for the depersonalization of traditional inquiry, would force an uncomfortable element of self-revelation.

Postformal thinkers/inquirers seek insight into how their own assumptions (as well as those of the individuals they study) came to be constructed. They transcend formalism's concern with problem solving by seeking to determine the origins of the problem; in other words, they seek to learn to think about their own thinking. "How did I come to think this way?" they ask. "What might I do to capture a more complex perspective on the world?" Formalism is uncomfortable in this domain and attempts to squash questions such as these that merely "complicate the matter." In the simplification process that occurs at this point, meanings are distorted and multiple viewpoints are erased. Awareness of the systems of meaning assumed within knowledge production is lost in this formalist process. The possibility of cognitive growth is undermined.

What Does a System of Meaning Have to Do with Cognition? Analyzing Formalism via a Democratic System of Meaning

I referred above to the concept of a "system of meaning" and its relationship to the way we "see" and "think about" the world. Our understanding of the limitations of formal cognition is based upon the system of meaning that we bring to the analytical process. Thus, before we go any further in our discussion of cognition and educa-



Moving Beyond Cognitive Formalism

tional standards, it is important to specify the system of meaning we are using. The above figure is a brief outline of our democratic system of meaning.

A democratic system of meaning respects human dignity. A democratic system of meaning examines ways of thinking and cognitive styles in light of how they contribute or do not contribute to the production of human dignity. To develop this idea I draw upon the same principles I used to develop the idea of "good work" in *Toil and Trouble: Good Work, Smart Workers, and the Integration of Academic and Vocational Education* (1995) and *How Do We Tell the Workers? The Socio-Economic Foundations of Work and Vocational Education* (1999).

1. *The principle of self-direction—a cognition of risk.* Does the way of thinking help individuals direct their own lives? Does it help them identify and solve problems by making use of skills, knowledge, reasoning, and intuition? A democratic system of meaning respects human dignity and promotes a form of cognition that assumes that the promotion of human dignity is worth the risks such promotion often involves.

2. *The principle of a life grounded around active learning.* A democratic system of meaning maintains that individuals should never be allowed to

become passive instruments of power wielders. In this context, the democratic system explores cognitive forms and asks Do they promote active learning? Do they encourage individuals to take responsibility for their own learning?

3. *The principle of cooperation and community building*. Recognizing that the social relationships of the world are too often fractured, the democratic system of meaning works to discern how particular modes of thinking affect such fracture. Do they simply promote competition, where I use my mind to promote my gain over another person's loss? The form of thinking promoted with this principle attunes individuals to the needs of others.

4. *The principle of individual learning and activity that contributes to the social welfare*. If the cognitive forms that support teaching and learning do not contribute to the public good, then they must be made to do so. Often this feature of learning or studying cognition is not taken into account. A democratic system of meaning always examines the consequences of individual conceptualization and learning for the public well-being.

5. *The principle of support for people's need to express their individuality*. In a positivistic world, too often individuals face their superiors' attempts to regulate them. The democratic system of meaning makes sure that particular cognitive modes protect the need for self-expression while also shielding individuals from the pathologies of domination. The democratic system of meaning often helps individuals discern previously unrecognized forms of domination and recognize their effects on individual consciousness.

6. *The principle of incorporating play into work and learning*. Standards rhetoric has created a climate in schools that is hostile to the notion of play. Yet play seems to be basic to human civilization and constitutes one of the highest human endeavors. Play principles can be extended into learning in the following ways: rules of play are not constructed to repress freedom but to constrain authoritarianism and thus to promote fairness; the structure of play is dynamic in its relation to the interaction of the players, and by necessity this interaction is grounded on the equality of the players; the activity is always viewed as an autonomous expression of self, as care is taken not to subordinate imagination to predetermined outcomes. Thus, play does not produce a deadening exhaustion since the activity refreshes the senses and celebrates the person. In this context we can learn to think as collaborators rather than as competitors in the learning process. Rigorous learning in schools shaped by standards of complexity can be viewed as a form of play when teachers and learners work together for shared purposes (Aronowitz, 1973).

A democratic system of meaning views European civilization as but one of many expressions of human achievement. While there is no doubt that Europeans have produced great cultural achievements and ways of thinking that have led to great changes in the

course of human history, our system of meaning moves us to explore other cultures' achievements and cognitive styles as well. In this context, standards of complexity do not uncritically embrace the formal thinking that emerges from European epistemological assumptions. The scientific methods of European ways of seeing do not produce universal, neutral, and objective knowledge. From the perspective of European positivism, individuals from non-European cultures are often viewed simply as inferiors who don't share "our" values and are thus dismissed. Such Eurocentric ways of seeing produce an epistemological power that induces individuals to acquiesce to modernist criteria for judging what is of worth in human experience.

Across the centuries, this epistemological colonialism moved Europeans to see themselves as producers and purveyors of truth. Through their science and rationality they often came to think that they possessed the solutions to all earthly (and sometimes unearthly) problems. As agents of truth, Europeans were able to justify a variety of crimes against humanity—especially nonwhite humanity (Dion-Buffalo & Mohawk, 1992). Understanding this historical reality and its consequences becomes even more important for Americans after the tragic events of September 11, 2001. Our democratic system of meaning attempts to get beyond this ethnocentric form of thinking and to draw upon the power of cultural difference to move to a new cognitive domain. Central to this move is the effort to see the world from a variety of cultural and historical vantage points. The cognitive and pedagogical implications of such a move are dramatic, as multiple accounts and ways of seeing replace the monolithic "truth."

In light of the ways African, Latino, Muslim, Asian, and indigenous lives are misrepresented in both schools and the media, such a way of seeing is profoundly needed by non-European students with understandably low self-esteem, not to mention students from the dominant culture whose anger toward the marginalized grows daily. A curriculum that *sees* from the margins operates differently from the dominant curriculum, starting, for example, a study of race in the United States not with slavery but with the pre-fifteenth-century civilizations in West Africa. Such an approach tells a different story, as it frames the African American struggle as one to regain its original strength, not as a story of a traditionally weak, enslaved people trying to *develop* a sense of dignity.

The subjugated curriculum of the marginalized does not attempt merely to replace Eurocentrism with Afrocentrism, or androcentrism (male centeredness) with gynocentrism (female centeredness). Proponents do maintain, however, that the study of various marginalized peoples should be emphasized because they have been ignored or distorted. They also contend that dominant groups such as white people should be viewed from other angles, from non-Eurocentric epistemological assumptions. Such analysis does not mean that we simply

demonize whiteness; it does mean that we treasure subjugated ways of knowing and thinking. Subjugated stories become a valuable resource for building a better future for individuals from diverse groups, a collective future based on the principles of communitarianism, power sharing, and social justice. In a cognitive context such goals are most easily reached when our thinking is informed by the perspectives of a variety of cultural traditions. Standards of complexity emphasize this type of rigorous diversity.

A democratic system of meaning reexamines Western notions of progress in light of spiritual concerns. The scientific revolution in Western Europe in the seventeenth and eighteenth centuries promoted ways of thinking grounded on particular values and worldviews. *Progress* was central to this cognitive format—and this term implied a specific type of meaning making. Cartesian-Newtonian progress involved a belief in centralization, concentration, accumulation, efficiency, and speed. Bigger became better as the dualistic way of seeing reinforced a patriarchal, expansionist sociopolitical order grounded on a desire for power and conquest. Such a worldview often served to dehumanize, to focus attention on concerns other than the sanctity of humanity.

A foundation was laid that allowed science and technology to transform the world. Commerce increased, nationalism grew, and European civilization could conquer at a rate previously unimagined. Rationality became a new deity, and around this god the credo of modernity was developed: the world is rational and there is only one meaning of the term. All phenomena can be described within the boundaries of this monolithic rationality, whether we are studying atoms or the solar system, dreams or engines, learning or gunpowder, electricity or forms of government. Rationality applied to politics and government nourished the most progressive aspects of modernism—its ideals of freedom, justice, and equality. In the attempt to develop ways of transcending the regressive features of modernism, this progressive dimension must not be forgotten (Leshan & Margenau, 1982; Hannam, 1990).

On the whole, however, regressive modernism's hyperrationality served to reduce and fragment the world until individuals were blinded to particular forms of human and even physical experience. Attempting to study the world in isolation, bit by bit, economists studied the economy separate from human beings, educational scientists studied the schools separate from society, and psychologists studied the concept of mind separate from the cultural experiences that shape it. In this way cognition was viewed as some innate process that has little to do with one's lived experiences. Intelligence was defined as a thing-in-itself, a measurable quantity with a substance similar to other physical objects like gasoline, soil, or asteroids. In this view, a person has some measurable quantity of intelligence, rather like cholesterol. In the Cartesian context, few seemed to consider the possibility

that the way cognitive ability is defined shapes how much of it a particular individual is deemed to have.

This formalization and quantification of humanness demeaned the spiritual aspect of human life. Spiritual, in the sense I am employing here, involves the "immaterial, intelligent, and sentient" (involving the ability to perceive) aspects of humans. As Aoestre Johnson (1999) puts it, spirituality involves the "animating or vital principle held to give life to physical beings," an entitlement to "reverence, honor, and respect" (p. 105). Our democratic system of meaning embraces this spirituality, and the cognition promoted in this context seeks forms of thinking that contribute to the protection of human spirituality. One of the reasons that I am uncomfortable with modernist cognitive forms is their lack of concern for this spiritual aspect of human beings. Standards of complexity assume that Cartesian formal thinking and the education that emerges around it do not respect the sacredness of students. Progress in this context involves human spiritual enhancement.

A democratic system of meaning respects the infinite possibility of human development by pursuing the alternative rationality of postformal thinking. The new forms of democratic living and thinking that postformalism attempts to make possible are inextricably linked to an alternative rationality. Contrary to the claims of some scholars in mainstream educational psychology, postformalism does not seek to embrace irrationality or to reject the entire enterprise of empirical research. I borrow the phrase "alternative rationality" from Stanley Aronowitz (1988), whose critique of mainstream science helps shape our vision of postformalism. In this schemata, new rationalities employ forms of analysis sensitive to signs and symbols, the power of context in relation to thinking, the role of emotion and feeling in cognitive activity, the value of the psychoanalytical process as it taps into the recesses of (un)consciousness, and our system of meaning's spiritual concerns. The effort to extend higher-order cognition extends Aronowitz's powerful alternatives by asking ethical questions of cognition and action. Such inquiries induce educational and cognitive psychologists to study issues of purpose, meaning, and ultimately worth. Do certain forms of thinking undermine the quest for justice? Do certain forms of research cause observers to view problematic ways of seeing as if they involved no issues of power and privilege (Shotter, 1993; Cannella, 1997, 1999)?

Our democratic system of meaning is dedicated to postformal principles of cognition simply because they challenge the limited cognitive imagination of psychological reductionism. Human beings, postformalists contend, can be so much more than they are now. Postformal educators operating with these understandings in mind are ready to take part in schools that are shaped by standards of complexity. They stand ready to engage in the revolutionary process of reconceptual-

izing comfortable Western notions of reason.

Postformalism is grounded on the understanding that reason is a social construction, culturally mediated by signs, symbols, and codes. In this context, Cartesian-Newtonian reason is not transhistorical and transcultural but merely one of many sophisticated forms of meaning making. The traditional scientific aim of its own rational universalism is rejected, along with its abstract reason divorced from experience and its concern for adjusting individuals to the status quo. This dynamic of adjustment reveals itself in functionalist theories that reinforce the legitimacy of the status quo rather than engaging students in a critique of its shortcomings. Mainstream educational psychology fits in this functionalist context, as it identifies deficiency and/or pathology in the marginalized student. The possibility of cultural mismatch or conflicting social values among the climate of school, the psychological criteria for assessment, and the student is rarely considered.

The postformal reconceptualization of Cartesian-Newtonian reason challenges the mainstream educational psychological construction of autonomy and isolated self-direction as the ultimate manifestations of the reasonable individual. In this context, the abstract individualism of Cartesianism inscribes cognitive theory with a validated set of procedures for attaining rational autonomy, called formal thinking. Known, of course, as the scientific method, these procedures provide modernist educational psychologists with the yellow brick road to rigor, context-freedom, protection from the bias/distortion of subjectivity, and truth. The teaching that emanates from these assumptions asserts that the purpose of instruction is to impart this procedural form of thinking and to measure students' capacity to employ it. As postformal teachers rethink reason, they embrace intimacy and interpretation rather than distance and proof. Such teachers value the personal knowledge of students and the ways of understanding that draw individuals together. Such an emphasis is not a retreat to irrationality but an effort to push the boundaries of reason beyond a limited set of procedures and the confines of abstract principles.

In this critical pursuit, postformal teachers seek to engage their students in the understanding of the world in general and everyday life in particular—both in relation to one another and from as many vantage points as possible. A central feature of the postformal teacher's expansion of reason involves the ability to uncover new perspectives, new angles on the world, everyday life, and self. In this arena, students and teachers learn to contextualize in new and exciting ways. In a postformal classroom studying the Gulf War, students would study not only U.S. accounts of the conflict but Iraqi perspectives. They would interview gung-ho U.S. Army veterans, war protesters, Iraqi victims, and observers from Africa and Latin America. Students would analyze the war in a geopolitical context, a multinational

economic context, an environmental context, and a medical context. The role of the postformal teacher would involve devising new contexts and new perspectives from which to explore the meaning of the war in a historical and a lived context. Moral and ethical questions would be raised and student interpretations of the event and analysis of its personal meaning in their lives would be encouraged.

As students studied the war in a variety of contexts, they would simultaneously engage in a meta-analytical cognitive analysis of contextualizing itself. Such an analysis would help students understand that postformalism frees us to conduct inquiry in ways that match the special needs presented by specific contexts. Such a position concerning knowledge production is emancipatory in that it frees us from the limitations of Cartesian-Newtonian procedural thinking. It also illustrates the relationship between research method and cognitive strategy, a relationship rarely noted in mainstream cognitive and educational psychology. Such insights induce democratically grounded postformal educators to become researchers of unique manifestations of cognitive sophistication, of new forms of intelligence. In a recent book entitled *What Is Indigenous Knowledge? Voices from the Academy*, Ladi Semali and I take up this postformal notion of researching new forms of intelligence. Indeed, we argue that an important justification for studying indigenous knowledges around the world is that it helps educators break away from the cognitive limitations of Western reason (Semali and Kincheloe, 1999).

A democratic system of meaning embraces egalitarianism and equal opportunity for all people. Without the guidance of a democratic system of meaning, educators, especially advocates of technical standards, do not understand (and many times do not even try to understand) the institutionalization of inequality in schools. Dominant power produces and validates modes of cognition, sets of content standards, systems of instruction, methods of evaluation, definitions of teacher and student success, and classification and tracking systems that arrange students into advanced, college-bound, general, or vocational tracks. Such divisions provide the knowledge, social practices, cultural capital, and skills required by the class-driven hierarchy of labor in the workplace.

In this case, dominant power interacts with personal behavior when school leaders induce students to believe that such class-based divisions of students and workers are natural and necessary. Students from outside the mainstream, the nonwhite and the poor, are convinced that they do not possess the ability to move into upper levels. They are entangled in the myths of their cultural and academic inferiority as outsiders. Black students, for example, who are often very successful in college, report that by the time they were junior high students, the culture of the school had convinced them that college was out of the question. Thus, students and

their teachers come to accept the myths of inferiority. "How can we expect these students to understand physics?" teachers and guidance counselors ask as they channel the outsiders into nonacademic vocational tracks.

Advocates of the democratic system of meaning and standards of complexity study these power dynamics and their relation to student performance. They understand that when psychometricians act on the assumption that the contents of the mind are more important than the environmental influences that construct it, the possibility of difference being mistaken for deficiency increases. In this formalist context, the social, the cultural, and the economic are erased in cognitive evaluation. Positivistic cognitive scientists take a social and historical dynamic and turn it into a natural process. Indeed, this prestidigitation has ancient origins—since the time of Plato, theories of intelligence have been used to justify socioeconomic disparity. The "dregs" at the bottom have always been said to be deficient and/or pathological. Reductionistic elitists blame the poor for being poor. It is an academic and logical outrage to separate environmental factors from any effort to measure ability or intelligence.

It doesn't take a sociologist to uncover the strange alchemy that occurs when a culturally different and/or poor student encounters the culture of school, grounded as it is in middle-class, white culture, and the conservative wing of the testing psychology establishment. This middle-class mind-set often views poverty as a badge of failure. One African American child absorbed this lesson in her first experiences in school, as evidenced by her response to the question, What is poverty? "Poverty," she said, "is when you aren't living right." Positivist psychologists seem to be oblivious to the psychic toll of such lessons and the ways they move marginalized young people to reject the academic world and the experiences that surround it as a matter of self-protection.

In this situation, teachers and students of educational sociology come to understand that children from lower socioeconomic and nonwhite homes do not ascribe importance to school work in the same way as do upper-middle-class white students. Poor and racially marginalized children often see academic work and the information and skills tests seek to measure as unreal, as a series of short-term tasks rather than something with long-term significance for their lives. Important work is something you get paid for after its completion. Without such compensation or long-term justification, these students display little interest in the "academic." This lack of motivation and its consequences, involving reduced understanding of certain knowledge forms and discursive formats, are interpreted by many educators and psychologists as a lack of intelligence. Poor performance on standardized tests scientifically confirms the "inferiority" of such students.

Unfortunately, this happens every

day. Too many educators and psychologists (though certainly not all) mistake cultural and class differences in manners, attitudes, speech, and school performance for a lack of cognitive ability. Some teachers and counselors report that they place some students in low-ability tracks because of their cultural or class backgrounds. Their rationale involves the marginalized student's social discomfort around students from a "higher status/ability background." These students should be with their own kind, they maintain. Advocates of technical standards also worry that the presence of such students in high-ability tracks would subvert the quality of education received by more "intelligent" students. Such beliefs constrict the educational establishment's view of the human capacity for development and the understanding of multiple dimensions of human diversity. Reductionists and their ideological compadres miss these social complexities. As they reduce intelligence to one's performance on an IQ test, they ignore the unique and creative accomplishments one is capable of in diverse venues and contexts.

Research on the educational performance of low-status groups in other countries provides important insight into the shortcomings of cognitive elitism. In Sweden, Finnish people are viewed as inferior—the failure rate for Finnish children in Swedish schools is very high. When Finnish children immigrate to Australia, however, they do as well as Swedish immigrants. Koreans do poorly in Japanese schools, where they are viewed as culturally inferior; in American schools, on the other hand, Korean immigrants are very successful.

The examples are numerous, but the results generally follow the same pattern: racial, ethnic, and class groups that are viewed negatively or as inferiors in a nation's dominant culture tend to perform poorly academically. Reductionists don't want to understand that power relations between groups must be considered when individuals' abilities are analyzed. Without the insights derived from such environmental understandings, brilliant and creative people from marginalized backgrounds will continue to be relegated to the vast army of the inferior and untalented. Our democratic system of meaning alerts us to these harmful processes, as it grounds our formulation of new cognitive insights that confront these exclusionary and elitist ways of seeing. This is a central feature of standards of complexity.

A democratic system of meaning explores the way power shapes our consciousness, blinding us to the complex ways the world actually operates. The democratic system of meaning is dedicated to helping educators and the public understand the ways that dominant power operates to distort our understanding of how the world works. In this effort, standards of complexity help individuals discern how technical standards create and teach cognitive modes that paint a picture of the world that supports existing power relations. One cannot talk of securing social justice and promoting democracy without

challenging the way this dominant power operates on both the contemporary educational and cultural landscape. The cultural realm has become a more and more important location in the shaping of both historical and everyday experience. No longer exercised simply by physical force, dominant power now works also through cultural institutions such as the schools, the media, the family, and the church, which exert sociopsychological pressure to win people's consent to domination.

In his notion of hegemony, developed in Mussolini's Italian prisons of the 1920s and 1930s, Antonio Gramsci recognized that the winning of popular consent is a very complex process. The dominant power bloc wins popular consent by way of a pedagogical process, a form of learning that engages people's conceptions of the world in such a way that transforms (not displaces) them with perspectives more compatible with those of the elite. The existence and nature of hegemony is one of the most important and least understood features of early-twenty-first-century life. Students of power, educators, sociologists, researchers, all of us are hegemonized, as our field of knowledge and understanding is structured by limited exposure to competing definitions of the sociopolitical world. The hegemonic field, with its bounded sociopsychological horizon, garners consent to an inequitable power matrix—a set of social relations that are legitimated by their depiction as natural and inevitable (Goldman, 1992; West, 1993; McLaren, 1994; Giroux, 1997).

The technologies of hegemony (the methods by which social consent is garnered) move the state of social domination from condition yellow to condition red. Advocates of standards of complexity and postformalism find themselves in a state of full alert in regard to the exacerbation of domination in the postmodern condition. This technology of hegemony, termed *hyperreality* by postmodernist theorist Jean Baudrillard (1983), is marked by a blurring of the distinction between the real and the unreal. Such a blurring produces a social vertigo precipitated by a loss of contact with traditional notions of time, community, self, and history. New structures of cultural space and time generated by bombarding electronic images from local, national, and international venues shake our personal sense of place (Aronowitz & Giroux, 1991; Gergen, 1991; Kincheloe, 1995).

This proliferation of signs and images characteristic of media information–soaked hyperreality functions as a mechanism of control in contemporary Western societies. The success of a counterhegemonic education hinges on: (1) its ability to link the production of the representations, images, and signs of hyperreality to power blocs in the political economy and (2) its capacity, once this linkage is exposed and described, to delineate the highly complex and ambiguous cognitive effects of the reception of these images and signs on individuals located at various race, class, and gender

coordinates in the web of reality. No easy task, this effort—but to avoid it is to turn our backs on the democratic experiment, educational rigor, and the possibility of social justice. This is why the effort to trace the effects of power in the ways the power bloc represents reality is so important.

We must be very specific about the nature of domination in contemporary life. Hyperreality, in its obscured yet ubiquitous guise, amplifies power by corporate control of the means of simulation and representation. By determining what is important (what is worthy, for example, of time on TV) and what is not, corporate-owned media can set agendas, mold loyalties, depict conflicts, and undermine challenges to the existing power bloc without a modicum of public notice. Students of cognition operating in the zone of complexity face the task of analyzing power/domination; the importance of this task cannot be overemphasized, for it is not addressed on the mediascape.

CBS will not present a two-minute story on domination in hyperreality on tomorrow night's evening news, nor will a single local affiliate discuss such a thing in any of its news programming in the foreseeable future. Electronic media will make programming decisions on the basis of commodity exchange issues; that is, cultural codes will be conveyed to the viewing audience on the basis of their capacity to engage men, women, and children in their *duty* to consume (Luke, 1991). The constituency of hyperreality serves the needs of the power bloc with honor and civic reverence—its "patriotic" acts of consumption constitute the life-affirming productive energy of twenty-first-century capitalism.

The conditions under which knowledge is produced, consciousness is shaped, cognitive modes are fashioned, and hegemonic consent is won have dramatically changed over the past two decades. Power is now produced and exercised in a way that allows it to penetrate national and global boundaries. Western corporations transmit hegemonic power to Third World countries through advertising images sent by satellites; through the work of experts sent to speed "development" in agriculture, education, and the physical sciences; and through cultural representations plastered on billboards throughout the countryside. Advocates of standards of complexity and postformal modes of cognition understand that these are central educational issues of the twenty-first century. Proponents of educational reform, especially top-down technical standards, fail even to acknowledge the existence of these issues, as they hide behind their formalist barricades. Such political and educational leaders are simply not concerned with the way individuals learn and think, as long as existing power relations are not threatened and democratic dissent is suppressed.

Those who appreciate the democratic system of meaning understand that hegemonic power wins consent through the production of pleasure, as popular culture in the form of adver-

tisements, TV shows, popular music, movies, and computer games induces individuals throughout the world to make emotional investments that tie them to such cultural productions. Such investments produce meaning and ways of thinking as they shape identity and an individual's view of the world. Individuals always view power, no matter how or where it is produced, through their own histories and their own race, class, and gender filters. Understanding contemporary power production and the cognitive filters everyone possesses, advocates of standards of complexity appreciate the need for more nuanced understandings of the way hegemonic messages are received, incorporated, and resisted.

Such understandings provide important insights into the effects of power, the ways the individual interfaces with sociopolitical structures, and the way meaning is made on power-produced terrains of representations and dominant culture formations. Concern with the phenomenological (having to do with the nature of consciousness) experience of the individual through the influence of social power allows scholars to focus on the moment of self-creation, the way belief structures are formed, and in a hegemonic context, the way consent is elicited. In their analysis of this process, democratic analysts want to know how power leaves its hegemonic imprint on individual consciousness. The better such a process is understood, the more we are empowered to understand what white supremacy, patriarchy, and rule by class elite have done to individuals from all cultural spheres and how these factors have shaped their educational experience, their cognitive facilities, and their views of the way the world operates. In this power-driven context, democracy is under threat, as new forms of cognitive regulation invisibly work their malevolent magic.

A democratic system of meaning draws upon subjugated knowledge to help overcome the regulation of individuals and the shaping of their consciousness by the dominant power. The democratic system of meaning works to make cultural, gender, and class differences visible. Understanding the power asymmetries in these differences, the democratic system of meaning explores these dynamics in the context of disciplinary content knowledges, methods of teaching, standards, and modes of cognition. Understanding these dynamics in social and historical context, standards of complexity engage those who have been deemed different in the investigation of how institutions can be reformed in a way that is just, democratic, and rigorous. In a democratic system of meaning, difference is connected to democracy in that it understands schools as contested public spaces, pushed and pulled by forces of power. Curriculum, pedagogy, and acceptable modes of cognition are always shaped by these power struggles.

Attention to difference demands that teachers be aware of the specific histories and struggles of oppressed peoples in a variety of arenas. One of these arenas involves the school itself,

as many scholars contend that the classroom is a central site for the legitimization of myths, lies, and silences about nonwhite, poor, and other marginalized individuals. If educators were actually to teach the specific histories and struggles of Latinos in America, for example, they would have to rethink the history of Anglos in America. When history books lie about the history of an oppressed group, they concurrently lie about all history—the entire curriculum is distorted by such duplicity. Teachers in the zone of complexity understand these historical and curricular insights and use them to move the recognition of difference into a politically transformative form of education. Such a pedagogy does not accept the inevitability of social privilege and social inequality. Instead, our democratic system of meaning understands Western societies as collectivities of difference, where the potential exists for all people to be edified by interaction with the "other" and the ways of knowing he or she brings to an encounter.

The benefits of a contextualized understanding of difference are multidimensional. Standards of complexity move beyond the "difference-is-spice" curriculum to the use of difference to reformulate the basic concepts of a discipline. In addition, standards of complexity use difference to debunk the myth, perpetuated by conservatives, that Western societies are grounded on a social, political, and cultural consensus. If the consensus myth is accepted, then standards of complexity can be positioned as a divisive discourse that tears the social fabric apart with charges of injustice. In this context complex teachers are careful to situate different social groups *in relationship to* one another, not *in opposition to* one another.

Contrary to conservative charges, the point is not to pit groups against one another but to emphasize the importance and specific nature of oppressed cultures. Such an emphasis helps to expose the specific nature and commitments of a dominant culture that often hide behind its proclamation of neutrality. Using difference in this way precludes Anglo, European, male, and heterosexual culture from representing its norms as beyond history and culture. No longer can dominant culture celebrate its neutrality and universality while condemning the abnormality and deviancy of the marginalized (McCarthy & Apple, 1988; Frankenberg, 1993; McLaren, 1993; Zinn & Dill, 1994).

If difference is more empowering than homogeneity, its power emanates from its ability to expand each person's horizon and social understanding. Students who belong to divergent socioeconomic groups can learn much from one another if provided with the space to exchange ideas and analyze mutual difficulties. As such a powerful force, difference must be not simply tolerated but cultivated as a spark to human creativity. Any description of critical thinking must include an understanding of difference that nurtures a critical sense of empathy. Cornel West (1993) argues that empathy

involves the ability to appreciate the anxieties and frustrations of others and never to lose sight of the humanity of the marginalized, no matter how wretched their condition.

The point emerging here, of course, involves the ethical and cognitive benefits derived from the confrontation with diversity and the different vantage points it provides us for viewing the lived world. Taking a cue from liberation theologians in Latin America, complex teachers often begin their analysis of an institution by listening to those who have suffered most as a result of its existence. These "different" ways of seeing allow such teachers to tap into the cognitive power of empathy—a power that allows individuals access to deep patterns of racism, class bias, and sexism and the way they structure oppression in schools. In this context, students and teachers begin to see other ways of thinking, and this recognition leads to a reexamination of how they themselves have come to think and view the world in the way they do.

Using this reflective process, teachers in standards of complexity seek a dialogue between Eastern cultures and Western cultures, as well as a conversation between the relatively wealthy northern cultures and the impoverished southern cultures (Bohm & Peat, 1987; Welch, 1991). In such a context, forms of knowing that have traditionally been excluded by the modernist West, such as the understandings of blue-collar workers, move educators to new vantage points and unexplored planetary perspectives. Understanding derived from the perspective of the excluded or the culturally different allows for an appreciation of the nature of justice, the invisibility of the process of oppression, and the difference that highlights our own social construction as individuals.

In this spirit, all individuals who appreciate the insights of diverse knowledges begin to look at their work from the perspectives of their Asian, African, Latino, and indigenous colleagues around the world. Such cognitive cross-fertilization often reveals the tacit assumptions that impede innovations. For example, home builders and architects who study Native American, Japanese, or African ways of building houses may gain creative insight into their crafts. After studying the way Zuni pueblos addressed problems of living space, they might be empowered to tackle space problems creatively in ways conventional builders hadn't considered.

In the context of cognitive development, Piaget argued that conceptual change takes place when learners engage in the process of accommodation. He described accommodation as the restructuring of one's cognitive maps to take care of an unanticipated event—that is, to deal with difference. In order to accommodate, an individual must actively change his or her existing intellectual structure to understand the dissonance produced by the novel demand. Accommodation is a reflective, integrative behavior that forces us to realize that our present cognitive structure is insufficient to deal with the changing pressures of

the environment (Kaufman, 1978; Fosnot, 1988).

In a sense, accommodation becomes a subversive agent of change leading an individual to adjust whenever and wherever it might be necessary. When Piagetian accommodation is connected with the Frankfurt School's concept of negation in a context that appreciates the notion of difference suggested by the democratic system of meaning, interesting things begin to happen. Common to both critical theory and accommodation, negation involves the continuous criticism and reconstruction of what one thinks one knows. For example, critical theorist Max Horkheimer argued that through negation we develop a critical consciousness that allows us to get beyond old, ossified worldviews and to incorporate our new understandings into a new reflective attitude (Held, 1980).

As teachers recognize the cognitive potential of critical accommodation, they structure learning situations wherein individuals come to understand previously unrecognized aspects of the environment and to expose the cognitive limitations that precluded insight in the past. Horkheimer maintained that through the awareness gained by way of critical negation (the philosophical analogue to the cognitive act of accommodation), an individual develops and becomes open to democratic change. In this context, critical accommodation can be described as a reshaping of consciousness consonant with an understanding of democracy and social justice. Thus, educators see the diversity of classroom experiences as an opportunity for cognitive growth. An example from complex democratic classrooms might help to ground this concept. Teachers exploring the meaning of intelligence would develop (or *assimilate*, in Piagetian theory) an understanding of the concept based on their personal experience and the coverage of cognition in their teacher education. They would accommodate the concept as they began to examine students who were labeled unintelligent but displayed sophisticated abilities in the manual arts or in the practical understandings of the trades and crafts.

At this point the teachers might take note of this contradiction and begin to integrate this recognition of exception (accommodation) into a reconceptualization of the prevailing definition of intelligence in the culture of school. The old definition of intelligence would have been negated; through exposure to diverse expressions of intelligence, new ways of seeing it would have been accommodated. Our democratic system of meaning might have alerted teachers to the mainstream dismissal of the talents of students from the margins, nonwhite and economically disadvantaged young people. Picking up on these concerns, teachers would critically accommodate nontraditional expressions of intelligence that would free them from the privileged, racist, and class-biased definitions that were used to exclude cognitive styles that transcended the official codes. In this and many other situations, accommo-

dation becomes the emancipatory feature of the thinking process. In a standards of complexity context, educators recognize this and use accommodation in the struggle for democratic economic, social, educational, and cognitive change (Hultgren, 1987; Lather, 1991).

Derived from dangerous memories of history that have been suppressed and information that has been disqualified by social and academic gatekeepers, subjugated knowledge plays a central role in standards of complexity. Through the conscious cultivation of these low-ranking knowledges, alternative democratic and emancipatory visions of society, politics, education, and cognition are possible. In a complex democratic curriculum, subjugated knowledge is not passed along as a new canon but becomes a living body of knowledge open to different interpretations. Viewed in its relationship to the traditional curriculum, subjugated knowledge is employed as a constellation of concepts that challenge the invisible cultural assumptions embedded in all aspects of schooling and knowledge production. The subjugated knowledges of African Americans, Native Americans, working-class people, women, and many other groups have contested the dominant culture's view of reality.

Confronted with subjugated knowledge, individuals from white mainstream culture begin to appreciate the fact that there are multiple perspectives on all issues. Indeed, they begin to realize that textbooks and content standards discard data about unpopular viewpoints and information produced by marginalized groups. Curricula that include subjugated perspectives teach a lesson on the complexities of knowledge production and how this process shapes our view of ourselves and the world around us. The curriculum cannot stay the same if we take the knowledges of working-class men and women seriously; if we get beyond the rosy, romanticized picture of immigration to North America and document the traumatic stories of the immigrants; if we seek out women's perspectives on the evolution of Western culture; or if we study the culture enslaved Africans brought to the New World.

The dominant cultural power blocs that often dictate technical, top-down content standards at the beginning of the twenty-first century seem oblivious to the need to listen to marginalized people and to take their knowledge seriously. Western power wielders are not good at listening to information that does not seem to contribute to hegemony, that does not enhance their ability to win the consent of the subjugated to their governance. Knowledge that emerges from and serves the purposes of the subjugated is often erased—made to appear dangerous and pathological to other citizens.

Drawing upon work within the discipline of cultural studies that seeks to reverse conditions of oppression, subjugated knowledge seeks new ways of validating the importance and relevance of divergent voices. Such voices are excluded not merely from schoolrooms, curriculum guides, and con-

tent standards, but from other sites of knowledge production, such as popular culture. Having become a major pedagogical force in Western societies over the past few decades, the popular culture "curriculum" is monitored for emancipatory expressions of subjugated knowledge. Though not always successful, power wielders attempt to neutralize the subjugated knowledges that find their way into TV, movies, popular music, the Internet, and other popular cultural sites (Dion-Buffalo & Mohawk, 1992; Fiske, 1993; Mullings, 1994; Nieto, 1996; McLaren & Morris, 1997).

But the value of subjugated knowledges is not contingent on the blessings of power wielders and standards devisors in the dominant culture, and so purveyors of subjugated knowledge can confront individuals from the white, upper-middle-class cultural center with the oppressed's view of them. Some of the pictures are quite disconcerting for mainstream individuals who have never given much thought to the way they are seen from the social margins. Individuals from dominant social formations have never developed their imagination about how they look to marginalized others, while the marginalized have been forced to give their appearance to the mainstream a great deal of attention. As a result, women often make sense of men's image of women better than men understand women's view of men; individuals with African heritages understand the motivations of whites better than the reverse; and low-status workers figure out how they are seen by their managers more clearly than the managers understand how they appear to workers.

Obviously, such insights provide us with a very different view of the world and the processes that shape it. Teachers who employ subjugated viewpoints become transformative agents who alert the community to its hidden features, its submerged memories—in the process helping individuals to name their oppression or possibly understand their complicity in oppression. Such a naming process helps students, teachers, workers, and other community members to reflect on their construction of their lived worlds so that they develop the ability to take control of their own lives and move to a new cognitive domain. In this new cognitive domain, teachers and students explore dangerous knowledges that often change their perceptions of the forces that shape them. In this context, they redefine their ways of seeing with a new level of self-knowledge.

Teaching that is committed to subjugated knowledge has "friends in low places." In standards of complexity, the view from above of the traditional Eurocentric upper-middle-class male curriculum makes way for the inclusion of views from below. Emerging from an understanding of and respect for the perspective of the oppressed, such an epistemological position uses the voices of the subjugated to formulate a reconstruction of the dominant educational structure. It is a radical reconstruction in the sense that it attempts to empower those who are

presently powerless and to validate oppressed ways of thinking that open new cognitive doors to everyone.

As democratic teachers expose the way dominant power invalidates the cognitive styles of marginalized groups, we begin to examine the testing procedures of technical standards and their political effects. Eurocentric psychometricians devise tests to evaluate student performance, forgetting in the process that evaluation is based on unquestioned definitions of intelligence and performance. Thus, the winners and losers will line up in predictable ways, with those from groups with high levels of social power performing better than those with low levels of power.

The advantage of subjugated perspectives, the views from below, involves what has been termed the "double consciousness" of the oppressed. If they are to survive, subjugated groups develop an understanding of those who attempt to dominate them; at the same time they are cognizant of the everyday mechanisms of oppression and their effects. W.E.B. DuBois (1973) called this double consciousness of the oppressed a form of "second sight," an ability to see oneself through the perception of others. A complex cognitive curriculum of second sight is grounded on the understanding that a rigorously educated person knows more than just the validated knowledge of the dominant culture.

For example, understanding science from a complex perspective would involve analysis of its specific historical origins (the seventeenth and eighteenth centuries) and its cultural location (Western Europe). A complex science curriculum would appreciate that, like other ways of understanding and studying reality, Western science is a social construction of a particular culture at a particular time. Such a cognizance would not induce us to dismiss and discard the accomplishments of Western science—that would be silly. But it would induce us to study other ways of knowing, such as the scientific theories of Native Americans and other cultural groups. In this way we would gain the cognitive abilities of a variety of cultural insights. Here rests the benefits of a truly globalized curriculum.

A democratic system of meaning understands how views of cognition and cognitive ability are shaped by power. Educational leaders and standards developers understand cognition, cognitive ability, and intelligence in a distinct way, and this understanding exerts a dramatic impact. Classrooms that accept decontextualized, reductionistic, psychometric views are organized and evaluated very differently from classrooms that understand the multiple expressions of cognitive ability found within Western societies, in other cultures, and in different places and times. Technical standards reduce student learning to the notion of replication rather than interpretation. Here students "know" only when they can display a decontextualized fragment of data at the bidding of the test.

Assuming that the most significant aspects of school performance and

cognitive activity can be quantitatively measured, the psychometric discourse discourages students and teachers from connecting their lived experience to academic knowledge. Students learn to lay aside their creative and interpretive predispositions and focus only on the data that will be included on the examination, regardless of its relationship to the meaning of the subject matter or to their attempts to make sense of the world. In this context, students are rewarded for their ability to present test makers with what they have been taught in the exact manner it was first presented to them. The ability to engage information critically, creatively, or analytically is often irrelevant—even, it could be argued, harmful—to the quest for high evaluations (Pinar, 1994; Maher & Rathbone, 1986; Bozik, 1987; Lawler, 1975; Gallagher, 1992; Hanson, 1994).

Used in the name of rigorous science in conjunction with technical standards, psychometrics leaves destruction in its wake. The discourse of testing trivializes cognition, focusing attention on dynamics that are not necessarily important but that lend themselves to quick and easy measurement. Professional prerogative is stolen from teachers who are forced to make curricular decisions not on the basis of their professional evaluations of student needs but on the demands of a test. In this context, the standardized test becomes "the tail that wags the dog," as the exam (not the teacher) determines what is taught and learned (Kincheloe, 1991; Rivlin, 1971; House, 1978). The *social* relationship of the student to the school, the teacher, the curriculum, and the tests is irrelevant in positivistic educational psychology. Yet a student's membership or lack of such in what Jean Lave and Etienne Wenger (1991) call "a community of practice" exerts a profound impact on how he or she performs in testing situations in particular and school in general.

Any evaluation of student progress and potential must ask, How integrated is a child into mainstream education's discourse community? School activities, tasks, functions, and understandings are inseparable from wider cultural relationships that grant them *meaning*. For students who live outside these wider cultural relationships, it becomes extremely difficult to understand why the school requires particular tasks to be performed or why certain knowledge is important. A cultural outsider may feel bewildered by the demands of the school. Growing up in the mountains of rural Tennessee, I witnessed dirt poor but savvy mountain children capable of brilliant out-of-school accomplishments fall victim to their cultural exclusion from the discourse community of schooling. "What is she talking about?" such students often asked in regard to the teacher's explanation of an assignment. Needless to say, such students—no matter how brilliant—typically performed poorly in my school.

Positivistic educational psychology and advocates of technical standards exhibit little compassion for those excluded from the educational discourse

community—such students are mere pebbles in the great sea of the low-IQ incompetent. Here is where cognitive reductionists confuse high IQ with cultural advantage. Such an error is the direct result of their social decontextualization of the study of intelligence. Unable to realize the academic benefits gained through access to the school's discourse community, they unabashedly continue to see high intelligence only in people who are most like them—white, privileged, and profoundly immersed in the discourse community of education.

Such understandings provide great insights for those committed to the promise of a democratic system of education. Indeed, egalitarian reform of American education may have to begin with the identification of those students who reside both within and outside the discourse community of the school. For the outsiders, democratic intervention would not involve "remedial" drill and recitation but a cultural immersion into the assumptions and codes of the discourse community. Democratic reformers well understand the ways biology and environment limit our choices and performances, but, unlike cognitive reductionists, they maintain that progress is possible. Individuals can with facilitation achieve far beyond what the dismal pseudoscience of psychometrics allow.

As opposed to technical standards and their positivistic, reductionistic view of cognitive ability, the democratic system of meaning that grounds standards of complexity maintains that there is great hope for cognitive growth and improved educational performance for more than a privileged few. Psychometrics and technical standards rob economically poor and racially marginalized students of future promise. An entire school of psychological analysis has emerged over the last two decades that views the development of higher orders of thinking in terms of and seated within sociocultural interaction (Bohm & Edwards, 1991; Gardner, 1983, 1991; Hultgren, 1987; Kincheloe, 1993; Lave, 1988; Raizen, 1989; Vygotsky, 1978; Walkerdine, 1984, 1988; Wertsch, 1991; Wexler, 1992; Cannella, 1997, 1999; Weil, 1998; Weil and Anderson, 2000).

With these compelling psychological understandings at our fingertips, democratic educators and citizens find it necessary to respond to the assertions of positivistic psychometrics. Our response is meant to put these pseudoscientific dalliances behind us so that we might turn our attention to the important work of educating students of all races, ethnicities, creeds, and socioeconomic classes for personal fulfillment, social justice, and higher orders of cognition. One of the first steps of such a project involves rethinking educational psychology in a manner that appreciates the cultural dimensions of intelligence, that expands the guidelines for what can be labeled as intelligence.

Viewing cognition from this vantage point, we are drawn to the validation of a variety of thinking styles. We don't have to look very far to find forms of intelligence dismissed by

psychometricians. Different forms of intelligence surround us. If we read *Frames of Mind: A Theory of Multiple Intelligences* (1983) by Howard Gardner (dismissed by positivist psychometricians as a radical who doesn't present his findings in the language of statistics), or if we observe individuals that schools have labeled as "slow," more likely than not we will discover fascinating and sophisticated forms of intelligence. Educator John Goodlad (1992) writes eloquently of the brilliance of the individuals he encounters in his everyday life outside the academy and the humility he experiences in their presence. When we avoid cognitive reductionism, a new world is opened to us—in the strangest places we uncover forms of valuable thinking. In no way are we attempting to romanticize the unschooled, but we appreciate the insights the unschooled may provide us.

The point is simple: as our democratic system of meaning embraces unrecognized manifestations of intelligence, it challenges the reductionism and mechanism of psychometrics. Indeed, the democratic psychology of standards of complexity confronts the status quo, rejecting the evaluation of students against a single standard of higher-order cognition. Threatened by an expanded definition of intelligence, right-wing advocates of elite technical standards will be agitated. They will frame our arguments as examples of the breakdown of academic standards, the vulgarization of society. When positivist psychometricians assert their theory of dysgenesis (racial decline based on higher rates of reproduction of *inferior peoples*) or when Dinish D'Souza (1991) claims that an appreciation of cultural diversity undermines traditional academic excellence, they express an ethnocentric and privileged fear of losing control of the cultural discourse, of losing their "natural" right to define "quality." In this context, we can clearly see how power wielders shape the definition of valid cognitive ability.

A democratic system of meaning asserts that science has been inappropriately applied to the study of humans and their social, educational, and cognitive expressions. While Western science has provided innumerable benefits and profound insights to the inhabitants of the planet, there are some areas where its perspective runs into problems. One of those areas is the study of cognition. The democratic system of meaning exposes the ways Western science becomes oppressive in its definition of cognition. While understanding progressive uses of Western science and the complexity of its sociopolitical role, we emphasize the problematic nature of Western science in this context and its power-saturated relationship with cognition.

Western modernism has often understood the experience of various "others" and their ways of thinking from a narrow Eurocentric perspective. The story of the Scientific Revolution in Europe itself is framed in the ethnocentric West-is-best discourse of colonialism. The irony of the story is that Western science is not simply a

European achievement, as knowledge interchanges between Europe and various non-Western cultures had taken place for hundreds of years preceding the Western Enlightenment. Non-Western scientific and technological ideas and inventions traditionally attributed to the West include, for example:

- China—magnetic science, quantitative cartography, cast iron, the mechanical clock, and harnesses for horses
- Polynesia—knowledge of navigation and sea currents
- Aboriginal peoples—knowledge of flora and fauna of Australia (Scheurich & Young, 1997; Hess, 1995; Baker, 1996)

As my colleagues and I put together this volume on educational standards, we witness around us a retrenchment of many Westerners' commitment to modernist ways of seeing. Reacting to threats of social changes; the criticisms of non-Western spokespeople; calls for race, class, and gender justice; and scholarly analyses of the failures of modernist psychology; neoconservatives and liberals alike have sought to deflect criticism with educational and political appeals to a new Cartesianism. Such forces will undoubtedly attack our analysis of a cognition of complexity as merely one more example of "irrationality," of a "return to a new Dark Age," of "barbarians at the gate of civilization." We hope they can get beyond their invective to a careful reading of what happens when multiple ways of seeing and diverse knowledges engage in a dialogue. Such a process, we believe, holds dynamic possibilities.

Western science, like any system of knowledge production, constructs or makes the world it studies and describes. Epistemologies emerge from the cultural experiences of particular groups, not as an unexpected vision on the road to Damascus. Thus, the Western modernist way of producing knowledge and constructing reality is one of a multitude of local ways of knowing—it is a local knowledge system that denies its locality, seeking to produce not local but translocal knowledge and "the correct" way of thinking. Such knowledge is deemed true regardless of context and is the product of the process we previously labeled Cartesian reductionism. This mode of cognition breaks problems down into isolated components. They are then examined separately from one another, categorized, and pronounced "true."

This validation endows both the process and the knowledge it produces with high status that can be used to wield power over people with limited access to such cognitive and epistemological features. When this occurs, Western science promotes a hierarchical and linear form of thinking and knowledge production, dismissing questions of context that provide information with meaning and potential application. Questions concerning the cultural assumptions implicit in the production and use of such knowledge are not deemed important in such a

process (Kloppenberg, 1991; Scheurich & Young, 1997; Freire & Faundez, 1989).

As it pronounces Western ways of thinking as the highest order of cognition, this regulatory science degrades subjugated and indigenous knowledges and subjugated and indigenous peoples. Indeed, modernist science in the guise of anthropology, for example, has been deployed as a weapon against indigenous peoples. The Bureau of American Ethnology produced knowledge about Native Americans that was used to better control their behavior, exploit their labor, and confiscate their land and resources. Indeed, modernist science not only shapes the consciousness of those who operate within its pedagogical orbit, but it also helps determine the social, political, economic, and cognitive conditions of the contemporary world. Whether we feel philosophically comfortable with it or not, modernist science is a powerful force at work both at the macrostructural level and in the everyday microdynamics of our lives. We maintain that a key aspect of a rigorous education involves an understanding of this sociopolitical role of science. Without such an understanding, we may be blind to the role of science as an instrument of colonialism (Sponsel, 1992; Levine, 1996).

To comprehend the power of Western science we must understand its ability to depict its findings as universal knowledge. Modernist science produces universal histories, defines civilization, and determines reality; such capabilities legitimate particular ways of seeing and, concurrently, delegitimate others. Such an ability is imperialistic, as it operates to characterize non-Cartesian knowledges as inadequate and inferior. Too often these power-related features of knowledge production are ignored in the mainstream philosophical study of epistemology. Epistemology, such scholars contend, is a philosophical issue—nothing more.

Such scholars fail to appreciate how modernist scientific universalism excludes "white science" as a cultural knowledge, a local way of seeing. Ethnoscience, like ethnicity itself, falls within the category of "otherness." Indeed, whiteness itself took shape around the European Enlightenment's notion of scientific rationality, with its privileged construction of a transcendental, universal, white, male subject who operated at the recesses of power and who, even in this central position, gave the impression of escaping the confines of time and space (Ashcroft, Griffiths, & Tiffin, 1995). Non-Western modes of cognition are produced at a particular time and in a particular space and reflect the limitations of their venue and time. In the reductionist mode, Western ways of thinking, like diamonds, are forever.

In this context, whiteness was naturalized as a universal entity that operated as more than a mere ethnic positionality emerging from a particular time, the late seventeenth and eighteenth centuries, and a particular space, Western Europe. In this historical configuration, reason is whitened and human nature itself is grounded

upon this Cartesian reasoning capacity. Lost in the defining process is the socially constructed nature of scientific reason itself, not to mention its emergence as a signifier of whiteness. Thus, in its rationalistic womb, whiteness begins to establish itself as a norm that represents an authoritative, delimited, and hierarchical mode of thought. In the emerging colonial contexts in which whites would increasingly find themselves in the decades and centuries following the Enlightenment, the encounter with nonwhiteness would be framed in rationalistic terms—whiteness representing orderliness, rationality, and self-control and nonwhiteness representing chaos, irrationality, violence, and the breakdown of self-regulation.

Rationality emerged as the conceptual base around which civilization and savagery could be delineated (Alcoff, 1995; Keating, 1995). This rationalistic, modernist whiteness is shaped and confirmed by its close association with science. As a scientific construct, whiteness privileges mind over body; intellectual over experiential ways of knowing; mental abstractions over passion, bodily sensations, and tactile understanding. In the study of cognition and education such epistemological tendencies take on dramatic importance. In educators' efforts to understand the forces that drive the curriculum and the purposes of Western education, modernist whiteness is a central player. The insight it provides into the social construction of schooling, intelligence, and the disciplines of psychology and educational psychology in general opens a gateway into white consciousness and its reactions to the world around it. White consciousness morphs into white cognition in the hands of reductionists. Everyone quickly learns what groups "have ability" and what groups do not. Students from the groups that supposedly do not have ability are academically damaged.

These Western rationalistic dynamics of whiteness as a colonial impulse were well articulated by Sir Francis Bacon in his ruminations on the scientific method. Bacon conceptualized science as an entity that would "bind" nature and reduce her to a slave. As a slave, she could perform useful services for Europeans. This dominant-submissive relationship between scientist and nature is reproduced in the colonial relations between European and non-European, in the power relations between universal and local knowledge. Such political dynamics have been rarely addressed in the literature of Western scholarship—psychology and cognition in particular. Of course, great anger is elicited when non-Western or Western analysts point out the assumptions of Western cognitive superiority, racial hierarchy, and colonial relationships inscribed in Cartesian epistemologies. Since such assumptions are seen as natural or even God-given, critics who expose their social construction and ethnocentrism are viewed as enemies of the Western "regime of truth" or of the culture itself. Advocates of technical standards have worked hard to demonize those

who would challenge positivistic proclamations of Western European superiority.

A democratic system of meaning works for forms of social and educational change that reject the practice of cognitive segregation. Our democratic system of meaning is grounded on a humility that refuses to see Western, male, Cartesian, upper- and upper-middle-class, and white ways of thinking as superior. Thus, with this cultural humility in mind, the democratic system of meaning subjects dominant forms of cognition to analysis that had previously been excluded by the modernist ethos. It admits to the educational conversation previously forbidden ways of seeing derived from new questions asked by previously excluded voices. Standards of complexity thus challenge hierarchical structures of cognition, knowledge, and power as they seek new ways of conceptualizing self and world and the relationship between them. When educational standards are grounded on a democratic system of meaning that is concerned with first naming, then changing social situations that impede the development of just, inclusive, democratic communities marked by a commitment to economic and social justice and contextualizing historically how worldviews and self-concepts come to be constructed, then schooling becomes a powerful tool for progressive cognitive and social change.

In the middle of the nineteenth century, schools began to develop into state-supported institutions used in the attempt to discipline future workers and citizens in general. As envisioned by many socioeconomic and political leaders, schools would normalize students so they would fit into the existing socioeconomic structure. Such efforts, of course, collided head on with the efforts of democratic reformers who saw the school as a site for the empowerment of democratic citizens. The conflict between the regulatory and the democratic purposes of school constitutes a main theme in both historical and contemporary schooling. Obviously the debate between technical standards and standards of complexity reflects this traditional American disagreement.

Locating the cause of school failure in the individual pathology of the student, the disciplinary/regulatory educational impulse has assumed that there are rigid right and wrong ways of cognitive development—and poor and nonwhite children's ways of operating are usually seen as wrong. This is only one of countless ways a Eurocentric hegemonic norm structures the lived experience of students and the everyday life of school. Such a norm invisibly establishes a school culture that subtly validates white supremacy, patriarchy, and class elitism.

These dynamics always work within a commonsense framework and so they are often missed by teachers, educational leaders, educational scholars, and standards developers. For example, many educators assume—falsely, Jeanne Oakes (1985) argues in *Keeping Track*—that the presence of lower-performing students in a class-

room will hold back smarter students. Thus, a tracking system is justified on the assumption that higher-order scholarship can take place only in a cognitively segregated classroom. Such cognitive segregation almost always takes place in a race- and class-oriented manner. Such "common sense" eventuates in a situation where privileged, predominantly white students from upper- and upper-middle-class homes receive privileged educational experiences. Such unfair practices are combined with the curricular content discussed previously, which validates existing inequality and suppresses conflict and dissent. So we find that the power bloc often uses schools as a part of a larger strategy to defend its interests against the social discord its policies have produced.

Hegemony is never a simple process where power wielders merely force their subjects to comply. Instead, it works via negotiation, compromise, and struggle to elicit the compliance of the oppressed to the structures that oppress them. By convincing nonwhite and poor students that they don't meet the standards required by educational excellence, the power bloc induces such students to consent to their own degradation. "I'm not good in academics," scores of brilliant workers in the trades and the clerical domain tell us, reflecting the pronouncements of school personnel who had no idea what such individuals can do beyond what the standardized test scores said they should do. Hegemony is an unequal struggle between groups and individuals with disparate power and authority. What power did our friends in the trades and in clerical work have to fight the authority of the school, with its experts anointed with the mantle of science?

Experts too often carry with them the interests of the power bloc, for the knowledge they possess typically comes from a Eurocentric, white, class elitist, male academic domain. Draped with authority, their pronouncements are difficult to oppose (Denzin, 1987; Fiske, 1993, 1994; Christian-Smith & Erdman, 1997; Jipson & Reynolds, 1997). Every year I hear brilliant students, typically from racially or economically marginalized homes, talk about how they failed in school because they were "not very smart." Standards of complexity promote a cognitive approach that understands the origins and untruthfulness of such damaging internalizations.

Mainstream schools structure the hegemonic terrain on which students operate by validating and invalidating competing definitions of reality. The worldview of poor students is often viewed by schools as an absence of "class" and proper breeding. When students resist this characterization and assert their worldviews, they may act on particular values that further disenfranchise them in the classroom. Clinton Allison (1998) reminds resistant students that their silence, disruption, nonperformance, lateness, and absence may "cost them the possibility of using school for their own liberation" (p. 36). Paul Willis (1977) taught us in his study of the "working-class lads" in Birmingham, England, that

their resistance to the class inequities helped to reinforce the class structure by locking them into their working-class status. Marginalized student resistance to mainstream norms is often expressed as a cultivated ignorance of information deemed important by the so-called "cultured." It is, of course, the dominant culture, not the students, who benefit from this cultivated unawareness, as young people lose the ability to critique, to make sense of the world around them.

Such resistance leaves them no escape, no way out. Many times in the last ten decades, students have been unable to enjoy a sense of solidarity with their fellow resisters because of race, ethnic, or gender antagonism. Their disempowerment and isolation in this context is complete (West, 1993; McLaren, 1994). Employing the democratic system of meaning, standards of complexity throw a monkey wrench into this disempowerment process, as they construct classroom activities that help all students—marginalized ones in particular—find their own cognitive abilities. Once such abilities are discovered and validated, they are then used to help students gain a new and positive relationship to academic work. In the standardized one-size-fits-all world of technical standards, the opportunity to help students in this manner would never present itself. Standards of complexity offer a better and more just way to educate our children.

A democratic system of meaning contends that the concept of democracy should be taken seriously and used to reshape all institutions—education in particular. Technical standards from Texas to Minnesota attempt in the name of political neutrality to adjust students to the status quo. In this technicist context, the complex concept of learning how experience is named and rewarded and how consciousness is constructed in schools is not a part of education. The realization that democracy is fragile and must be zealously protected by schools and other social institutions is lost in the technical concern with the inculcation of lower-order cognitive skills. Critical thinking, empowerment, and cognitive improvement are often viewed with fear by the reductionists and are represented to the public as impediments to the "real" learning of "the basics." Technicists contend that advocates of complexity are "concerned with critical thinking and higher order skills" while they "want to teach children to read, write, and master arithmetic."

What they fail to say is that standards of complexity not only teach students to think and function at a higher order of cognition but also teach students to read, write, and do arithmetic at the same time. An important distinction between the pedagogical orientations is that in standards of complexity students *want* to read, write, and do arithmetic and to understand the relationships of such skills to their lives. Such students understand how such skills empower them, as they learn to teach themselves. In this context, students become both self-sufficient and con-

tributing community members. There is no conflict between learning reading, writing, and arithmetic and gaining the ability to appreciate the processes of consciousness-construction, engaged citizenship, knowledge production, primary and secondary research, and higher-order cognition.

Without a democratic system of meaning and a vision of an egalitarian future, students in top-down, technical standards–driven classrooms are merely adapted to the brutal competition of the existing school and society. Even while acknowledging that teachers and students need to be able to "get by" or "make it" in the everyday world of the twenty-first century, we can still see that it is essential that such individuals be exposed to alternatives, to visions of what can be. Without such visions we are doomed to the perpetuation of the structural inequalities and the cognitive passivity of the status quo. Democracy will struggle to survive under such circumstances. The cognitive work of William Perry (1970) on adult thinking and Mary Field Belenky, Blythe McVicker Clinchy, Nancy Rule Goldberger, and Jill Mattuck Tarule (1986) on women's ways of knowing helps us theorize four levels of adult cognition that hold profound implications for understanding the relationship between cognition and democracy. Standards of complexity examine these levels carefully and work to apply them to the construction of a democratic system of meaning and empowered teaching and learning.

The levels break down in the following manner: Level one, dualism/received knowledge, views knowledge as a compilation of isolated facts to be committed to memory. The text becomes the authority, information is dualistic (either right or wrong), and interpretation is irrelevant. Level two, multiplicity/received knowledge, understands that conflicting interpretations and multiple perspectives are inevitable. Even though level-two thinkers recognize ambiguity, they don't know how to deal with it. Thus, they retreat to the position that knowledge is simply opinion. Level three, reflective skepticism/procedural knowledge, appreciates the notion that interpretations of information vary in quality and that some means of assessing their worth is necessary. Thus, they develop a set of procedures, often the scientific method, to evaluate knowledge.

Level four, commitment in relativism/constructed knowledge, accepts the idea that individuals must take a position and commit themselves to it though they cannot be sure that it is correct. Personal knowledge is integrated with knowledge obtained from others, as thinkers on this level move beyond the procedural thinking of level three. At stage four, forms of meta-analysis begin to develop as thinkers ask, Who asks questions? Why are the questions asked? and What are the procedures by which questions are answered? Postformal sociocognitive theory picks up at level four and attempts to socially and politically situate and thus sophisticate the types of thinking cultivated by

teachers operating in the zone of complexity (Kurfiss, 1988; Belenky, Clinchy, Goldberger, & Tarule, 1986; Bobbitt, 1987; Downing, 1990; Maher & Rathbone, 1986).

While resisting the reductionistic tendency to transform these stages into a master narrative that is universalized to all human experience, the stages are useful as heuristic devices, or ways of viewing that promote understanding. Used to help us understand the connections between thinking and politics, they become valuable in theorizing about complex democratic forms of curriculum and instruction. They help us see more clearly the ways in which pedagogy is a form of cultural politics. When a democratic citizenry analyzes written and television/media texts only at levels one or two, serious political consequences result. They may not possess the ability to assess political arguments or to understand why particular positions are taken.

Even at level three, when procedural thinking is applied to textual reading, the thinking strategies learned may be inadequate for reading the messages transmitted at the level of intended coding and signing. Thus, the affective and subliminal impact of the text's semiotic dimensions may remain unchallenged by the literal procedural reading. In the contemporary electronic hyperreality, with its proliferation of encoded communications, a postformal ability to extract meaning from persuasive information forms, such as political communiqués, commercial and political advertising, and pictorial images, becomes a survival skill. The notion of ideological disembedding and deep reading are contingent on such abilities; indeed, our complex notion of an educated person must eventually accommodate them.

The ethical and political demands of the attempt to preserve a democratic culture are on the line. All the talk about extending democratic possibilities, combating political tyranny, preventing assaults on human dignity and freedom, and promoting social justice is of little benefit if citizens are cognitively unable, for example, to deconstruct and expose the encoded intentions of Charlton Heston's appeals for handgun ownership on television advertisements for the National Rifle Association. Educational visions that simply attempt to reveal fixed, external truths or the great ideas of America (which typically include celebrations of white-male military and political victories) fail to engage students with living arguments and with practical forms to act democratically; to uncover power relations, to expose hegemonic intentions is a moral enterprise, a higher-order cognitive maneuver, a courageous act of democratic citizenship.

Conclusion

Drawing upon postformalism, the democratic system of meaning sees the development of a democratic social and educational vision as the foundation for standards of complexity. In this context, teachers and students ask if thinking should be shaped

in accord with the perceived demands of economic production or nurtured by those who are interested in democratic personal and social development. The modernist concern with human development in terms of human capital and productivity allows for mass acceptance of Reagan-Bush-Clinton-W. Bush/Thatcher-Major educational reform as merely one step in a government-directed economic-technological competitive strategy. Like other aspects of the contemporary landscape, thinking has been commodified—its value measured only in terms of the logic of capital. The democratic and ethical dimensions of thinking have grown increasingly irrelevant.

Although aware of the need to avoid oversimplification, I might argue that much of contemporary cognitive education can be divided into one of two classifications: (1) education for cognition manipulation or (2) education for cognitive growth and democratic emancipation. The one-truth epistemology of positivism has dovetailed seductively with the scientific-management orientations of the proponents of human capital development. Both viewpoints have overcome any moral qualms with the manipulation of human beings for desired ends. The controlled labor of the twenty-first-century factory, with its "team players" exercising their "democratic" control of the workplace by making decisions about the most trivial dimensions of the operation (e.g., where to locate the water cooler), is similar to the controlled teachers shaped by technical standards. Such teachers follow top-down administrative edicts as they teach from their prepackaged, teacher-proof materials and reward students for devotion to memory work that studiously avoids the encouragement of questioning attitudes about the entire process (Koetting, 1988; Young, 1990).

Advocates of standards of complexity, buoyed by their concern with the sociopolitical factors that destroy democracy and democratic modes of thinking, provide a perspective on school reform usually missed by other perspectives. With their awareness of cultural context and its attention to race, class, and gender oppression, they think in terms of educational alternatives that are equitable and responsive to the lived needs of marginalized students. As such, standards of complexity transcend simple modernist, rationalist attempts to raise test scores or to transfer skills.

Such democratically sensitive reforms are central to the concept of student, teacher, worker, and citizen empowerment. Complex teachers, therefore, want to educate students who are ready, willing, and able to take charge of their own worlds, as they seek to build communities of active citizens dedicated to universal education and social justice. They seek to emancipate students, empowering them to free themselves from efforts by dominant power to shape their consciousness (Solorzano, 1989; Nieto, 1996).

The emancipatory confrontation with power allows us to glimpse who we want to be, as we struggle to understand how we come to see the world. In our emancipatory journey toward self-direction, our interactions with the democratic system of meaning alert us to the complexity of the task. Democratic teachers come to understand that human identity is such a chaotic knot of intertwined forces that no social agent can ever completely disentangle it. Using Michel Foucault's concept of genealogy, we trace the formation of our subjectivities. We begin to see ourselves at various points in the web of reality, ever confined by our placement but liberated by our appreciation of our predicament. Thus, in the spirit of postformalism we begin to understand and disengage ourselves from the power narratives that have laid the basis for the dominant way of seeing.

Our ability to see from a variety of perspectives forms the basis of a long-running metadialogue with ourselves. This inner conversation leads to a perpetual redefinition of our images of both self and world. Emancipation/empowerment doesn't take place by merely wishing it so. The emancipatory process is long, difficult, and too often unrewarded by others. It takes courage, fortitude, analytical ability, time, and rigorous research and study to exercise power over one's own life and to encourage such dedication in others. Gaining these abilities is the reason we learn to read, write, do arithmetic, and think at a higher level. With this understanding we have developed a sense of purpose, an educational philosophy.

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DYNAMIC ASSESSMENT AND MEDIATED LEARNING

Teach Them All to Fish

Judi Hirsch

Give them fish, they eat for a day; teach them to fish, they eat for a lifetime.

As we enter the twenty-first century, poverty and discrimination continue to affect more and more members of our society; especially impacted and vulnerable are students of color and immigrants from low-income families whose presence is changing the demographics of our public schools. The increasing use of static, norm-referenced standardized tests in the United States, which purport to measure academic progress, neither reflects nor supports the authentic abilities of our young people. Too many students are being failed by our educational system. Given this situation, it is critical that we decide to focus on helping our students to see themselves as they really are: fully intelligent and capable of learning and leading. Acting on this belief will serve our young people well and assure them a future as viable and productive citizens. As parents, educators, and stakeholders working for equity and social justice in an increasingly multilingual and multicultural context, we must decide that the time has come to change the schools and teach them all to fish.

This chapter will introduce dynamic assessment and mediated learning as alternatives to current methods of evaluation. Dynamic assessment and mediated learning are methods of assessing, teaching, and interacting with young people that reveal and enhance the many things they already know and can do. Because it offers a more accurate and optimistic picture of a student's potential for learning, dynamic assessment is a promising method for assisting those students who are presently underachieving and find themselves disenfranchised from the system, but who will soon constitute a majority of our population and thus need to be supported as they take

on their new role as leaders. This chapter will focus primarily on underachieving students, first giving a brief history of the development of dynamic assessment and mediated learning and comparing dynamic assessment to standardized tests. Then I will discuss the role of the mediator and mediated learning experiences (MLEs), talk about what happens to students who do not receive enough MLE, suggest ways to apply MLE to our youth of today, present a case study, and then look at how we might use this approach to change our schools.

The personal and professional experiences that inform my beliefs about young people are varied and somewhat unusual. After graduating from college in 1964 with a degree in political science, I was able to work in an elementary school because New York had a shortage of teachers. After that first year, I got a job in "special education" and have remained in this field ever since. In 1970, I moved to Israel where I worked with Reuven Feuerstein, sharing his methodology with teachers and students throughout that country. When I returned to the United States in 1979, I continued to use his ideas at both the public school and university level, eventually earning a doctorate in multicultural education. My research showed that African American and Mexican American students labeled "learning disabled" who were exposed to Feuerstein's remedial program in junior high school showed significantly greater improvement in their academic and social skills than did a control group of matched pairs who received a more traditional remedial education.

For the past twenty years I have been a resource specialist in urban secondary schools, working mostly with students identified as "learning disabled." I also have a small private practice devoted to assessment, and I offer classes to teachers both through my district and a local university. For the past three years, in addition to having my own classroom at a local high school, I have been visiting other schools, spreading the word about mediated learning to regular and special education teachers and their students. Over the years, I have traveled widely as a consultant and have shared these ideas with many hundreds of educators. These experiences have helped me solidify my ideas about how best to teach, assess, and encourage our youth, as well as how to help those who are hired to perform these critical and challenging tasks—often without receiving much preparation, support, or remuneration.

Static vs. Dynamic Assessment

Let's begin with a basic question. Why do we assess children? What are we trying to learn? The justification for the use of an educational assessment tool should be its contribution to teacher (and student) awareness of how to improve student achievement in school and thus, how to contribute to a student's success in life. The results of any evaluation should enable educators to link remediation to the problems uncovered by the assess-

ment. Static assessment does not facilitate remediation.

Currently, all students are given standardized tests under the same conditions, and the results for most of our children in public school are predictable because test scores are known to correlate with parental income, or zip code. The scores for low-income children of color and immigrants are often quite low, even in the single digits. Further, the testing experience for these children is so devastating that they often emerge convinced that they are stupid. I have seen children cry or sit with their heads covered during a test because it is "against the rules" for us to give them any form of assistance. (One can only speculate about what students think happens to their teachers during tests, since at all other times we are so eager to help them).

If you are an adult who went to public school, chances are you have taken many norm-referenced, standardized tests, which have been carefully designed to sort, rank, and place everyone on a bell-shaped curve. Many people have internalized the belief that this bell-shaped curve truly represents society, but it is only an artificial statistical construct and not real at all. It is carefully designed so that only a few students can get very high or very low scores—which is usually taken to mean that only a few people are very bright and only a few very slow—while the great majority languish somewhere in the middle. In addition, half of those taking these tests will end up below the norm, or below "average." It is just as plausible, however, that all of us are very bright, which would mean that the shape of the curve would be a gentle upward curve rather than a bell shape, more like the (in)famous Nike swoosh.

The results of static, standardized, norm-referenced tests tell us nothing about the person we are trying to reach. What can a teacher do knowing only that a child's reading score is at a grade level of 3.6? Or that their math score is 4.8? Given nothing but the test scores, will the teacher know what students like to read or what kind of math problems are hard for them? Or why they received the score they did? Were they scared? Was there a word they didn't understand? Did they have a traumatizing experience that morning before the test? At what critical point did they need to hear a word of encouragement?

Test scores answer none of these questions. There are so many reasons students do poorly on tests—all tests but especially the "high-stakes" tests that determine whether or not they'll graduate or go on to the next grade—that it's a useless and hurtful way to try to learn something about the youngsters we teach. There must be a better way of assessing our youth.

Those of us who attended school in the United States probably remember the experience of taking a standardized test. Start time is the same for everyone, and in each room the familiar words sternly sound: "When I say 'Go!' open your booklets and begin to work. No talking! Make sure you mark only one answer for each question on your answer sheet. If you

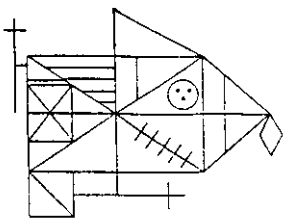
make a mistake, be sure to erase your first answer completely. When I say 'Stop' put your pencils down. . . . " Not only is this procedure unpleasant for most young people, but neither the teachers nor the parents, and certainly not the students, will ever know any more about how to improve performance after the test than they did before, even if the results arrive sooner than the usual three months' delay.

There are other options, other ways of testing people and reporting the results. One alternative is to use criterion-referenced tests, which are designed so that everyone who learns what's being tested can pass. Driving tests are a common example; people are evaluated based on whether or not they can drive a car, and everyone who can drive passes the test. We don't need a norm-referenced test for driving, so why do we need one for academic subjects? People don't feel as bad about themselves in relation to driving as they do in relation to math or spelling or any of the areas in which they've been tested on norm-referenced tests.

Another option is to use dynamic assessment. This approach provides much insight into the cognitive functioning of young people; all that is required is time, persistence, and commitment from both sides. In this context, usually initiated by the adult, we ask underachieving students to trust the teacher/examiner enough to risk exposing their weaknesses and to experience the fear that we might not always be there to support them. In return, as caring adults, we must make a commitment to support students as they struggle to gain control of their lives. Often they need to be repeatedly reminded of the truth about their intelligence. I have never met a student, or an adult for that matter, who has been able to totally free themselves from the fear that they're not smart enough.

What follows is a very abbreviated example of an item from a dynamic assessment, which, unlike norm-referenced standardized tests, is designed precisely to provide immediate, authentic feedback to everyone present. We learn how a student thinks—which cognitive skills are in evidence and which ones aren't. Here are the results of an assessment performed with a high school student, let us call her "M.," who was interested in knowing how to improve her thinking. If you like, you can follow along as directed; however, if you choose to do that, you must not look ahead. At the end, you can compare your work with that of the student. Are you ready?

Step 1: Copy the following, known as Rey's Complex Figure Drawing (CFD) and label it #1.



Step 2: When you are done, turn the page over and make the same

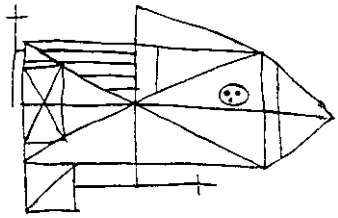
drawing from memory. No peeking! Now, compare your second drawing with the original and notice how well you remembered what you drew.

Here is what M. remembered:

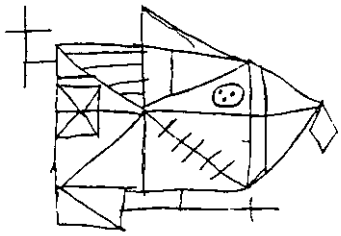
As you can see, M. barely remembered anything, and if we stopped the assessment at this point, the prognosis would be rather dismal. If this were all she was able to do at the age of sixteen it would appear that she had (measurable?) cognitive deficits, and she certainly wouldn't be encouraged to pursue an academic career. This assessment, which is currently used by many psychologists, can cause a great deal of hurt and damage if we look only at the evidence we have thus far and decide that what we see represents the student's cognitive functioning. It appears as if M. has no "short-term memory," which might explain why she isn't doing well in school. (For those of you who tried this on your own, I would imagine that your memory drawing was better, and that M.'s results may shock you.) However, dynamic assessment involves students in a test-teach-test situation, so our work is just now beginning. All we have established is a baseline; all we know is what M. can do without any help, support, or encouragement.

What happens next involves mediated learning, the part of the assessment where I suggested to M. ways she could improve her performance. There is no "failure" because both of us are in a learning situation. We both want to figure out how to help her do a better job, and M. knows that this is the purpose of the MLE. After mediation, I ask her again to make a copy of the drawing and, following that, another drawing from memory. If we look at her last attempt, and compare it with her first, we can see that her second memory drawing is far superior even to her first copy.

M.'s second memory



M.'s first copy



The reason for this vast improvement is that M. has learned to make a plan and is now using this cognitive ability to complete the drawing. Both she and I learned valuable information about the way she thinks, which will help her improve her academic achievement and organize her life. The results of this assessment will be

the guiding principles around which we will work until she graduates. Of course, this is a very condensed vignette. Remediating a student who is functioning as much as six to eight years below her peers requires ongoing vigilance, attention, and encouragement.

When M. started high school as a sixteen-year-old ninth grader, she was truly unable to perform at any reasonable academic level; her standard scores were in the 60s and 70s (where 100 is considered average), and her grade equivalents were no more than 4.0 in any academic subject—some were even less. Her cognitive skills were also quite low. Not only that, but she was also a "noodle," totally unable to take responsibility for anything, including things that were very central to her life. After three years of mediated learning, she graduated from high school, got a job, and is now attending a local college; the last two accomplishments were done on her own.

A Brief History of Dynamic Assessment

Reuven Feuerstein, a refugee from Romania, was the chief psychologist for Youth Aliyah, the agency responsible for the care of teenagers who came to Israel after it achieved independence in 1948. Feuerstein worked alongside other Jewish doctors, teachers, and psychologists to help examine the flood of adolescents arriving from Europe and North Africa after World War II. He had trained in France with Jean Piaget and had become familiar with what was then thought to be normal child development. Under Feuerstein's supervision, these young immigrants were assessed to determine their suitability for either farming or academic life. When these uprooted teens were assessed on standardized tests of intelligence, much to his dismay their scores were so low that most of them, under normal circumstances, would have been consigned to custodial care, an unthinkable option after 6 million Jews had just been lost during the war.

Fortunately, Feuerstein understood that there were compelling reasons underlying these low scores, having more to do with the traumatic experiences the young people had just been through than with their inherent abilities. He refused to accept that their current levels of performance might be permanent, and he reflected upon what could be done to improve them. Criticizing the test process and results rather than the children, Feuerstein devised a more useful and promising way to look at human intelligence. He focused on the process of learning rather than on its product—that is, on noticing how people learn rather than on measuring what they already know. To evaluate the potential for learning of these educationally, emotionally, and culturally deprived immigrant youth, Feuerstein developed the Learning Potential Assessment Device (LPAD). The LPAD is a powerful tool based on mediated learning, the theory that people learn best when taught by someone who is deeply committed

to their success, with the goal of fostering the learner's independent thinking strategies. In mediated learning, the teacher does not dispense information, but instead encourages a student to think and to struggle with the task at hand.

The LPAD puts students into a dynamic learning situation and focuses on improving their thinking by identifying the strategies that enhance student learning and the cognitive deficits that need to be overcome. The focus is on noticing the change (or modifiability) in the student's receptivity, as well as the extent to which this receptivity can be magnified. This outcome can only result if we never give up on the student and continue to have faith in their ability—the basic prerequisite to being a good mediator.

Feuerstein's theory, called structural cognitive modifiability, informs dynamic assessment. It maintains that if we can change the basic way in which people think (i.e., their cognitive structure), then we can effect a permanent change in their learning. This is different from giving a person a piece of information, which may or may not be remembered. That is why it is important to keep reminding students to focus on improving their cognitive strategies. Successful thinking requires the ongoing use of many cognitive strategies. Thus, in order to effectively remediate a student who is doing poorly, we must look for underlying deficiencies, weak or missing cognitive function(s) rather than focusing on superficial content. (A complete list of Feuerstein's cognitive functions can be found at the end of this chapter.)

Although he sees the thinking process as a whole, Feuerstein separates cognitive functioning into three interrelated phases of the mental act: the input phase, where information is gathered; the elaboration phase, where information is processed; and the output phase, where solutions to problems may be expressed. This categorization helps focus intervention at the appropriate phase. The aim is always to identify the type of error rather than the fact that an error was made. We hypothesize about which cognitive deficiency needs to be addressed and in which phase it is located in order to make the student more aware of his or her thinking.

For example, suppose a child wrote "6 x 2 = 8." Marking the equation wrong by putting a big red "X" next to it or circling it implicitly says that the answer is wrong without involving the student in the assessment process. However, if we are interested in finding out how the student got this answer, then we might simply ask. If the student says, "six plus two equals eight," we can then try to help the student notice that the real problem (the cognitive deficiency) is located in the input stage. We might hypothesize that it is a "lack of or impaired spatial orientation" because the student moved the "x" in space, making it into a "+" sign. Clearly, if the child knows both that 6 + 2 = 8 and 6 x 2 = 12, we don't have an incorrect answer but rather a misunderstood problem. It is important to communicate with stu-

dents and listen to them if we really want to help. Sharing this information with students increasingly allows them to check their own work and rely less and less upon the teacher; it also facilitates their participation in the enhancement of their achievement, making them more self-confident, responsible, and independent.

Dynamic Assessment of Learning Potential

When dynamic assessment is used to evaluate students' learning potential, the procedures, goals, and experiences are quite different from those associated with standardized tests. Below are ten principles that form the backbone of dynamic assessment:

1. The instrument of assessment is the assessor, not the test. Results are based on the well-trained examiner's judgment regarding the manner and modality through which the student's learning is best achieved—oral or written language, words, pictures, numbers, and so on—in addition to any idiosyncratic information available that can be used to enhance student success.

2. The structure of the test situation is unique. Static test situations, such as are required for administering the PIAT, WRAT, SAT 9, Woodcock Johnson, SAT, and WISC, give students only one chance to answer each question; they are allowed no assistance at all in understanding the questions, nor is any feedback given regarding their answers. Dynamic assessment uses a test-teach-test approach. We are interested in knowing how students solve problems so that they'll do better on the next challenge facing them.

3. Students have unlimited time. We may note how much time the young person "invests" in solving the problem at hand and compare it to the next time the student is similarly involved, but if we want students to struggle until they succeed, they need to know they'll have as much time as they need to work on a problem.

4. The examiner is interested in maximizing the student's success. Instead of a large impersonal arena with separate desks for each of the many students in the room, none of whom are ever allowed to talk, dynamic assessment is based on the intimate interaction between the examiner and the examinee. The focus is on immediate mediation-observation, discussion, intervention, and reinforcement, as well as on ongoing verbal interaction and feedback.

5. The focus is on learning where the student's strengths lie and how to enhance the student's ability to learn. There is a shift in orientation from product to process; our focus is on assessment, not on measurement. We seek reasons for success and failure and see these explanations as more important than the number of correct answers. Often, in the process of explaining an incorrect answer, the student will self-correct, revealing comprehension that can only be observed in the presence of an interested and supportive listener.

6. There is no manual for converting raw scores because there are no

raw scores, nor are there any standard scores, quartiles, percentiles, or grade level equivalents with which to compare them. Peaks are sought rather than ignored, and "average" scores are never used. Each person is unique and grows up with a particular set of circumstances—including hurts like classism, racism, sexism, and so on—and needs to be related to and valued as the unique person he or she is. Students can only be viewed in relation to themselves. We don't compare or report on how well students perform in relation to other children. Dynamic assessments are not norm referenced. Comparisons are quite meaningless for they don't tell us anything about this particular child, why he or she is having a difficulty or how to remediate it.

7. When interpreting results, the examiner focuses on indications of cognitive strengths and weaknesses. The examiner tries to identify and describe the successful strategies students use in approaching the work, strategies that will influence their future thinking and learning. In addition, the examiner tries to locate these strengths, along with weaknesses, at one of three phases of the thinking process: at the input level, at the elaboration level, or at the output level.

8. Dynamic assessment presents a learning opportunity for both students and teachers. This dynamic diagnostic process develops students' ability to reflect on their own learning and examine their own thinking in the process of being assessed. It is not something that the teacher or examiner does *to* the student. Student and teacher are both engaged together in this ongoing, collaborative enterprise. Thus the "testing" process is really a learning process that drives the student's intellectual development.

9. The examiner is interested in knowing how receptive children are to intervention. Some students allow and even invite teachers to support them in their learning struggles, and they thrive with teacher assistance, while others put up a wall of resistance that makes helping them very challenging. Often, this is the most important piece of information a teacher can have because it will determine what kind of intervention and support—academic and/or emotional—a student needs in order to succeed.

10. During the assessment an attempt is made to connect what is noticed about the child's cognitive functioning with life outside of school. The assessor focuses on the child's thinking process and not on some separate, unrelated skill.

The intent of these principles is not to ascertain the child's ability to read, write, or compute, but to find the underlying cognitive reasons that may explain why these skills are not being well developed. These cognitive deficits manifest themselves in all areas of a child's life, which is why remediation is both so crucial and so powerful. Getting children to successfully implement a cognitive strategy will have a more far-reaching impact on their life than mastering any specific skill, like long division, that we could possibly teach them.

For example, if we notice that a student is having a hard time organizing information, we might ask what his or her room looks like at home. This usually elicits a laugh from a parent (if it's possible to arrange for one or both of them to be present during the assessment). When we take the time to discuss how one might remedy this situation, students often begin to apply what they are learning about themselves to other situations in life, like organizing a notebook or backpack or scheduling their weekend activities. Parents can get insight about how to support their children at home in order to reinforce what's being done at school. The key lies in learning how to mediate the world for their children rather than in telling them what to do.

The Role of the Mediator

Feuerstein was influenced by Lev Vygotsky, a Russian psychologist and early contemporary of Piaget, whose major contribution to learning theory is the recognition that children learn best in a social context when assisted by a caring adult, or mediator, who engages with them in their zone of proximal development (ZPD), the "distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1986, p. 86). Vygotsky was much more concerned with the qualitative assessment of psychological processing and the dynamics of the student development than he was with the quantitative assessment of "intelligence." Based on the learning theories of Vygotsky, which remind us that children come to school with a powerful knowledge base from their own lived experiences, mediated learning focuses on how people process new information rather than on what they already know and can do.

In Feuerstein's work with young immigrants he became their mediator. He helped these teenagers regain their ability to think by providing them with a caring adult who saw each of them as bright and capable. His decision to assess their learning potential instead of their amassed knowledge represents a critical break in psychometric evaluation. Feuerstein used a cyclical approach to teaching and remediation. Based upon the initial interaction, Feuerstein would make a tentative hypothesis about a child's cognitive functioning and then act on this assumption when remediating, noticing how well this intervention was received by the child. He would then use this evidence to inform and refine his thinking before the next encounter. As mediators, we help children to recognize the thinking patterns that they use when successfully solving a problem and then we encourage them to apply these approaches to other, similar situations, thus building up a repertoire of cognitive strategies that can be generalized to other situations in their lives. Teaching young people to generalize

is one of the cornerstones of Feuerstein's remediation and sets it apart from other types of remedial methods.

It is important to remember that it is the young person who is doing the learning, that mediators are only there to provide the necessary structural support, information, and encouragement. We are midwives—vital as catalysts, yet outside of the learning process. If a child can crawl and needs a hand in learning to walk, we would be there as mediators, cheering her on, holding out our hands and saying lovingly, "Come here, sweetheart." We wouldn't insist that she continue to crawl, nor would we demand that she begin to skip; we certainly wouldn't give her a "walking" test.

Mediated Learning Experiences

People learn in two basic ways: They learn from direct exposure to the world, and they learn from being taught about the world. When the latter is done with intention, or *conscientiousness*, to borrow a term from Paulo Freire, Feuerstein calls it a mediated learning experience (MLE). The main characteristic of an MLE is that the mediator mentally transcends the content of the moment, thinks about the future, and focuses on the learner rather than on the problem that's being addressed; the emphasis is on how the child will remember this experience rather than on what we are doing at the moment.

There is a quick and easy way for parents, teachers, and caregivers to ascertain whether or not they are offering a child an MLE: If the focus is on the here and now, on getting the job done or providing an answer, chances are good that there is little mediation going on. On the other hand, if the focus is on having the child learn something that he or she can use in the future, the likelihood is that the child is being taught a cognitive strategy that will empower him or her to take more responsibility the next time a similar situation occurs. For young people to become more responsible, the intentions of the mediator must be made clear, the desired behavior must be explained and its connections to the future made explicit; children need to know why they are being asked to behave in a certain way.

Many teachers, parents, and caregivers are very pressed for time, always trying to meet the perceived immediate needs of the children in their care. So they are often unaware of how important and far reaching this concept of mediated learning can be. Adults are often overwhelmed by the needs of the moment and may think that mediating is too time consuming, not realizing the ramifications of their actions. This is true for parents who are trying to get their children ready for school, who may be struggling with them about eating breakfast, cleaning up after themselves, brushing their teeth, or dressing and getting out of the house on time; it may seem quicker for parents to just do the job themselves. Or, perhaps a teacher is trying to get class dismissed and there seems to be no time to have the students help with cleaning up or with

checking to see that they have everything they need in their backpacks. Maybe the teacher would like for each student to proofread all papers before handing them in, but there doesn't seem to be enough time, and the teacher can do it faster alone. Yet it is better for everyone if a mediational environment is established because the children will begin to take on more responsibility and the adults will get to have a life.

Unfortunately, if the aforementioned routines continue unchanged, the adults can become frustrated and the young people can experience cognitive stagnation. A common theme in all of these situations is a missed opportunity for modifying behavior so that the young people become more responsible. Another positive side effect of using mediation is that once new behaviors are in place, the adults can rest easy knowing their children are on their way to becoming thoughtful, caring adults and that they themselves don't have to work so hard. We get to do less worrying and also less actual work because the responsibility for making their lives go well is being slowly internalized and acted upon by the young people.

Perhaps it would help if we were to remember that humans are part of the animal kingdom, and that as such, it is the adults' duty to teach the young ones to fend for themselves so that they will eventually be able to do so successfully. This is why we must take the time to mediate and remediate until the job is done. Every time we take over for the children, we are not only depriving them of opportunities to learn, but we are working overtime at a job that rightfully belongs to someone else. Again, the quick "test" of whether some intervention is "mediated" or not is to look at the purpose; if the purpose is to get the immediate job done, we are not only not mediating, but we may also be very subtly conveying to the young people that we have no confidence in them. This leads to a condition known as "learned helplessness," which in turn requires more intervention, thus making us work harder while actually setting the young ones back, sometimes with dire consequences.

It is worth the initial investment of time, both for their sakes and ours, to decide to act as mediators rather than as dispensers of information. While this may take more time in the beginning, once the young ones learn what is expected of them (and the amount will grow exponentially), they will rise to the occasion. The only caveat we must bear in mind is that those who have had more MLEs will become independent sooner. In the beginning, teachers may have to work harder because they will need to be thinking in new ways about what they are doing and modeling, (called *metacognating*), but they will soon see less and less need to stay up late making lesson plans or grading papers, and they will come to work tired and full of resentment less and less often. Instead, teachers will have the focus required to notice where their students need a hand, and they will actually be able to give them the attention they need be-

cause the other students will be busily working on solving problems that they know they can do because of their previous exposure to MLE. Furthermore, as time goes on, students will begin to mediate for each other.

For example, suppose a child wants to know how to spell a particular word. Many teachers are so busy and overwhelmed by large classes that they just tell the student the correct spelling, which of course sets in motion a whole lot of precedents: the next time that child wants to know something, the teacher, who has already established herself as the repository of all knowledge and wisdom in the classroom, will be asked, and if other children witness this interaction, they too, will seek out her wisdom. More damaging, though, is the effect on students, who are never given a chance to see if they know anything.

The MLE alternative is not difficult. For spelling inquiries, for instance, I always ask, "How do you think it starts?" and often suggest that they say the word in syllables and think of words that sound the same that they already know how to spell. This is important; I want my students to know that they have lots of right answers lurking inside them, as I remind those who rush to help others by telling them instead of letting them struggle. The same thing happens when someone asks me what day (or date) it is. I ask, "Where would I look?" or "How would I find out?" They always look at the calendar and understand what I'm saying. They definitely do not ask me again! One thing I can say about my students with learning disabilities is that they are more able to struggle independently than many regular education students I have encountered. Just today, D., who used to be one of my most challenged spellers, did not ask me how to spell "backwards" but asked me if the correct way to spell the word was "b-a-c-k and then w-o-r-d-s." I told her about the "a" in the second syllable, but otherwise, she got it perfectly right.

What Happens When Children Are Deprived of MLE?

All cultures prepare the next generation to become competent, flexible adults, able to carry on their traditions. Because they are already competent at doing many things, people thus trained can more easily adapt to new ways. This has enabled cultures to survive for many thousands of years and also to accommodate to change. People whose culture is intact seem to have some inner regulatory mechanism controlling their behavior. They were probably raised in a family or group that had specific ways of doing things, such as preparing for celebrating life events, obtaining and preparing food, and so on, or perhaps they came here from another country and kept their former ways, which might include speaking their native language or maintaining their manner of dress or customs.

Feuerstein describes how easily the Bedouins, a nomadic people living in the Negev desert in southern Israel,

were able to adapt to modern life as compared to some of the European immigrants who had come to Israel so traumatized by the chaos during and after World War II that they had no set way of doing anything, no culture to fall back on. For the Europeans, everything had to be retaught, remediated. The same was true of the Mien and the Hmong who immigrated to the United States from Southeast Asia after the Vietnam War. For them, learning to read and write English was very challenging since they had no written language with which to compare it.

The trauma suffered by Jewish children in war-torn Europe is in many ways comparable to the trauma faced by many of today's immigrants who have recently come to the United States from Southeast Asia and Central America as victims of political or economic oppression. The same is true for many African Americans, Mexican Americans, Native Americans, and others, including poor whites, who are living in the toxic environments of our nation's ghettos. Feuerstein teaches us that it is crucial that we never give up on any of our students. Even if we first encounter them when they are in their teens, perhaps not exhibiting much in terms of a cognitive repertoire, they can always benefit from our efforts at remediation. As Martin Buber has said, "It is the duty of a teacher to see children as they can be, not as they are." This working hypothesis is consistent with the research (Rosenthal & Jacobson, 1992) that shows the best predictor of student success to be teacher expectation. And if one asks what correlates most with success, the answer, of course, is success!

Feuerstein knew that early and frequent exposure to MLE would increase a child's capacity to learn from direct contact with the world, including learning from their teachers at school. However, he also knew that racism, extreme poverty, war, serious physical and mental illness, and various forms of abuse, neglect and deprivation could interrupt opportunities for providing and receiving MLE. As a result, children's intellectual development is frequently suspended when they don't have either the stability of caring adults or the physical continuity of place. Sometimes the ravages of extreme poverty and other forces that destroy the integrity of the family make it almost impossible for parents and caregivers to transmit the powerful cultural wisdom that has sustained their people in the past. When patterns of disruption persist over succeeding generations, people can lose their ability to cope with daily problems. Their culture begins to die, and because of their special vulnerability, the young ones become the first casualties.

We frequently see this phenomenon in schools that serve poverty-ridden, marginalized, and immigrant populations. Children who appear to be bright and intelligent are often unable to make any progress in school. They may be present in class and even participate in a learning experience, but if they remember events at all,

they remember them as isolated occurrences rather than part of a coherent and sequential body of knowledge. Teachers complain about giving tests based upon material recently taught and finding that some children seem genuinely unable to remember anything, despite the fact that they were in class. Feuerstein calls such behavior an "episodic grasp of reality" and describes it as a cognitive deficiency. The best intervention in this case is to remediate by helping to build the cognitive structures that will help the children to see that things are related; perhaps, due to a lack of MLE, they never learned how to make connections because it was never modeled for them. It may be that teachers will have to stop putting more information into children's heads until they have helped the children to construct a kind of mental filing cabinet in which to store the accumulated data so that it can be easily retrieved.

The inability to transmit one's culture is especially poignant for those immigrants who are innocent victims of war. For example, Cambodian children who were born in Thai refugee camps often couldn't receive anything from their parents, not even water, because it was trucked in and doled out by the United Nations workers. (It's too bad that UN personnel weren't aware of the ramifications of their actions.) Such experiences severely impacted those families' ability to pass on their traditions, and for children who haven't been taught the ways of their people, there is little cognitive foundation upon which to build. These children become intellectually vulnerable and are often prey to the allure of quick and slick attention-getters like fads, junk food, TV advertisements, video games, and the like. Young people who grow up without any rituals around mealtime, bedtime, or holidays are frequently unsuccessful in school. Because routines are unfamiliar to them, they are unable to remember to come to class on time, prepared to learn. They live for the moment and clearly lack planning behaviors because there are few ritualized, sequential events in their lives. Alienated from (and sometime rejected by) the mainstream culture, these youth often drop out or get pushed out of school, and they all too often end up hopeless and incarcerated.

In order to prevent such dreadful outcomes, we need to help these young people rebuild their cognitive structures so that they can learn about the world and make sense of it. Once these structures are in place and they learn to use them, the young people will be able to direct their own learning. We can accomplish this in two ways: we can try to reconnect these students to their culture, so that they can benefit from the ancient wisdom and take pride in who they are, and we can simultaneously provide MLE to help them make up for what they missed as young children.

How Can We Offer MLE to Underachieving Youth?

What can we do for children who haven't had enough MLE to benefit

from what we are offering them at school? How can we provide opportunities for young people to succeed when in many of today's urban classrooms, teachers are overwhelmed and students keep falling further behind? How do we bridge the gap between nonmainstream cultures and our own? We need to find answers without blaming the victims of this unjust system: the students, the parents, and the teachers who go home crying about the children they haven't been able to reach.

Helping our youth would be easier if our culture were more child-centered. Unfortunately, certain groups in our society are looking for a quick fix, and few of those in power seem to have the courage to take the responsibility for making real change, which would require both a reassessment and a realignment of our priorities and fiscal allocations. Pointing fingers at youth, especially those who are poor, immigrants, and/or people of color, has become more and more common. One example is the recent spate of legislation in California that was anti-youth (Proposition 21), anti-immigrant (Proposition 187), antibilingual education (Proposition 227), and anti–affirmative action (Proposition 209). We must find positive ways to counter this oppressive and discriminatory trend.

Sometimes in our zeal to discover the cause of a student's difficulty we find a culprit instead. Frustrated by our inability to help, we often blame the student, saying, "If you'd only try harder!" This implies that the student is lazy, but we must assume that all of us, including our students, are always doing the very best we can, given our life circumstances. Perhaps the student has been living in poverty, in humiliation, or in an abusive situation; perhaps they have had to care for siblings and do the chores because no parent was around; or perhaps they have had to put up with an alcoholic or a drug abuser in their life. We must make the assumption that there are very good reasons why people behave the way that they do, even if we don't know what these reasons are. We must keep on supporting our youth until they get strong enough, until they believe in themselves enough to liberate themselves from where they are stuck, whether the cause is external, like racism, or some form of internalized oppression, like believing they're not smart enough.

In many cases, before we can even begin to address the remediation of cognitive functioning, we must first penetrate the veil of hopelessness that seems to surround many of our youth. One way for teachers to contradict their students' negative feelings is to become involved in their lives. I really like my students and enjoy spending time with them and showing them that I care. When I am with them I always act on my belief that they are brilliant in a way that gives them hope, so they can find the courage to use their cognitive skills to tackle the work before them. I compliment them and brag about them to others; I go over to where they are sitting and have them read each other's work; I

am demonstrative when working with them; I call them at home and tell their parents wonderful things about them; I bring them newspaper articles that have bearing on their lives; I take lots of photos of them and always make extra copies for them; I bring in books I've bought just for them; and I invite people I've met to come in and hang out with them. These actions help them to start believing in themselves and give them the fuel to begin to make efforts on their own behalf. Eventually, they have enough confidence in themselves to take on new challenges.

Of course, getting these young people to believe in themselves is neither quick nor easy, and depending upon how long the child has been mired in despair and what kind of support system he or she has outside of school, this process could take a long time. In school, it helps if children can stay with the same teacher for more than one year. It also helps if we set up our classrooms so that the students' peers, people they can count on, become part of their support system, always reminding them of the truth about themselves. The path to self-confidence is not necessarily straight, but filled with setbacks and plateaus; each time a new challenge appears, I often need to remind the students once again of their innate goodness and intelligence. Usually, the "reminding" takes less and less time with each new challenge, and the more the young person is surrounded with supporters, the less likely the fear will endure. The trick is to outlast the students' hopelessness; we can never give up on them, but we must remember to be their ally, not their caretaker.

My experience has been that students don't really get stuck in subject matter. They don't get bogged down, say, in reading or in math. Rather, they become paralyzed by fear and hopelessness when faced with a task they think they can't do, in schools that pay little attention to their needs. They get stuck when they forget that they are really brilliant and capable of knowing what to do when they don't know an answer right away, that they do know how to approach a problem.

In order to provide more MLE in our schools and homes, we need to find out where the young people are challenging themselves so that we can give them a hand exactly where they need it. In order to find that place, we need to know our youth well and develop real relationships with them. Right there, in Vygotsky's ZPD, is where we want to be, supporting the young people as they struggle to learn. The struggle for us, as teachers, is to refrain from interfering with that process while at the same time being totally there for the students, cheering them on as they learn that they can learn. I actually tell my students that I get paid to remind them that they're brilliant when they forget.

For many of today's teens, it is more acceptable to be seen as a troublemaker than as someone who doesn't understand; this is especially true for boys. It's the rare student who will ask an adult for help. This apparent lack of interest is often seen as apathy

or defiance by parents and teachers who aren't aware of the humiliation associated with requests for assistance. It is the wise adult who can figure out a way to give young people support without making them appear weak or needy in front of their peers; this is especially relevant for students who struggle with language or academic skills because they already feel so inadequate. Sometimes, the best we can do is work with them away from other students, either one-on-one or in small groups, until their confidence is built up enough for them to allow their needs to be seen in a regular classroom.

As adults, one of the most meaningful things we can do (for ourselves and for our children) is to continually express belief in our youth, even if people gave up on us when we were young. This is difficult to do because adults no doubt inadvertently hurt us when we were young, and much of this probably occurred at school. Many of us have internalized the mistaken notion that we aren't smart or that we can't learn something like math or a foreign language, how to swim, how to sing, or whatever. In fact, the more that teachers (or parents) believe that they, as adults, can't do something or learn something, the more readily they are willing to accept that some of their students (or children) can't learn either. Even those of us who aren't aware of this internal dynamic unconsciously perpetuate it. One positive side effect of believing in the healing power of our actions toward young people is the possibility that we will see that we, too, can learn something we never thought we could.

Schools should be reorganized to help students at the moment they need help, rather than first waiting for them to become humiliated and defeated. I try to be with my students every step of the way rather than waiting until an assignment is ready to be handed in—or more frequently, *not* handed in—before checking their work. It is important to me that they get help right away and whenever they need it, like having training wheels that are left on for security's sake long after they've outlived their usefulness. It must be the child who decides when to remove these supports, not the adult. We may see that the young person is brilliant long before they recognize this truth, but they have lived so long with their humiliation that we must be patient and wait until they see it for themselves. (Many of us still carry around old hurts that we have decided are real just because nobody was around to prove us wrong; we can decide that this won't happen to our children).

Another way to be supportive of these students is not to hold them too tightly to time constraints. Even in the "real world" people are both forgiving and understanding when someone misses a deadline; very few decisions are so crucial that they must be made within a circumscribed time limit. Many adults I know are late or forgetful and the penalty, if any, is minuscule. So why is it that deadlines are so inflexible and holy at school? Why must students fail before being al-

lowed to get some extra time on a test or an assignment? What craziness! Are morning newspapers snatched from people's hands before they're done reading? Are showers turned off in midstream? Have parents been told they're spending too much time playing with their children or taking too long to complete a crossword puzzle? Why tell students they'll fail if they don't finish a test or an assignment in a certain amount of time? Why do we need such a rigid system of winners and losers?

Today, many of these "losers" are referred for special education in the hopes of getting them some individual help, but there are many problems with this option; it is not a panacea.

1. The process is very lengthy and very costly; many people need to "test" the student, including nurses, psychologists, regular teachers, and any specialists whose opinions might be needed.

2. In order for students to "qualify" for services, a "discrepancy" needs to be found between their IQ and their academic achievement, both as measured by standardized tests. Unfortunately, many low-income students of color and immigrants don't get high enough scores on IQ tests to reflect at least average intelligence, so when the test results are compared, no discrepancy is found. (Until 1975, the situation for African American children referred for special education in California was such that most were put into classes for the retarded because of low IQ scores. Since that time, in California, IQ tests cannot be used to place African American children in special education.)

3. Many children and parents are too humiliated to make use of these services and refuse to participate because of the teasing and mistreatment often suffered by the children and the stigma parents may feel about having a child in this program.

4. Special education services are extremely costly because of the mandate for one-on-one services by a credentialed specialist.

5. Few people know how to support these students, and the few who do are in high demand; they are stretched very thinly, work very hard, and receive low pay and little respect. They have a high burnout rate and many leave public education for private practice.

6. Much of the teaching that is done in special education classes involves direct instruction rather than mediated learning, so children's underlying cognitive needs aren't addressed; thus they don't really make much progress.

7. Annual testing in special education is static rather than dynamic. Thus, student progress, when it occurs, often isn't reflected in test scores. Sadly, most students who do qualify for special education rarely leave their placements to return to regular education and thus continue to fall further and further behind.

8. Most teachers who go into this field really want to help students, but half of the special education teacher's time is consumed by paperwork, which drives many from their jobs.

9. There is really not much difference between the needs of those who qualify for special education services and other low-performing students, many of whom would qualify for services if tested.

10. All those who need academic support should be able to get it. It would save time, money, and young people's self-esteem if every school had a Learning Center where students could go to get help whenever they needed it. Teachers trained in using MLE could staff the room on a rotating basis. All that would be needed are some basic resources such as books to read, computers for word processing, and tables to work on (individual desks being too isolating).

Another way to offer our students more MLEs is to expand the role of school psychologists. Often, their activities are limited to testing children for possible inclusion in special education programs using static assessments, which have resulted in some students being classified as retarded. I can't tell you the number of times students of mine with low IQs or the word *retarded* (or the euphemism *borderline*) in their files went on to graduate, go to college, and succeed in the world of work. How dare we assume that these norm-referenced, standardized tests reveal any more than they do! All they demonstrate is how a frightened, usually marginalized child performs on a white, middle-class test, given by a white middle-class psychologist who isn't interested in finding out how children learn by actually trying to work with them.

It is especially in these situations that dynamic assessment should be used. Psychologists should be trained in this technique so they can provide "videos" of young people in the process of learning rather than offering a "snapshot" version of their failure. When the results of a dynamic assessment are then shared with teachers, they will have accurate and immediate information about how to intervene to improve a child's academic performance. By using mediated learning and continuing to use dynamic assessment, teachers and students can form a partnership that will lead to student success that will last for the rest of their lives!

A Case Study in Assessment and Mediated Learning

N. is a handsome immigrant from a war-torn Central American country who lives with his mother and two younger siblings in a densely populated neighborhood that has a very high crime rate and a lot of gang involvement. By the time he got to junior high, he had very poor attendance and low academic skills; he dropped out of school. It was only due to the efforts of a local padre and the suggestion of a friend that he found our school: a small, alternative public high school with 100 students taught by four regular education teachers and myself.

N. was first placed in my room about a year ago because he and his world cultures teacher weren't getting along. Since there weren't many op-

tions, I became his world cultures teacher. I gave him a workbook I thought he might be able to read, but when I checked his work, most of the answers were wrong or incomplete. Furthermore, his handwriting demonstrated an awkward mixture of cursive and print, each letter slanting in a different direction. He seemed quick and bright, always asking questions and fixing our computers, so I asked him why, at the age of sixteen, he was only in the ninth grade and failing most of his classes. As I learned more about him, I began to understand more about some of the challenges facing our youth.

Little by little, N. became part of our Learning Center, the place where I work as a resource specialist, and began asking me if I could give him assignments for his other classes. He was failing all of his academic classes, so his teachers were pleased to see that he was now starting to attend school and do some work. They gladly agreed to let him stay with me. Soon thereafter, he asked me how students got to be in my program.

I asked N. to look at the other students in the Learning Center and to notice that each of them was very smart and also that each of them had some challenge, some area that represented struggle. I said, "You probably notice that I push them and encourage them to struggle, and eventually, as they begin to 'get it' that they really are brilliant, they need me less and less. N., that's how these students got into the program—someone noticed that they were smart but that they weren't doing well in school and suggested that they be tested."

At the request of N.'s mother's, we began the assessment process, thinking that perhaps he had so much difficulty in school because of a "learning disability." By May, the testing process had been completed, and the psychologist and I met to compare notes, as we always do before an individual educational plan (IEP) meeting in order to identify the "disability" and see if the student qualifies for special education. I showed her my results, which were what we expected: low academic scores across the board and evidence of a processing problem.

It came as no surprise to me that N. got 100 percent correct on the tests of auditory and visual memory, but fewer than half right when asked to write down what he remembered. I knew that these results, combined with at least an "average" IQ and low academic scores, should make him a shoo-in for the program. His case was "classic." Unfortunately, the psychologist's results did not bode well for N. She found his score on cognitive tests to be "borderline," a euphemism for retarded, which would mean that there was no discrepancy, not enough difference between the scores on tests of his intelligence/inherent ability and his academic achievement to qualify calling him "learning disabled." Only because I continued to advocate strongly for this student did she review her notes and finally found one subtest that could be used to help us find a discrepancy.

When N.'s IEP was completed, he

and his mother and most of his teachers were pleased to learn both that there was a reason for his behavior, and more importantly, that we could hope for some improvement. As I always do with new students, I started mediating and explained how important it was to come to school on time, eat healthy foods, watch PBS, take home books to read, do homework, floss his teeth, get a physical and a vision test, and so on. He actually did manage to pass world cultures with me and one other nonacademic class, though he failed the rest because of his previous poor attendance.

Our school counselor arranged for him to take some independent study summer school classes so that he would start to accumulate credits and have a fighting chance of graduating before his twenty-fifth birthday. He passed both summer classes and also held down a summer job at a prestigious technology center. In the fall, he concurrently enrolled in a local community college along with another of my resource specialist students. They took a course in American labor history for high school credit in which they both got As. Filled with new confidence, they now see themselves as capable of doing something that nobody in their families has ever done: graduate from high school and go to college.

N. also did another amazing thing. While visiting my house last summer, he asked for a book to read and I lent him a favorite of mine, Eduardo Galeano's *Book of Embraces*. I chose it because it is composed of short paragraphs and because the author is from Uruguay, and thus writes in Spanish, N.'s native language. N liked it so much that he carried it around for months, pondering its depths. Recently, this former nonreader showed me a book of poetry he was reading by Luis Rodríguez, author of *La Vida Loca/Always Running*, in which there was a poem that author had dedicated to Galeano. N. had discovered the poem himself; while reading *La Vida Loca*, he had ordered the author's volume of poetry from another branch of the library (which he found by using the library's computer) and then, when reading the book, noticed this particular poem. Galeano is a very political and sophisticated author who is highly respected by many intellectuals and exiles from South American countries. This young man is on his way to success, no thanks to norm-referenced standardized IQ tests.

A year has passed since N. first began working with me. This June he turned eighteen. He is determined, despite a dearth of credits, to graduate next year. I explained to him that he'd need to pass every single class—which means not only attending them but also doing the work—and that he would need to take some independent study classes and perhaps even more courses at the local community college. He agreed. So far, he's pretty much stayed on track, though he needs a lot of mediating, or reminding. He recently requested to return to regular English class because the students are reading a book by an author he likes. By working after school he was able to buy a car, which has

helped him to improve his attendance. (He lives at the other end of the city, and it takes an hour and a half to get here by bus. His mom used to drive him, but she got laid off . . . the story is all too familiar.)

What Can We Do? We Can Change the Schools

Given the current situation and the increasing reliance on "high-stakes" tests across the nation, what can we do to help our students and ourselves? As Tatanka Iontanka (Sitting Bull) said, "Let's put our heads together and see what we will make for our children." We can change the relationship between teacher and student from an authoritarian, top-down, "I teach, you learn," model to one of mutual collaboration. Each teacher could be, as Australian educator Julia Atkins says, a "guide from the side" rather than a "sage on the stage." Not only will this move the children to the center of our enterprise, but it will help us to avoid the burnout that drives far too many of us away from the joy of working with young people as they struggle to make sense of their world.

I've been lucky to work at a K-12 school where I often got to spend many years with students, either working one-on-one with them in my Learning Center or visiting them in their classes. This situation is ideal and perhaps unusual, but it is becoming less so; there seems to be a trend toward creating more small schools and multi-age classes. But what about regular teachers who work in regular schools—what can they do to make things better for themselves and their students? How can they incorporate mediated learning and dynamic assessment?

As long as teachers understand that it is the children who are supposed to be doing the learning, any classroom can be set up to offer MLE. Teachers can decide to become mediators rather than remain traditional "teachers" who stand in front of the class and "perform." Given the three main components of a classroom—the teacher, the students, and the curriculum—when we use mediated learning, the teachers get to relate to the students and encourage the students to relate to the content.

By slowly transferring the responsibility for learning to their students, teachers will make life easier for themselves. They can use the same books and curricular material they always have, but in a different way. They need to "tweak" assignments so the focus is on the students; curriculum should be used to enhance students' cognitive skills, not as an end in itself. Assignments, projects, and investigations can be devised that respect the increasing cultural diversity of our students and their need for cognitive remediation. Once teachers know the students' cognitive strengths and challenges, they won't need to reinvent the wheel with each new assignment. They don't need to become specialists in curriculum because the children are their subjects. Yes, we need to know our content area, but we need to know our kids more; we need

to know how they learn, what they do when they're stuck, and the like.

Many elementary and middle school teachers work in self-contained classrooms and would find it relatively easy to implement a mediational style with their students, if they don't already do so. MLE can also be introduced in high school classes where teachers and students often only see each other once daily for short periods of time. While it is true that teachers should not take on the teaching of a subject area that is unfamiliar to them, I don't believe that teachers need be subject matter experts in order for their students to learn. A teacher has to know enough to guide student inquiry and ask provocative questions, but subject matter expertise is meaningless unless teachers know how to relate to students, how to mediate. In fact, teachers who demonstrate impressive mastery of their content area are often in danger of making this the focus of the class rather than their students. It is far more important to the intellectual and emotional life of students that they learn something that will be remembered and used for a long time—such as learning that they can learn, or being able to incorporate the cognitive skill of planning into their daily life—than it is to get 100 percent on a test of facts which will soon be forgotten. If we think back to those teachers who made a difference in our lives, we'll find that it wasn't those who only dazzled us with their intellectual prowess; it was those who sparked something in us. The best teachers are the ones who understand that they teach children, not math or science or history.

Using mediated learning will make school more meaningful, cut down on boredom and behavior problems, encourage students to collaborate, and thus give teachers time to work individually with the students in their ZPD. We need to know how these students see themselves as learners, how their families see them, and how family members see each other. This is much more important than knowing what they know or are able to do at the moment because it will inform us of how they will deal with challenges in the future.

Mediated learning will give us time to ask the many questions that teach us about our students: What kinds of books they like to read (adventures? biographies? poems? picture books? encyclopedias?). What they want to learn in mathematics (fractions? money? algebra? long division?). What do they do when they're stuck? Do they give up and stop working? Skip that problem or word? Ask for assistance? Do they ask for help from their peers? From adults? Which ones? From no one?

Which do students care about more, the process or the product? Are they likely to copy from a neighbor or do they enjoy figuring things out on their own? If the objective of the assignment is getting the right answer (rather than understanding what they are doing), then students will often copy from a book or from another student in order to turn in a completed assignment. Little has been learned.

That's the disadvantage of giving one nonnegotiable assignment to an entire class, as is usually suggested in teacher's manuals. The assumption that one size fits all is erroneous.

We also need to know how students see school. Is it a place where they are constantly fearful and humiliated or is it a place to learn, to play, and to make friends? Do they like to be the center of attention or do they try to slide through unnoticed? How important are grades to them and their families? Does anyone care? If so, who? Are there rewards or punishments attached? What is the educational history of family members? What is their class background? How long have they lived here? Where did they come from and why? Who in the family speaks English? Can they read and write in their own language? Did everyone or anyone graduate from high school? Do their parents have unreasonable expectations of their children? Are there problems with literacy, abuse, neglect, or denial in their homes? What kind of support do they have?

The answers to these questions will also help educators learn how best to communicate with the child's family; this kind of knowledge can make a huge difference in the way the young person responds to us and to the whole business of school. Often, when I call a student's home, parents expect to be blamed for how they raised their child. Calling to complain only makes parents feel like failures. A wise teacher can build bridges and relationships so that we become allies with the parents, as we work together to help their children succeed. One of the worst things that can befall a child is to become a pawn in the power struggle between home and school.

When we move curriculum away from prepackaged pablum toward content that is relevant to the lives of our children, students can be challenged and allowed to construct meaning in a way that makes sense to them. If we focus more on the children and do away with grades and standardized tests, the likelihood is that more of our underachieving students would be removed from the "endangered species list," a goal near and dear to the hearts of many educators, parents, and community members.

When we are able to relate to the students and get them to relate to the content, we avoid the tedium and burnout that often burden those who focus on content and paperwork rather than on students and their very real struggles. If you embrace the principles laid out here, young people will learn and you'll get to have a life. The beauty of using mediated learning and a dynamic approach to assessment is that we get to become close to the young people as we support them in their struggles to make meaning out of chaos. What could be a better way to invest in their futures? Teach them all to fish!

Following is a list of Feuerstein's cognitive functions. A discussion of their implementation is beyond the scope of this chapter; those who are interested may contact the author at judih@ousd.k12.ca.us or Feuerstein himself for further information.

Feuerstein's Cognitive Functions

I. Gathering all the information we need (Input)

1. Using our senses: Listening, seeing, smelling, tasting, touching, and feeling to gather clear and complete information (clear perception)
2. Using a system or plan so that we do not skip or miss something important or repeat ourselves (systematic exploration)
3. Giving the thing we gather through our senses and our experience a name so that we can remember it more clearly and talk about it (labeling)
4. Describing things and events in terms of where and when they occur (temporal and spatial references)
5. Deciding on the characteristics of a thing or event that always stays the same even when changes take place (conservation, constancy, and object permanence)
6. Organizing the information we gather by considering more than one thing at a time (using two sources of information)
7. Being precise and accurate when it matters (precision)

II. Using the information we have gathered (Elaboration)

1. Defining what the problem is, what we are being asked to do, and what we must figure out (analyzing disequilibrium)
2. Using only that part of the information we have gathered that is relevant, that is, taking what applies to the problem and ignoring the rest (relevance)
3. Having a good picture in our mind of what we are looking for, or what we must do (interiorization)
4. Making a plan that will include the steps we need to take to reach our goal (planning behavior)
5. Remembering and keeping in mind the various pieces of information we need (broadening our mental field)
6. Looking for the relationship by which separate objects, events, and experiences can be tied together (projecting relationships)
7. Comparing objects and experiences to others to see what is similar and what is different (comparative behavior)
8. Finding the class or set to which the new object or experience belongs (categorization)
9. Thinking about different possibilities and figuring out what would happen if we were to choose one or another (hypothetical thinking)
10. Using logic to prove things and to defend our opinion (logical evidence)

III. Expressing the solution to a problem (Output)

1. Being clear and precise in our language so that there is no question as to what our answer is; putting ourselves into the "shoes" of the listener to be sure that our answer will be understood (overcoming egocentric communication)
2. Thinking things through before we answer instead of immediately trying to answer, making a mistake, and then trying again (overcoming trial and error)

(continues)

Feuerstein's Cognitive Functions *(continued)*

3. Counting to ten (at least) so that we don't say or do something we will be sorry for later (restraining impulsive behavior)
4. Avoiding panic when we can't answer a question for some reason, even though we "know" the answer; leaving the question for a little while and then when returning to it, using a strategy to help us find the answer (overcoming blocking)

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STANDARDS AND MULTICULTURALISM

Bill Bigelow

Proponents of "higher standards" and more testing promise raised expectations for all students and increased "accountability." In practice, their reforms are hostile to good teaching and pose a special threat to multiculturalism.

The state where I teach, Oregon, has joined the national testing craze. This fall, the Oregon Department of Education field-tested its first ever statewide social studies assessments. Many teachers were dismayed to discover that the tests were a multiple-choice maze that lurched about, helter-skelter, seeking answers on World War I, constitutional amendments, global climate, rivers in India, hypothetical population projections, Supreme Court decisions, and economic terminology. Evidently, for the state of Oregon, social studies knowledge is little more than piles of disconnected facts about the world.

If it prevails, Oregon's brand of standardization will undermine a multicultural curriculum—one that describes and attempts to explain the world as it really exists, speaks to the diversity of our society and our students, and aims not only to teach important facts but to develop citizens who can make the world safer and more just. In a sense, the entire effort to create fixed standards violates the very essence of multiculturalism. Multiculturalism is, in the words of Harvard professor Henry Louis Gates Jr. (1995), a "conversation among different voices," a search for perspectives that have been silenced in traditional scholastic narratives. Multiculturalism attempts to uncover "the histories and experiences of people who have been left out of the curriculum," as antiracist educator Enid Lee (1995) emphasizes. Because multiculturalism is an undertaking that requires new scholarship and constant discussion, it is necessarily ongoing. Yet as researcher Harold Berlak points out, "standardization and centralization of curriculum testing is an effort to put

an end to a cacophony of voices on what constitutes truth, knowledge, and learning and what the young should be taught. It insists upon one set of answers." Curriculum standardization is, as Berlak indicates (2000), a way to silence dissident voices, "a way to manufacture consent and cohesion."

Creating official, government-approved social studies standards is bound to be controversial, whether at the national or state level. Thus, according to the Portland *Oregonian*, state education officials "tried to stake a neutral ground" in order to win approval for its version of social reality. "We have tried so hard to go right down the middle between what teachers want, what parents want, and what the [Republican-dominated] Legislature wants," said Dawn Billings, a Department of Education curriculum coordinator. Not surprisingly, as a result of this attempt to be "neutral" and inoffensive, the standards lack a critical sensibility—an emphasis on conflict and diversity of interpretation—and tend toward a conservative, *Father Knows Best* portrait of history and society. For example, one typical tenth-grade benchmark calls for students to "understand how the Constitution can be a vehicle for change and for resolving issues as well as a device for preserving values and principles of society."

Are these the only options? Is this how, say, Frederick Douglass or the Seminole leader Osceola would have seen the Constitution? Shouldn't students also understand how the Constitution can be (and has been) a vehicle for preserving class and race stratification and for maintaining the privileges of dominant social groups? For example, in the 1857 Dred Scott case, the Supreme Court held that a slave could not sue for his freedom because he was property, not a human being. Chief Justice Roger Taney declared that no Black person in the United States had "any rights which the white man is bound to respect." In response, the Abolitionist William Lloyd Garrison called the Constitution an "agreement with Hell" for its support of slavery. But then, in 1896, the Supreme Court ruled in *Plessy v. Ferguson* that segregation—"separate but equal"—did not violate the Fourteenth Amendment. Seating this understanding historically is crucial.

Historical Realities vs. the Limited Perspective of Standardized Tests

Almost 40 percent of the men who wrote the Constitution owned slaves, including George Washington and James Madison. In my U.S. history classes, we look at the adoption of the Constitution from the standpoint of poor white farmers, enslaved African Americans, unemployed workers in urban areas, and other groups. Students create their own Constitution in a mock assembly, and then compare their document to the actual Constitution. They discover, for example, that the Constitution does not include the word "slave," but instead refers to enslaved African Americans euphemistically, as in Article 4, Section

2: "No person held to service or labor in one state, under the laws thereof, escaping into another, shall in consequence of any law or regulation therein, be discharged from such service or labor, but shall be delivered up on claim of the party to whom such service or labor may be due." It's a vicious clause that cannot be made to fit in the "preserving values and principles" rhetoric of the benchmark mentioned above.

It is probably inevitable that school curricula will reflect the contradictions between a society's myths and realities. But while a critical multicultural approach attempts to examine these contradictions, standardization tends to paper them over. For example, here is another benchmark that similarly fails the multicultural test: "Explain how laws are developed and applied to provide order, set limits, protect basic rights, and promote the common good." Whose order, whose basic rights, are protected by laws? Are all social groups included equally in the term "common good"? Between 1862 and 1890, laws in the United States gave 180 million acres (an area the size of Texas and Oklahoma combined) to privately owned railroad companies but gave virtually no land to African Americans freed from slavery in the South. Viewing the Constitution and other U.S. laws through a multicultural lens would add texture and depth to the facile one-sidedness of Oregon's "neutral" standards.

Indeed, the "R" word, "racism," is not mentioned once in any of the seven 1998 eleventh-grade field tests or in the social studies standards adopted in March 1998 by the state board of education. Even if the only yardstick were strict historical accuracy, this would be a bizarre omission: the state was launched as a whites-only territory by the Oregon Donation Act and in racist wars of dispossession waged against indigenous peoples; the first constitution outlawed slavery but also forbade Blacks from living in the state, a prohibition that remained on the books until 1926.

Perhaps state education officials are concerned that introducing the concept of racism to students could call into question the essentially harmonious world of change and continuity over time that underpins the standards project. Whatever the reason for the absence of this concept in the tests, there is no way that students can make sense of the world today without the idea of racism in their conceptual knapsack. If a key goal of multiculturalism is to account for how the past helped shape the present, and if an important part of the present is social inequality, then Oregon's standards and tests earn a failing grade.

Despite the publication of state social studies standards and benchmarks, teachers and parents don't really know what students are expected to learn until they see the tests, which were developed by an out-of-state assessment corporation, MetriTech. As Wade W. Nelson (1998) points out in a delightfully frank article, "The Naked Truth about School Reform in Minnesota" (which might as well have been writ-

ten about Oregon), "The content of the standards is found only in the tests used to assess them. Access to the tests themselves is carefully controlled, making it difficult to get a handle on what these standards are. It seems ironic to me that basic standards—that which every student is expected to know or be able to do—are revealed only in tests accessible only to test makers and administrators. This design avoids much of the debate about what these standards ought to be," and this debate is essential to the ongoing struggle for a multicultural curriculum.

Discrete Facts

It's when you look directly at the tests that their limitations and negative implications for multiculturalism become most clear. Test questions inevitably focus on discrete facts, but they cannot address the deeper, multifaceted meaning of facts. For example, in the field tests Oregon piloted in the fall of 1998, one question asked which constitutional amendment gave women the right to vote. Students could get this question right even if they knew virtually nothing about the long struggle for women's rights. On the other hand, they could know lots about the feminist movement and not recall that it was the Nineteenth and not the Sixteenth, Seventeenth, or Eighteenth Amendment (the other test choices) that gave women the right to vote. Further, because there is no way to predict precisely which facts will be sought on the state tests, teachers will feel pressured to turn courses into a "memory Olympics"; teachers simply will not be able to afford to spend time probing beneath the headlines of history.

Last year, my students at Franklin High School in Portland performed a role play on the 1848 women's rights conference in Seneca Falls, New York, the first formal U.S. gathering to demand greater equality for women. The original assembly was composed largely of middle- to upper-class white women. I wanted my students to appreciate these women's courage and to understand the issues that they addressed but also to consider the limitations imposed by their race, class, and ethnicity. Thus, in our simulated 1848 gathering, my students portrayed women who were not at the original conference—enslaved African Americans, Cherokee women who had been forcibly moved to Oklahoma on the Trail of Tears, Mexican women in the recently conquered territory of New Mexico, and poor, white New England mill workers—as well as the white, middle- and upper-class reformers like Elizabeth Cady Stanton and Lucretia Mott who were in attendance.

In this more socially representative fictional assembly, students learned about the resolutions adopted at the original gathering and the conditions that motivated them, but they also saw firsthand how more privileged white women ignored other important issues that a more diverse convention might have addressed, such as treaty rights of Mexican women, sexual abuse of enslaved African Americans,

and the workplace exploitation of poor white women.

The knowledge that my students acquired from this role play consisted not only of "facts"—although they learned plenty of these. They also exercised their multicultural social imaginations—listening for the voices that are often silenced in the traditional U.S. history narrative and becoming more alert to the importance of issues of race and class. However, this kind of teaching and learning takes time—time that could be ill afforded in the fact-packing pedagogy required by multiple-choice tests. And after all their study, would my students have recalled whether it was the Sixteenth, Seventeenth, Eighteenth, or Nineteenth Amendment that gave women the right to vote? If not, they would have appeared ignorant about the struggle for women's rights.

Likewise, my global studies students spend the better part of a quarter reading, discussing, role-playing, and writing about the manifold consequences of European colonialism. They read excerpts from Okot p'Bitek's poignant book-length poem, *Song of Lawino*, which is about the lingering psychological effects of colonialism in Uganda. They role-play a trial on the colonial roots of the potato famine in Ireland, and they examine how Asian economies were distorted to serve the needs of European ruling classes. But when confronted with Oregon's multiple-choice question that asks which continent was most thoroughly colonized in 1914, would my students answer correctly?

As these examples illustrate, in a multicultural curriculum it's not so much facts as it is perspective that is important in nurturing a fuller understanding of society. And sometimes considering new perspectives requires imagination as much as or more than memory of specific facts. For example, my history students read about the people Columbus encountered in 1492, the Tainos—who themselves left no written records—in excerpts from Columbus's journal and articles like Jose Barreiro's "Tainos: Men of the Good" (1998). I ask students to write a story or diary entry from the point of view of a Taino during the first few days or weeks of their encounter with Spaniards, drawing on information in the readings but then going further. Although necessarily a speculative undertaking, this project invites students to turn the "Columbus discovers America" story on its head and encourages them to appreciate the humanity in the people usually marginalized in tales of "exploration." In response, students have written pieces of startling insight. Sure, a multiple-choice test can assess whether students know that Columbus first sailed in 1492, where he landed, or the name of the people he encountered. But such a test is ill equipped to assess what students truly understand about this encounter.

Not surprisingly, Oregon's "one best answer" approach vastly oversimplifies and misrepresents complex social processes and entirely erases ethnicity and race as categories of analysis. One question on a recent test

reads: "In 1919, over 4.1 million Americans belonged to labor unions. By 1928, that number had dropped to 3.4 million. Which of the following best accounts for that drop?" It seems that the correct answer must be A.: "Wages increased dramatically, so workers didn't need unions."

All the other answers are clearly wrong, but is this answer "correct"? Since when do workers leave unions when they win higher wages? Weren't mechanization and scientific management factors in undermining traditional craft unions? Did the post–World War I red scare, with its systematic attacks on radical unions like the Industrial Workers of the World and deportations of foreign-born labor organizers, affect union membership? And how about the Oregon test's reductive category of "worker"? Shouldn't students be alert to how race, ethnicity, and gender were and are important factors in determining one's workplace experience, including union membership? For example, in 1919, professional strikebreakers, hired by steel corporations, were told to stir up as much bad feeling as they possibly could between the Serbians and the Italians. And more than 30,000 Black workers, excluded from AFL unions, were brought in as strikebreakers. A multicultural awareness is vital if we're to arrive at a satisfactory answer to the Oregon field-test question above. But instead, the state would reward students for choosing a historical sound bite that is as shallow as it is wrong.

This leads me to an aspect of these tests that is especially offensive to teachers: they don't merely assess, they also instruct. The tests represent the authority of the state, implicitly telling students, "Just memorize the facts, kids. That's what social studies is all about—and if teachers do any more than that, they're wasting your time." Multiple-choice tests undermine teachers' efforts to construct a rigorous multicultural curriculum because they delegitimate that curriculum in students' eyes by suggesting that "if it were important it would be on the test."

The Core of Multiculturalism

At its core, multicultural teaching is an ethical, even political, enterprise. Its aim is not just to impart lots of interesting facts, to equip students to be proficient Trivial Pursuit players, but to help make the world a better place. It highlights injustice of all kinds—racial, gender, class, linguistic, ethnic, national, environmental—in order to make explanations and propose solutions. It recognizes our responsibility to fellow human beings and to the earth. It has heart and soul.

Compare that aim with the sterile, fact-collecting orientation of Oregon's standards and assessments. For example, a typical forty-nine-question high school field test piloted in 1998 included seven questions on global climate, two on the location of rivers in India and Africa, and one on hypothetical world population projections

for the year 2050. But not a single question in the test concerned the lives of people around the world or environmental conditions—nothing about increasing poverty, the global AIDS epidemic, the disappearance of the rain forests, rates of unemployment, global warming, and other crises; nor were there any questions on efforts to address these crises. The test bounded aimlessly from one disjointed fact to another. In the most profound sense it was pointless.

Indeed, the test's random amorality may reveal another of its cultural biases. Oregon's standards and assessments make no distinction between knowledge and information. The state's version of social education would appear to have no raison d'être beyond the acquisition of large quantities of data. But for many cultures, the aim of knowledge is not bulk, but wisdom—insight into meaningful aspects about the nature of life.

Peter Kiang (1998/1999) makes a similar point about the Massachusetts teacher test that calls into question the validity of enterprises such as these. He writes that "by constructing a test based on a sequence of isolated, decontextualized questions that have no relationship to each other, the underlying epistemology embedded in the test design has a Western-cultural bias, even if individual questions include or represent 'multicultural' content. Articulating and assessing a knowledge base requires examining not only what one knows, but also how one knows."

Students "know" in different ways, and these differences are often cultural. Oregon nonetheless subjects all students to an abstract, data-heavy assessment device that does not gauge what or how they have learned. As Kiang points out, test makers address multicultural criticism by including individual questions about multicultural content—for example, by highlighting snippets of information about famous people of color like Martin Luther King Jr., Cesar Chavez, and Harriet Tubman. But these "heroes and holidays" additions cannot mask the fundamental hostility to multicultural education shown by standards and assessments like those initiated by Oregon.

Spelling out an alternative to Oregon's culturally biased, superficial "accountability" plan would require another chapter. In brief, I want the state to abandon its effort to turn me into a delivery system of approved social information. I want it to support me and other teachers as we collaborate to create curriculum that deals forthrightly with social problems, that fights racism and social injustice. I want it to support teachers as we construct rigorous performance standards for students that promote deep thinking about the nature of our society. I want it to acknowledge the legitimacy of a multicultural curriculum of critical questions, complexity, multiple perspectives, and social imagination. I want it to admit that wisdom is more than information—that the world can't be chopped up into multiple-choice

questions, and that you can't bubble-in the truth with a number-two pencil.

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A SWORD OVER THEIR HEADS

The Standards Movement as a Disciplinary Device

Ivor Goodson and Martha Foote

It is a common adage in education: school reforms never endure but, like a pendulum, merely sway back and forth, clocking in and out and then back into our schools in a perpetual cycle (Kliebard, 1995). As a result, the wisdom goes, it is pointless for teachers to try to transform their practices because no reform lasts for long, and time and energy are merely wasted in the capricious pursuit of the latest educational fad. Additionally, if teachers simply wait long enough, they can even witness the return of past efforts, repackaged and recycled over and over and over again. Assuming that the fleeting nature of school reform is a problem, we might ask ourselves just how far reform advocates would be willing to go to solve it, to ensure sustainable reforms? To what extent would they compel teachers to comply with a new reform effort? And would these methods of compulsion work?

Proponents of the standards movement, the most pervasive reform effort in education today, seek to end the perceived transient nature of reform undertakings through the use of legislated consequences and rewards. New state standards are tied to mandatory high-stakes state exams, requiring students to attain a certain minimum score on these exams to be allowed to continue to the next grade level or even to receive a high school diploma, regardless of their academic record. The expectation, then, is that teachers, fully aware of these ramifications, will be compelled to alter their teaching practices in order to prepare their students for these exams, thus helping them reach the new high standards. (And to augment the incentives, some states also tie these test scores to teacher bonuses and/or the threat of state seizure of schools.)

In other words, a disciplinary device is put into place to ensure the implementation of the new reform. What is simply assumed, or often left unexamined, however, is whether (1)

particularly high standards are educationally sound and (2) the exams validly measure the attainment of the standards. Both points are hotly disputed by researchers and educators (Heubert & Hauser, 1999; McNeil, 2000; Neill, 1997; Ohanian, 1999). Yet, despite these controversies, many states continue to make high-stakes decisions on the basis of a single standardized exam, while proclaiming teachers accountable for the critical test score that can determine a child's future.

This chapter provides a look into the effects of mandated high-stakes exams on the teachers in one particular high school, the Durant School, located in a small industrial city in the northeast section of the United States. With its distinct learner-centered philosophy and performance-based assessments, the Durant School has long had a reputation as a haven for students seeking alternatives to traditional high school programs. Through the years, it has also been supported by its city school district as a magnet school and permitted to operate with substantial autonomy, shielded from the vagaries of periodic mandates and entrusted to uphold its particular, and successful, mission. (Within the district, the school has higher-than-average attendance and college acceptance rates, and lower-than-average suspension and dropout rates.)

This autonomy, however, came into question in 1996, when the state adopted a series of five high-stakes exams to measure its new high standards. The first exam, on English language arts, was to be introduced in June 1999, followed by math, world history, American history, and science; the passage of all five would be required for graduation. Though the Durant School at first assumed it would be given an exemption from these new mandates, it soon discovered that this reform was different: all schools and all students were to be subjected to the same terms. The state was allowing no exemptions.

The school now found itself in the middle of an excruciating dilemma: teach to the new high-stakes tests or preserve its program; give kids the best chance possible to pass these state exams or risk their ability to graduate by upholding the school's philosophy; compromise the school's integrity or possibly compromise their students' futures. Because the reform was directly tied to a student's eligibility to graduate, the teachers felt they could not ignore it. They were going to have to alter their practices, because in their eyes, their students' lives were at stake. The disciplinary device was working.

The Effects of the High-Stakes State Mathematics Exam

At the beginning of the 1997–1998 school year, the staff at the Durant School instituted a new policy that required all incoming freshmen to take a state-designed mathematics course to help prepare them for the future state math exam. This course was a radical departure from the school's usual approach to curriculum, in which teach-

ers develop their own courses incorporating student interests, their real-life, contextual experiences, and in-depth projects and investigations. However, the staff believed that this departure was inescapable, given that these freshmen would be the first class required to pass the state math exam in order to graduate. They felt that it was necessary to concentrate on teaching specifically to the state math standards and to cover as much content that might be on the exam as possible. In other words, they were compelled to alter their methods not to improve practice but to keep their students out of harm's way.

Our research at the Durant School began in the 1998–1999 school year, the second year of the new math policy. Our interviews and participant observation made it evident that this change was exacting a toll on Rob, the teacher of the freshman math course. At a staff meeting in January 1999, Rob said that his teaching had changed, that he was now "teaching to the test"—specifically, the current state test that would be administered in June at the course's end. (The new high-stakes state math test had not yet been developed; however, the state exam for this particular course was considered its closest model.)

Rob explained that he saw it as his responsibility as an educator to teach this way; to do otherwise would be "educational malfeasance," as it would hinder his students' ability to pass the state exam. He then said: "And I hate it," quickly adding, "I don't like it here [at the school] this year. I'm tense. I'm impatient." In an interview later that spring, Rob elaborated on the change in his teaching practices: "In the past I would teach based on making sure kids understood things. In my class, where the kids are preparing for the [state exam], I realize my dissatisfaction is making sure I get through the curriculum, and I find that very frustrating."

A year later, the change was no easier for Rob. At a staff meeting in January 2000, he explained that because of the pressure to cover all the content necessary to meet the state standards, he could no longer take the time to listen to his students and respond accordingly, as he used to do. "I feel like I'm disconnecting from my students," he announced in distress. A few months later, he again exclaimed in staff meeting, "I don't want to teach to the stupid thing [the state exam], but I can't not."

As evidenced by these statements, Rob, a teacher with over twenty years' experience in the classroom, had indeed altered his teaching. However, this change occurred not in order to improve his practice, but solely to prepare his students for a state exam, a state exam that he sees as a "stupid thing." He does not see merit in covering all the content of the math standards. To the contrary, he finds that the pressure to teach it all has a negative effect on his classroom because his focus has switched from his students to the standards. He can no longer take the time to make sure that students understand. He can no longer take the time to listen and re-

spond to them. Instead, he is compelled to sweep through an imposed curriculum of math standards in order to prepare his students for a single exam, an exam they must pass in order to graduate from high school. Ironically, the high standards reform effort, an effort designed to improve the level of teaching, is, in Rob's experience, having just the opposite effect.

The Effects of the High-Stakes State World History Exam

The next high-stakes state exam to alter the Durant School's program was the world history exam, passage of which was to be required of all students beginning with the class of 2002. In staff meetings throughout the spring of 1999, the staff extensively debated whether to begin teaching this state-designed "high standards" curriculum to which the exam was to be aligned. This curriculum, described by the principal as "a mile wide and an inch deep," is antithetical to the school's philosophy of in-depth learning. As a result, most staff was vehemently opposed to its implementation, preferring to stall until the state had reached a decision on the school's formal request for a variance from the exams (see Goodson and Foote, "Testing Times"). A few, however, felt that the risk to students' futures was too great to count on a favorable decision and to delay teaching to the test. This argument became even stronger after the summer passed and the state had still not issued a decision.

In a staff meeting in early September 1999, as the new school year was about to begin, the two history teachers, Nathaniel and Eve, announced that their world history classes this year would be geared specifically to the upcoming high-stakes state exam. They explained to their sympathetic colleagues that they needed to make this change because no decision on a variance had yet been made by the state. Therefore, the freshmen and sophomores, for whom these classes would be required, would have to pass the state exam in world history in order to graduate from high school.

Nathaniel, a teacher with over twenty years' experience, further explained that he and Eve were making this change because "the state is breathing down our necks." They had decided that what was best for the kids was giving them the best chance to pass, adding, "We're stuck." He later said that he was torn between how he wants to teach and how he must teach to get kids to pass the exam.

Eve stated that it would be irresponsible *not* to prepare the kids now because not only would the exam cover two years' worth of content but the kids would also have other high-stakes exams to prepare for and pass in their junior and senior years. She said that they could not wait. As a result of this decision, there was no longer room in the schedule for such previously popular courses as African-American history; the history teachers would be tied up teaching the state course for the state exam.

In an interview later that autumn, Nathaniel spoke about the changes in

his world history course now that he was gearing it to the state exam. He said that instead of employing cooperative learning and in-depth, critical analysis of materials, his preferred methods of teaching, he was now using the overhead and giving class notes. He added that when students had asked in consternation whether he was going to teach like this all year, he had responded affirmatively, explaining that in order for them to pass the state exam, they were going to have to learn a lot of content. He said that he had told them, "Kids, I'm not any happier than you are about this, but I could not live with myself knowing that I did not teach you in a way that would prepare you to jump through that hoop. I couldn't do it personally and professionally."

He further explained in the interview that though he tried to insert some things that would "make history come alive" for his students, he only had limited time for it as there was so much content to cover. He then spoke emotionally of his decision to teach to the test:

> I cannot put my head in the sand and ignore the political realities that are looming over the horizon. I've got to deal with it. I just cannot put up a stone wall and deny what's happening. So that's what pushed me to (pause), well, I read the handwriting on the wall and I cannot let these kids go and take the test, which I think they are going to take. You have to prepare them to take the test. What are you going to do? It's a hell of a catch-22. It's the worst one I've ever faced since having to go into the army. Really, I compare that to when I was like 19–20 years old and got my draft notice [to serve in the Vietnam War]. . . . So I look at this and this is just (pause); you know you can't play with people's lives. I can play with my own, but I can't play with young people's lives. There's too much at stake, way, way too much.

Again, the disciplinary device of a high-stakes exam proved successful in compelling Nathaniel to teach to the new standards. He went from providing experiences designed to foster critical thinking and cooperative learning to using an overhead and giving his students the myriad content standards to copy, because he knew these standards would be covered by the high-stakes test. It was a disciplinary device that he could not ignore because, in his words, he couldn't "play with young people's lives." Like Rob, Nathaniel also believes that his classroom has suffered from the changes he has been forced to make in order to comply with the state mandates. Yet he feels that he has no choice because it is not his life that is at stake; it is his students' lives. And he bears too much responsibility for their futures.

From Trust to Compliance

In addition to the examples provided above of specific classes and teachers affected by the high-stakes tests, a range of more general, yet crucial, issues about the standards reform were

frequently raised by Durant School staff throughout our two years of research. One recurrent concern was that trust in teachers and schools had been replaced by enforcement and compliance as a result of the standards initiatives.

In a conversation with the principal, Ed, in December 1998, we discussed an incident in 1986 when the Durant School successfully sought an exemption from a city school district testing mandate. Ed said that back then, the district basically trusted the school to do its own thing, but that times had changed. He said that now it is the state, not the city school district, that makes the mandates, and everyone must comply. He compared it to the military: the state makes the mandates, the city has to comply, and the city has to make all its schools comply as well.

A year later, a teacher named Alan echoed this sentiment during a staff meeting discussion about compliance with the state mandates and the consequent erosion of trust: "The kids have a sword over their heads that we [staff] put there. We have a sword over our heads that Ed puts there. He has a sword over his head that Central Office puts there. And it goes up and up." Alan explained that state methods of enforced compliance interfere with the development of trusting relationships among students, teachers, and administrators. For the staff at the Durant School, these methods threaten to transform the school into an authoritarian institution where the threat of dire consequences compels one to conform. It is also a wrenching change at a school that has thrived on a philosophy in which both teachers and students have been trusted and respected to pursue their interests responsibly and assiduously.

In fact, the city school district overtly wielded this "sword" in October 1999, when it initiated a policy of sending personnel, unannounced, to schools and classrooms to determine whether (1) teachers were indeed teaching to the standards and (2) a copy of the state learning standards was posted in every classroom as per district mandate. While Ed, in announcing this new policy at staff meeting, saw these visits as a possible opportunity to educate district personnel about the Durant School's philosophy of learning and assessment, the school's guidance counselor, Karl, disagreed. He doubted whether these visitors would care about anything beyond whether the school "is stepping in line." After much discussion, Ed left it to each teacher to decide how to engage with these visitors, as long as they showed how their lesson was aligned with the standards. Meanwhile, he passed out copies of the standards for each teacher to post in their classrooms. Compliance with district policy was upheld.

A few weeks later, the state's commissioner of education visited the district and held a community forum on the new standards in a neighboring school. He told the teachers in the audience that "all eyes are on you" as witness to whether the students are meeting the standards and passing the

state exams. He added, "I am watching you, too." Trust to teach appropriately and professionally did not enter the equation. For this commissioner, teachers would teach to the standards because they would know they were being monitored and scrutinized. The high-stakes exams, then, became the high-profile tool through which the surveillance could occur and compliance could be achieved.

Concluding Remarks

At the Durant School, the use of high-stakes exams did ensure compliance with the state's new "high standards." Even though the staff was both confident that their existing program was educationally sound (and district statistics on the school supported this sentiment) and also critical of the content standards and exams, they were compelled to make changes. Why? Because the staff felt too professionally and personally responsible to their students to allow them to take high-stakes exams unprepared. These teachers saw their students on a chopping block, placed there by the state. As the immediate keepers of the standards, then, they saw it as their responsibility to lead their students out of danger. They had to teach to the high-stakes tests. Proponents of the standards movement call this "accountability." In other circumstances, it is called extortion.

In April 2000, during a staff meeting discussion on the tremendous difficulties many Durant School students face in their home and personal lives, a teacher, Doug, pointed out the dilemma of trying to reach out to his students when feeling pressured to teach to the standards. He wondered out loud, "Do I put my kids in danger when I say that we don't have time to discuss their issues?" He explained the dilemma: if he is not concentrating on the state standards, then he is not preparing the kids to pass the exams; however, if he is teaching to the standards, then he is reducing the students' school experience to something trivial for them. He concluded, "We're caught between the devil and the deep blue sea." The staff agreed.

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THE SPECTACLE OF STANDARDS AND SUMMITS

E. Wayne Ross

In 1989, President George Bush called the nation's governors together for the first National Education Summit.[1] They set goals and tried to develop ways to measure progress, but they were stymied by resistance to federal interference in local school decisions. Seven years later, governors and forty-four top corporate leaders met at IBM's conference center in Palisades, New York, and set up an approach for states to accomplish what had eluded participants in the first summit, namely, defining what should be taught in local schools and enforcing curriculum standardization through state-mandated tests—what is now called the "standards movement."

Like the summit itself, the report on standards given to summit participants by Public Agenda, a public opinion research organization, is a quintessential example of how neoliberal democracy works to thwart meaningful participation of the many by allowing the few to speak for all. Standards-based educational reform exemplifies how elites manufacture crises (e.g., the widespread failure of public education[2]) and consent (e.g., "everyone" agrees that the way to save public education is through standardized schools driven by high-stakes tests).

The objective appearance of standards-based reforms, which aim to reform schools by focusing on test scores, is designed to conceal (partially) the fact that these reforms are the result of deepening economic inequality and racial segregation, which are typically coupled with authoritarianism. For example, in Chicago, public schools have been militarized—six schools have been turned into military academies and over 7,000 students in forty-one schools are in Junior ROTC—and teachers have been given scripted lessons, keyed to tests, to guide their instruction. In a dramatic shift away from democracy, the Detroit school board was disbanded in 1998 by the Democratic mayor and

Republican governor, who then appointed a new board whose members represent corporate interests and of whom only one is a city resident (Gibson, 1999).

The primary justification for the seizure of schools and the imposition of standardized curriculum has been poor test scores and high dropout rates. But standardized test scores are less a reflection of ability or achievement than measures of parental income. For example, recent data show that someone taking the SAT can expect to score an extra thirty test points for every $10,000 in his parents' yearly income (Sacks, 2000). Dropout rates are directly related to poverty, and none of the powers demanding school seizures or standardization are prepared to address the question of poverty.

When IBM CEO Louis Gerstner Jr. convened the third National Education Summit in September 1999, media attention focused on the laudatory monologue provided by an alliance of conservative and liberal politicians, corporate elites, chief school officers, and teacher union leaders about the "gains" made since the last summit, three years earlier. Specifically, forty-five states had adopted standards in social studies, English, math, and science, up from fourteen in 1996. Forty-eight states had instituted mandated standardized tests, up from thirty-nine in 1996. Over 10,000 employers now used student school records to identify behavior and work habits as part of their hiring process, up from the 3,000 business that previously used transcripts. The media, and the participants themselves, heaped praise on the spectacular achievements of the past three years.

Public Agenda reported to summit participants that the movement to raise standards in public schools strikes a responsive chord with the public,[3] but it also warned that the issue of standards is not immune to the "normal controversies and complications that accompany any large-scale policy change" (Johnson, 1999, p. 1).

What is noteworthy about this report, *Standards and Accountability: Where the Public Stands*, is its straightforward description of the agenda that must be pursued if the economic and political elites are to maintain legitimacy and respond to opposition as they define the curriculum and pedagogy of public schools. The number-one task, according to Public Agenda, is effective propaganda. As they put it: "Experts and decision-makers often must concentrate on the labyrinth of details needed to make a policy work in real life. But to sustain change . . . that touches people's families and daily lives, leaders need to take time periodically to restate the basic rationale, to remind people of the beliefs and values that underlie reform. When the going gets a bit rough, people need to be reminded of why we're here" (Johnson, 1999, p. 2). It is important to note that the "we" in this case refers to the summiteers and other opinion makers like Public Agenda and *Education Week*, the trade weekly that has been an ardent proponent of the standards movement and

that collaborated with Public Agenda on its survey of public opinion regarding the standards movement.

While the author of *Standards and Accountability* make much of the "established and remarkably stable" support for standards-based educational reform in the United States, they are mindful of "pitfalls that could derail or unsettle support." First, the report warns that standards advocates should expect unhappiness when the rubber hits the road and students are retained in grade or denied diplomas.

Pointing to the dramatic shift in public support for managed health care as people experienced "drive-by surgery" and denial of treatment options, Public Agenda warns standards advocates that success in delivering test score increases must be accompanied by the "appearance of fairness" in managing the reform effort. Now that thousands of students are being forced to repeat a grade or are denied a diploma, it is likely that the mere appearance of fairness will not be enough to stave off opposition to standards and the high-stakes tests that accompany them. Parents and teachers are the two groups most likely to derail the standards train.

However, in a somewhat quixotic claim, the Public Agenda report declares that parents are insignificant players in the standards movement. Public Agenda says that while parents generally support standards-based reform, "most are not especially well-informed or vigilant consumers, even concerning their own child's progress" (Johnson, 1999, p. 5). This claim conflicts with reports that the once-sporadic resistance to standards-based educational reforms is blossoming into a broader rebellion involving parents (e.g., Ohanian, 1999; Ross, 1999; Whitmire, 1999). For example, as a result of parent protests, Los Angeles school officials recently backed off of a plan to end "social promotions," and in Massachusetts, officials were forced to redefine passing scores on state tests that otherwise would have prevented as many as 83 percent of Latino and 80 percent of African American students from receiving high school diplomas.

Perhaps the best example of parental "pushback" is in Virginia, where Parents Across Virginia United to Reform Standards of Learning is a rapidly growing group working to dump the state's curriculum standards and testing program. Virginia's unrealistically broad standards of learning (SOL) includes this standard for third graders: "Students will explain the term *civilization* and describe the ancient civilizations of Greece and Rome in terms of geographic features, government, agriculture, music, art, religion, sports and the roles of men, women and children." Starting in 2004, Virginia high school students must take a series of eleven exams, based on the SOL, in order to graduate. In 2007, 70 percent of a school's students must pass SOL tests for it to remain accredited—last year only 2.2 percent of Virginia schools met this standard.

Beyond the unrealistic nature of the SOL and the deleterious effects of

high-stakes testing on teaching and learning, a primary concern of the Virginia parents group is that the state's reform efforts have not included local input on what students should be learning. They argue that many test items are more like Trivial Pursuit factoids than essentials and that Virginia's standards reflect the views of only a few members of the state board of education rather than a consensus of broad-based groups of educators and parents.

The absurdity of many standards and test questions is not limited to Virginia. In Chicago, George Schmidt —a thirty-year veteran of Chicago Public School classrooms and publisher of a monthly newspaper written by and for people who work in Chicago's public schools—is being sued for $1 million by the Chicago Board of Education for publishing questions from the Chicago Academic Standards Examinations (CASE) after students took the tests. This item is from a social studies CASE:

> 23. All of the following activities are part of a typical African woman's life in rural areas *except*:
>
> A. preparing food
> B. taking care of children
> C. helping her husband grow cash crops
> D. selling crops at the market.

While Public Agenda—and perhaps the corporate leadership of the standards movement—considers parents to be little or no threat to standards-based educational reform, politicians appear more sensitive to the growing antistandards, antitesting pressures. Test boycotts and other forms of resistance have moved the governors of Michigan and California to offer students money ("scholarships" of up to $2,500) for taking or scoring well on state-mandated tests (Aratani, 2000). Indiana politicians are bracing for an enormous backlash against the state graduation test, which threatens to keep 50 percent of the seniors in urban districts and a quarter of seniors state-wide from graduating this year.

Resistance from teachers presents the most significant potential pitfall to the standards movement, according to the Public Agenda report. Many school administrators and the top leaders of the teacher unions are solidly on the standards bandwagon, but the support of rank-and-file teachers is also crucial if the standards movement is to succeed, as is rightly acknowledged in the report:

> If teachers believe that standards policies are important and well thought out, they can sustain and nourish parental support. If teachers are convinced that standards policies are unfair or destructive, they can undercut parental support with extraordinary speed. . . . District directives are often ridiculed or resented, and experienced teachers have already been through waves of reform, which in their minds produced very little of value. Public Agenda's research strongly suggests that bringing the nation's teacher corps

> firmly inside the movement to raise standards could be the most pivotal challenge of all. (Johnson, 1999, p. 4)

Following the lead of Public Agenda, the top agenda item at the summit was teaching—in particular, devising ways in which teacher preparation and pay can be tied directly to the standardized curriculum and tests developed by states. For their part, education leaders promised to align college admissions requirements with state curriculum standards. The standards, which threaten academic freedom in K-12 classrooms, are now being applied to university teacher preparation programs as advocates work to create a rigid system in which the education of students *and* teachers is defined by interests accountable only to corporate America. As a result, the standards movement threatens the ability of parents, teachers, students, and other members of local communities to define their own interests and desires and use them as platforms for deciding the content and pedagogy used in public schools.

The idea of paying teachers based on their students' test scores, which was endorsed at the summit, is backed by Bob Chase and Sandra Feldman, the presidents of the National Education Association and the American Federation of Teachers (AFT), respectively. In the past six months, unionized teachers in cities across the country—Denver, St. Paul, Cincinnati, and Seattle, to name a few—have agreed to some sort of pay-for-performance plan. Governor Gray Davis of California recently approved $50 million for one-time bonuses of up to $25,000 for teachers whose students show substantial test score improvement. Davis's plan, like other teacher pay-for-performance plans, attacks the notion that teachers should be engaged in deciding what's best for their students by shifting the focus from students' welfare to teachers' pocketbooks.

Paying teachers for student performance in not a new idea. History shows that most of the gains from such programs are destructive illusions that narrow the curriculum offered to students and encourage teachers and administrators to cheat—as we have recently seen with the high-stakes exams used in New York City public schools. Wilms and Chapleau (1999) describe pay-for-results schemes implemented in England, Canada, and the United States in the last two centuries and draw the following conclusions:

> Few reforms that are forced on the schools (especially destructive ones like pay-for-results) will ever penetrate the classroom and positively change the teaching and learning processes. Teachers are every bit as adept at deflecting or sabotaging reforms of this kind today as they were at deceiving English school inspectors in the 1800s. Politically driven reforms like pay-for-performance are nothing more than reflections of public frustrations. And rather than helping to solve the root

> causes of failure, they paralyze us and deflect public attention from reforming the educational systems at their core. (p. 34)

Obviously, participants at the National Education Summit understand the centripetal position of teachers in education reform. If real reform is to be achieved, however, the root causes of problems faced by public schools must be addressed—social and economic inequalities. Standardized curriculum and high-stakes tests not only divert attention away from these inequalities but are used to justify and sustain them.

In the end, the summit is yet another portrait of power relations in neoliberal democracy. It represents our hierarchical society, in which citizens are made to be passive spectators, disconnected from one another and alienated from their own desires, learning, and work. The spectacle of standards, test scores, and summits obscures the role of parents, teachers, and students in decision making. The spectacle expresses what society can do, but in this expression what is permitted with regard to teaching and learning limits what is possible. Ultimately, the achievement of standards-based educational reform is the preservation of the unequal conditions of American existence.

Even as summiteers celebrate their successes, they face growing resistance to the mechanisms designed to allow a handful of private interests to control as much as possible of public education and social life. In 1932, George S. Counts, in his speech "Dare the School Build a New Social Order?" made clear the central role of teachers not only in educational reform but in social change. Counts explicitly challenged teachers to develop a democratic, socialist society. While the summit is in the limelight, many teachers are working with parents, students, and other committed citizens to build a democratic society, one that challenges the impulses of greed, individualism, and intolerance that are embodied in much of what passes as educational reform today.

The bottom line is that the more members of local communities are allowed to decide on school curriculum and teaching methods, the more equitable and democratic the society will be. Standardized curriculum and high-stakes tests are attacks on democratic education. Organized parents, educators, students, and community people have an honest stake in democratic education and are responding to these attacks in good faith.

Notes

1. A different version of this article first appeared in March 2000 in *Z Magazine*, *12*(3), 45–48.

2. For an examination of the mythical crisis of U.S. schools see Berliner & Biddle (1995) and Rothstein (1998).

3. Public Agenda reports that results from their recent Reality Check survey show that overwhelming majorities of parents (83 percent), teachers (79 percent), employers (93 percent), and college

professors (90 percent) say having guidelines for what and how students are expected to learn helps improve academic performance.

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PHILOSOPHICAL AND ANALYTICAL STANDARDS

Mordechai Gordon

What will happen if teachers become sufficiently courageous and emancipated to insist that education means the creation of a discriminating mind, a mind that prefers not to dupe itself or to be the dupe of others? Clearly they will have to cultivate the habit of suspended judgment; of skepticism; of desire for evidence; of appeal to observation rather than sentiment, discussion rather than bias, inquiry rather than conventional idealizations. When this happens, schools will be the dangerous outposts of a humane civilization. But they will also be supremely interesting places. For education and politics will then be one and the same thing because politics will have to be in fact what it now pretends to be, the intelligent management of social affairs (Dewey, 1986).

The "creation of a discriminating mind" is no less crucial today in America's schools than it was in 1922 when John Dewey first published the essay "Education as Politics" in the *New Republic*. Dewey was talking about the development of a "philosophical mindset," a mindset that embraces thinking as a continuous process of doubting, questioning, critically examining, and revising our beliefs. This chapter explores some of the fundamental facilities associated with a philosophical mindset and argues that schools in general and universities in particular should be committed to fostering it. Developing a philosophical mindset has to do with learning various philosophical skills such as interpreting texts, analyzing issues from multiple perspectives, deductive and inductive reasoning, connecting theory to practice, synthesizing and making distinctions, and providing a convincing argument to a problem. My contention is that given the complex nature of today's knowledge production systems, the decline of the influence of traditional moral and religious values, and the sparse and often shallow political debate go-

ing on in America, there is an urgent need to cultivate these philosophical skills. Let me begin by explicating the philosophical skills I have in mind.

Interpretation

Students in my graduate secondary education classroom management class constantly bring up instances of student misbehavior in their classrooms, ranging from coming late to class and not doing homework to threatening the teacher and physical violence. The focus is typically on the overt behavior of their students and the response is often frustration; my students say things like, "I cannot get my students to behave like normal students," or "some students don't belong in this school." It is as though many of my students suffer from the same problem that Michel Foucault attributes to many, if not most, historians who attempt to write history while knowingly obscuring their own point of view: "The final trait of effective history is its affirmation of knowledge as perspective. Historians take unusual pains to erase the elements in their work which reveal their grounding in a particular time and place, their preferences in a controversy—the unavoidable obstacles of their passions" (Foucault, 1984, p. 90).

Like the historians Foucault is talking about, my students often do not acknowledge their own perspectives, preferences, and passions concerning either the so-called problem students in their classes or teaching and learning in general. They unconsciously assume that their students' behavior is self-evident, that it does not need to be interpreted or explained, that it has no *meaning*. Yet, Foucault's and Nietzsche's emphasis on "knowledge as perspective" suggests that we are always viewing and analyzing historical events or students' behavior from a particular perspective that is grounded in a particular time and place.

The perspectival nature of knowledge further implies, not that historical events like wars are mere battles between two or more nations, but rather that wars are meaningful and make sense if we view them from particular vantage points and social historical contexts. Likewise, a student's violent behavior in school is not just an act of violence but is deeply significant if we analyze this act from the student's own perspective and context. Only by considering this perspective and trying to interpret the social, economic, and historical context of the student and the school do we have a chance of really comprehending the causes and significance of the violent behavior. The ontological assumption that I am making here is that human beings do not simply behave or respond to stimuli but are constantly engaged in the act of meaning making and making sense of the world.

Typically, there is more than one way to interpret and make sense of human phenomena such as students' violent behavior in the schools. The strict behaviorist, who focuses on our overt actions and attitudes, will attribute such behavior to the "lack of conformity to the school's norms" or to

the fact that "some students have no respect for adult authority." A cognitive psychologist might account for the same actions by investigating whether or not the rules of appropriate conduct are fully understood and accepted by the violent students. Finally, a critical pedagogue would insist that the only way to make sense of this behavior is to view it in the context of the school culture as well as the broader social, political, economic, and moral culture of the community and the country as a whole. From this perspective, high school students' violent behavior in a disadvantaged urban neighborhood might be interpreted as acts of resistance to the inhumane and oppressive conditions of their school and community. The point that I wish to emphasize here is that since human phenomena and culture are highly complex and often ambiguous, it is crucial that students become skilled at interpretation as a way of clarifying and giving meaning to everything from poetry to violent behavior.

Moreover, interpreting a text, whether a book, a movie, or a student's behavior, will often lead us to a new way of viewing it and hence to a more complex and deeper understanding. However, some perspectives give us a dimmer or narrower rather than a clearer or more complex picture of that which we are trying to understand. For example, when reading and discussing texts in my classes, my students will frequently attempt to interpret them literally. Literal interpretations lead many of my students to conclude that the ideas they are learning (from Socrates to bell hooks) are impractical and therefore insignificant for them. Yet, when these same students are encouraged to consider the symbolic rather than the literal meaning of these theories, they often arrive at a new understanding of the ideas and are able to see how they can be applied in their own lives and work.

Such symbolic or metaphorical interpretations give us insight into texts that, like dreams, rarely make sense if we consider them literally. When I have shown the movie *Harold and Maude* in my class and asked students to talk about the approach to education that Maude represents, many of them have responded by referring to Maude as simply "a crazy old woman with no respect for the law." This literal perspective prevents these students from viewing Maude as a symbol of free spirit and active resistance to conformity to established norms. Once my students take this symbolic perspective, they are able to recognize that Maude's message has deep significance for them in the context of a system of education in which conformity to established norms, methods, and subject matter is the rule. In this way students not only gain a deeper understanding of the movie but are able to make connections between some of its insights and their own daily struggles in the public schools.

Analyzing Issues from Multiple Perspectives

When discussing with my college education students Paulo Freire's distinc-

tion between true and false generosity (Freire, 1993, p. 42), I often give the following example:

> *Let's pretend that when you leave Brooklyn College this evening and take the subway you encounter a beggar asking for some change so he can buy a hot meal. You reach into your pocket and pull out a five dollar bill and give it to the beggar with the intent of helping this hungry person get some food. Is this true or false generosity?*

Many students respond to this question by saying that this is a case of true generosity since the giver has a worthy intent of helping this hungry person buy a hot meal. Only upon further probing do such students realize that the issue is not so simple since neither the good intentions nor the five dollars in question will help this beggar get out of his dehumanized condition. Other students argue that this is a case of false generosity for precisely this reason, but they cannot identify the criteria by which one may distinguish true from false generosity.

This example is not intended as a critique of my students, but rather to illustrate the point that many, if not most, of the issues that we deal with in the curriculum, whether social, political, economic, aesthetic, or moral, are highly complex and cannot be simply evaluated from one vantage point. In this example, there are at least two perspectives that need to be taken into account. The first is what I call an "ethics of intent," the second, an "ethics of consequences." An "ethics of intent," informed by various historical religious traditions such as Christianity, considers the intent of the doer as the most important factor in evaluating moral dilemmas. When assessing the moral worth of a particular action, such an approach tries to determine whether the deed was based on good/pure motives or evil/selfish motives. The problem with this approach is that one can never know for sure the motives and intentions of the human heart, as Immanuel Kant pointed out.

Moreover, even if the motives are evident, the actions of human beings, who can never be completely conditioned or controlled, always involve surprises and unexpected consequences. Think, for example, of the recent conflict in Kosovo and the NATO bombing of the Serb forces following their attempt to forcefully remove the ethnic Albanians from Kosovo. From the perspective of an "ethics of intent," one could probably argue that the NATO bombings were justified since they were aimed at stopping the removal of the Albanians from their home and the practices of ethnic cleansing. However, if one examines the NATO bombings in light of the consequences that they had for the ethnic Albanians, it becomes clear that these air raids greatly exacerbated the plight of the Albanians by speeding up their deportation from Kosovo, destroying their homes and infrastructure, and in some cases actually killing innocent civilians. This latter perspective is based on an "ethics of consequences," an ethics that considers the

results of our actions as the primary criteria for evaluating their worth, regardless of the motives that may be driving these actions.

My intention is not to suggest that an "ethics of consequences" and an "ethics of intent" are mutually exclusive. Indeed, when our actions have positive results, the intention is usually good, too. Yet, these are two very different moral perspectives based on different assumptions, and they will often lead us to conflicting analyses and conclusions on the same issue. Further, as Freire suggests, an ethics of consequences is a much stronger position than an ethics of intent because it considers a moral dilemma from the position of the disadvantaged groups in society, a position that is often ignored or marginalized. Such a perspective is strong, according to Freire, because it is based on the values of social justice, critical citizenship, and democracy.

Yet, why is it so important that students in general and future teachers in particular become skilled at analyzing issues from multiple perspectives? To begin with, we are living in the midst of a technological revolution together with an explosion of information and new cultural forms that have a profound impact on the contemporary education curriculum. Here I am using the word "curriculum" in the broad sense to signify not only what the state board of education requires students to know but the various forms of cultural pedagogies and knowledge production systems that we are bombarded with.

As Douglas Kellner notes: "[C]ontemporary culture is marked by a proliferation of cultural machines that generate a panoply of print, sound, environmental, and diverse aesthetic artifacts within which we wander, trying to make our way through this forest of symbols. This requires the development of a new multimedia literacy that is able to scan, interact with, traverse, and organize new multimedia educational environments" (Kellner, 1998, p. 13). Kellner argues correctly that the new multimedia literacy that students require in order to interact and make sense of the myriad forms of cultural artifacts involves training in philosophy, ethics, and the humanities. Specifically, this means that our education system will have to "empower individuals so they can analyze and criticize the emerging technoculture, as well as participate in its cultural forums and sites" (Kellner, 1998, p. 13).

Moreover, the information, ideas, and values that students are exposed to in and out of school are typically complex rather than simple. For instance, every fall, millions of children in elementary schools across the United States are introduced to the subject and concept of Thanksgiving. Yet, as James Loewen (1996) has illustrated, there are numerous suppressions, distortions, and outright lies surrounding the history and meaning of this celebration. One of the main reasons for this sad truth is that the story of Thanksgiving has always been told from the perspective of the European colonists and therefore reflects only

their ideological interests. The perspective of the Native Americans has been either marginalized or completely suppressed by most history textbooks and teachers.

This narrow and Eurocentric representation of Thanksgiving not only robs our students of a much more complex and less biased understanding of this important historical event but also misses a good chance to develop their critical thinking skills. The alternative to this feel-good history, according to Loewen, is not a feel-bad history but rather a more inclusive history that would allow students to "learn both the 'good' and the 'bad' sides of the Pilgrim tale. Conflict would then become part of the story, and students might discover that the knowledge they gain has implications for their lives today. Correctly taught, the issue of the era of the first Thanksgiving could help Americans grow more thoughtful and more tolerant, rather than more ethnocentric" (p. 97).

Finally, analyzing issues from multiple perspectives is more crucial today than ever given the fact that the United States is becoming a more diverse society, with many different ethnic groups who embody different cultures, values, and interests. And as John Dewey and many other progressive educators recognized, democracy is much more than a form of government; it is a society that encourages open interaction and dialogue among people from diverse races, genders, classes, and religions. Such interaction and dialogue is possible, I would argue, only if individuals and communities in this society acknowledge and respect the viewpoints of people who represent different backgrounds, values, and lifestyles. This means, for example, that heterosexuals in the United States need to be open to hearing the opinions and concerns of homosexuals on issues like same-sex marriage, even when the two groups disagree about the causes or virtues of a particular sexual orientation. In this view, democracy is at stake when only one perspective and ideology is valued above all others while other opinions and values are marginalized or censored. A flourishing democracy is one in which the citizens are able to make informed decisions and take action based on a comprehensive analysis of the issues at stake from multiple perspectives.

Deductive and Inductive Reasoning

In the opening passage of Plato's dialogue *Meno*, Menon asks Socrates the following questions: "Can virtue be taught? Or if not, does it come by practice? Or does it come neither by practice nor by teaching, but do people get it by nature, or in some other way?" Socrates responds by insisting that in order to answer these questions, one has to initially address a more fundamental question: "What is virtue?" His point is that if we want to discuss the qualities of something, we need first to arrive at a general definition of the thing we are talking about.

One way of interpreting this initial exchange between Socrates and Menon is to view it as a conflict or tension between two different ways of doing research: deductive versus inductive reasoning. By deductive reasoning, I mean a method of logical analysis that proceeds from general definitions of concepts or subjects to particular instances or examples that are subsumed under these definitions. Inductive reasoning, on the other hand, begins with a study of particular examples or phenomena and attempts to extrapolate from the results of this study a more general theory. In this section I will examine the import of both of these methods of doing research.

Deductive Reasoning

Socrates, who represents the deductive method of reasoning in the above example, makes one very important point: that in order to have a meaningful discussion about a complex and abstract notion like virtue, the participants of the debate need to clearly define the meaning of the terms they are using. Indeed, discussions often go nowhere and communication breaks down because each side is using the same words to signify very different things. Thus, defining the terms one is using is essential for the success of a debate insofar as it limits the possibility of confusions and keeps the debate focused. In my classroom discussions, I find myself constantly asking students to clarify the meaning of the terms they are using. Such probing is important not only in order to avoid confusions but also because it forces students to stop and think about the meaning of the words they are using. Educationally speaking, this is a very important exercise in that it helps students clarify their ideas and gives them the chance to practice thinking coherently and critically.

In addition to clearly defining the terms one is using, deductive reasoning involves logical argumentation, that is, the ability to formulate a cogent and consistent argument with no internal contradictions. One of the most common fallacies involved with this aspect of deductive reasoning is the failure to distinguish between generalizations and universalizations. Specifically, this latter means that one is making a universal claim that, at best, has only general validity by ignoring all the exceptions to this claim. For example, I often hear students making statements like "If one tries hard enough in the United States, one always succeeds in the end." Aside from the ambiguity of the words "enough" and "succeed," this argument assumes that *everybody* who tries hard will eventually succeed, regardless of the overwhelming obstacles and hardships that some people face.

The main problem with this argument is that it ignores all those people in our society (including minorities, the poor, and the mentally challenged) who do not enjoy the same opportunities, rights, and privileges as the white middle and upper classes. Such universal statements typically lead one to artificially simplify a very complex and difficult issue such as the plight of the

poor in the United States. Universal statements are also problematic in that they tend to undermine some of the basic tenets of democracy like diversity and protecting the rights of minorities and the disenfranchised. If everybody who tries hard enough eventually succeeds, then there is no reason for the government to intervene and help those people who are less fortunate and have historically been oppressed.

Inductive Reasoning

Unlike deductive reasoning, which proceeds from the general to the particular, inductive reasoning moves from particular phenomena to a general explanation of their nature and structure. Most scientific research, whether in the natural or the social sciences, employs some version of inductive reasoning by investigating a particular phenomenon (like the structure of atoms or teenage violence) in the hopes that this investigation will lead to the development of a more general theory. However, it is crucial to keep in mind that a theory is only one way of making sense of some aspect of reality, and as such it is never infallible or all-encompassing. Indeed, it is often the case that at any one time there are a number of competing theories that attempt to account for the same phenomenon.

What are some of the advantages that the process of inductive reasoning or theorizing give us? First is the idea that through inductive reasoning one is often able to overcome confusion or explain something that is obscure. Specifically, I am referring to the use of examples in order to help people understand a complex or abstract concept. Frequently, when I introduce an abstract concept in my classes (like "knowledge production"), many students will comprehend it much better when given a concrete example as opposed to a general definition. Giving an example to help people understand a complex notion is a way of thinking inductively because we are proceeding from a particular instance to the general definition of the notion it exemplifies.

The advantage of using concrete examples is that it greatly enhances our understanding of complex issues. Moreover, scientists and researchers are often hard-pressed to agree on a general definition of a phenomenon, such as the AIDS virus, that *must* be investigated since it poses a huge threat to humanity. Yet by studying particular cases of HIV and thinking inductively, these researchers are able not only to describe some of the features of this disease but also to invent powerful drugs that help to combat it.

Another advantage of theorizing is that it enhances our ability to engage in critical thinking—to reflect on and analyze the world. According to Terry Eagleton (1989), children are especially inclined to engage in theorizing. Eagleton argues that "Children make the best theorists, since they have not yet been educated into accepting our routine social practices as 'natural,'

and so insist on posing to those practices the most embarrassingly general and fundamental questions, regarding them with a wondering estrangement which adults have long forgotten. Since they do not yet grasp our social practices as inevitable, they do not see why we might not do things differently." Children, in short, use theorizing to wonder about, make sense of, and critique the world around them. So they are much less likely than many adults to fall into the trap of thinking dogmatically and narrowly and taking things for granted.

While inductive reasoning opens up many great possibilities for us, this method of research may also lead people to think in overly simplistic terms. One of the most common mistakes made by researchers who use the inductive method is the attempt to isolate the "one cause" that presumably accounts for a very difficult and complex problem. Thus intelligence has been attributed to genetic endowment while adolescent violence has been explained away as a product of peer pressure. Such reductionistic theories assume that a single cause can provide an adequate explanation for the phenomenon being researched; such reasoning thereby exaggerates the importance of this cause while ignoring other relevant factors. Especially when dealing with human phenomena, it is almost always the case that there are many contributing factors, which are often interrelated, that account for these phenomena. In my classes, I emphasize the distinction between a cause and a contributing factor as a way of encouraging students to avoid thinking about complex problems in very simplistic, reductionistic terms.

Relating Theory to Practice

One of the most difficult challenges facing teachers, college professors, and scholars in general is the task of relating of theory with practice. However, as bell hooks points out, "it is evident that one of the many uses of theory in academic locations is in the production of an intellectual class hierarchy where the only work deemed truly theoretical is work that is highly abstract, jargonistic, difficult to read, and containing obscure references" (hooks, 1994, p. 64). Since such theories are inaccessible to a wide audience, they are often deemed useless and alienating by the very people they are designed to help. As such, they create a huge gap between theory and practice that serves to perpetuate class elitism. Like bell hooks, I believe that any theory that cannot be shared in everyday language cannot be used to educate the public.

Moreover, following educators like John Dewey, I believe that theory and practice are interrelated and that it is the teacher's responsibility to make their connections explicit. Throughout my college teaching experiences both in Israel and at Brooklyn College, I have discovered again and again that students frequently find it very difficult to make these connections on

their own. Thus, in my courses, I not only give many examples that illustrate the relationships between theory and practice but I also require students to practice making such connections in virtually all the assignments they do. In this way, the students are constantly required to reflect on the connections between theory and practice with the hope that they come to realize that our philosophies shape the way we conduct our lives and that the experiences we have often help us revise and refine our assumptions, goals, and values.

To be sure, many of my students openly ask me to make these connections explicit and they constantly raise questions that indicate that they are trying to make sense of this issue. How else is it possible for students of education or medicine, for instance, to fully comprehend the things they are doing daily in the classroom or hospital? Dewey argues quite convincingly that if modern science has demonstrated anything, "it is that there is no such thing as genuine knowledge and fruitful understanding except as the offspring of *doing*. The analysis and arrangement of facts which is indispensable to the growth of knowledge and power of explanation and right classification cannot be obtained purely mentally—just inside the head. Men have to *do* something to the things when they wish to find out something; they have to alter conditions" (Dewey, 1966, p. 275). Thus, as Dewey asserts, it is only by experimenting with various techniques and practices that students are able to gain genuine knowledge, knowledge that is tangible and comprehensible to them.

On the other hand, it is only through the power of theory that children as well as adults can make sense of many of the difficulties that they encounter in their lives and work. bell hooks makes this point very well: "Living in childhood without a sense of home, I found a place of sanctuary in 'theorizing,' in making sense out of what was happening. I found a place where I could imagine possible futures, a place where life could be lived differently. This 'lived' experience of critical thinking, of reflection and analysis, became a place where I worked at explaining the hurt and making it go away. Fundamentally, I learned from this experience that theory could be a healing place" (hooks, 1994, p. 61).

Drawing on hooks's insights, we can see that only by theorizing are children and adults able to interpret and make sense of the difficulties they encounter in their daily struggles. Theories provide us with a frame of reference and a language with which to name and critically analyze many of the problems we face daily. However, as hooks points out, theory is also a place of hope and healing. That is, theories provide us with a rich source of understanding not only of what *is* but also of how things could be different. Citizens who are struggling to make a difference need to become theorists who can imagine and create alternatives to many of the oppressive ideologies, practices, and "savage inequalities" that plague this society.

Synthesizing and Making Distinctions

One of the best insights regarding the significance of synthesizing comes from John Dewey, who strongly opposed the use of sharp distinctions like those between subject and object, the individual and the community, and freedom and authority. These distinctions, he believed, only serve to mystify an actual relationship in the lived world. Contrarily, he always insists on showing the interrelations between these "opposing" concepts in order to come to a better understanding of how we experience them. Regarding the distinction between authority and freedom, for instance, Dewey writes:

> The genuine problem is the *relation* between authority and freedom. And this problem is masked, and its solution begged, when the idea is introduced that the fields in which they respectively operate are separate. In effect, authority stands for stability of social organization by means of which direction and support are given to individuals; while individual freedom stands for the forces by which change is intentionally brought about. The issue that requires constant attention is the intimate and organic union of the two things: of authority and freedom, of stability and change. (Dewey, 1991, p. 131)

Dewey asserts that the problem of authority has traditionally been addressed by assuming that it is diametrically opposed to freedom. In his opinion, this way of resolving the issue can get us nowhere and even contributes to the problem since it posits a huge theoretical gulf between the two. The problem is rather to ascertain the relation between authority and freedom in experience in order to criticize it and suggest improvements. Dewey's point is that an adequate solution to the problem of authority has to begin by formulating the question differently: How is authority related to freedom?

Similarly, he thinks that rather than viewing the child and the curriculum as two opposing elements in the learning process, we need to expose the organic connections between the two. Thus, the shift of focus from the conflict between two concepts to the relation between them will often give us a new perspective from which to address the problem. When Dewey asks about the relationship between authority and freedom or between the child and the curriculum, he is not giving us a new answer to an old question but rather asking a very different and a much stronger question. Many advances in the natural and social sciences have come about in this very way: by reformulating an existing question and thereby redefining the terms of the problem.

No less important than the facility of integrating and showing the relationships between two concepts or phenomena is the ability to make distinctions and avoid confounding issues or concepts that should be kept separate. One distinction that is very important to maintain is the difference

between relationship and identity. To suggest that two ideas or phenomena are related is very different than saying that they are the same. Thus, in a previous section of this essay I argued that theory and practice are closely connected. However, that does not mean that theory *is* practice. Theory refers to the assumptions, ideas, goals, and values that inform our practices as teachers, lawyers, or doctors, but it is not identical with what teachers, lawyers, or doctors actually do in their everyday jobs. Indeed, many times there is a certain gap between what we think and believe and how we actually act in our work.

An example of confounding issues is when a certain idea or concept is reduced to its function so that whatever fulfills the same function is regarded as the same. As Hannah Arendt states, "it is as though I had the right to call the heel of my shoe a hammer because I, like most women, use it to drive nails into the wall" (Arendt, 1977, p. 102). For instance, violence has commonly been equated with authority since both have at times fulfilled the same function—making people obey. In this case, the result is a distortion of both violence and authority and a blurring of the distinguishing lines between them. Historically speaking, authority, unlike violence, has precluded the external means of coercion, and when force has been used, authority itself has failed. This point becomes evident when we think of any number of local conflicts between a ruling oppressor and an oppressed people (e.g., Israel and the Palestinians, England and the Irish Catholics). Typically in such conflicts, when the ruling power loses its authority over the oppressed minority, the former resorts to the use of force to maintain some control over the latter. Many political theorists and educators have recognized the importance of making this distinction between authority, on the one hand, and power, force, and violence, on the other. Such distinctions are important because they help us gain a clearer and more nuanced picture of a complex reality that defies any reductionistic, functional accounts.

Providing a Convincing Argument to a Problem

In order to get a good grasp of the meaning of "a convincing argument" it is helpful to compare it to the use of clichés. Throughout the seven years that I have been a college professor, I have found that students will often respond to a question I pose by using clichés and stock phrases. The problem with such use of clichés and hackneyed phrases is that it usually means that a person is not thinking critically and personally about the issue under discussion. When my college students use such language, I often find that they have not really reflected on the meaning of a given cliché before using it.

For example, when I ask my students about the meaning of "equality" as one of the principles of democracy, a common response is that "all humans are created equal." When I challenge them to explain in what sense

human beings are, or should be, equal, many of them find it difficult to respond. My experience indicates that most students have not adequately reflected on the difference between universal equality as an ideal that is difficult to define, and legal, social, or political equality as a standard that democratic societies strive for.

Moreover, I find that clichés and phrases are frequently used by students in order to artificially simplify a complex problem. Such language prevents students from viewing a problem from several perspectives and hence from gaining a deeper understanding of the issue. To continue the previous example, most college students who are asked about the significance of equality in a democratic society are able to point to principles such as equal rights and equality of opportunity. However, many of these same students have not critically analyzed the various meanings of these principles. They have never really thought about whether equality of opportunity means that everyone should get the exact same opportunities, regardless of differences of race, gender, nationality, and so forth or whether it implies, on the other hand, that the government needs to intervene to give certain privileges to various sectors of society that historically have been discriminated against.

In short, my experience with college students indicates that while most of them are able to identify democratic principles such as equality, diversity, and freedom, they lack a deep understanding of what these principles denote and how they are related. I am suggesting not that this lack of understanding is a problem but merely that students use clichés and stock phrases to evade questions that should be addressed critically and thoroughly. Professors need to be mindful that when students use ready-made, common quotes, they usually do not have an adequate understanding of the issue.

Unlike the use of clichés and stock phrases, providing a convincing argument requires one to formulate a clear and coherent response to a problem that considers the issue from several perspectives. Initially, this means that the problem will have to be defined in a forceful or complex rather than a weak or simplistic way. Recall for a moment the exchange between Socrates and Menon about virtue. When Socrates insists that in order to answer Menon's questions about the qualities of virtue we must first address a more fundamental problem (namely, what *is* virtue?), he is essentially reformulating Menon's question in a stronger way. Generally speaking, Socrates is suggesting that in order to have a solid understanding of a problem, we must first articulate this problem in the most basic and precise terms.

The point is that to discuss the practical relevance of concepts such as virtue, democracy, or language, we must first have a clear sense of what exactly these concepts mean. For example, I would argue that in order to give an adequate response to the question about how to best teach English to new immigrants in the United

States, whether in bilingual education or in regular classes, one must first address the meaning of language. Hence, if language is just a means of communication, then it is clear that the best way to teach English to new immigrants in the United States would be in the kind of classes that provide them with the most effective and efficient methods of learning English. However, if language is first and foremost a way of expressing one's unique cultural identity, then the criteria for responding to this question change completely—from efficiency to freedom of expression, diversity, and social justice.

Providing a convincing argument to a problem also has to do with exposing the epistemological, political, moral, social, and economic assumptions and interests that support a certain view. In my classes I call this undertaking "the practice of making the implicit, explicit." The point that I try to get across to the students is that it is absolutely crucial for them to make explicit the underlying assumptions of various historical theories as well as of their own views and beliefs. Joe Kincheloe and Shirley Steinberg are correct when they write that "such an undertaking is not merely an attempt to, in the words of conservative critics, 'make students feel good at the expense of becoming educated.' On the contrary, it is a content based, discursively savvy, complex analytical educational process that requires a deep understanding of a wide variety of knowledge systems, the skills to critique them, and the cognitive facility to develop new insights to replace inadequate academic constructs" (Kincheloe & Steinberg, 1999, p. 242).

Students who are never encouraged to examine their basic assumptions all too often come to accept the theories and views they subscribe to as "natural," inevitable, and unchangeable. Such students will most likely find ways to adjust to the existing state of society and polity in America and become supporters of the status quo. They will only rarely gain those insights and critical abilities that will enable them to become active citizens and transforming agents.

Finally, providing a convincing argument to a problem involves the facility to follow one's argument through to its logical conclusion so that all its implications are clearly visible. Practically speaking, this means that teachers should expect their students not only to express their opinions on various issues but, more fundamentally, to support their views with substantial evidence. By "substantial evidence" I mean a justification that is thorough and can stand up to the test of reason and experience. If we neglect to do this we are shortchanging our students by robbing them of an opportunity to engage in genuine thinking and to gain excellent practice in becoming critical and active citizens.

Conclusion

The various philosophical and analytical skills described in this essay are nei-

ther mutually exclusive nor meant to be an exhaustive list of such skills. As I indicated earlier, there are close connections between interpretation and analyzing issues from multiple perspectives as well as between synthesizing and making distinctions and relating theory to practice. Also, one could certainly come up with additional facilities that would fall under the same rubric. Yet the philosophical and analytical skills I have outlined here offer teachers, students, and citizens a powerful arsenal with which to respond to many of the problems they face in this hi-tech, information-laden, multicultural society. These skills can take us far beyond the narrow and technical skills of the standards reform movement, which focus primarily on those abilities that merely enable students to consume information, pass standardized tests, and compete in the technological marketplace. Indeed, the skills I have described will prepare our students to become citizens who care deeply about politics and social issues and have the critical awareness needed to analyze complex problems and intervene constructively for the sake of a better world and a more democratic society.

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STANDARDS AND THE CURRICULUM

The Commodification of Knowledge and the End of Imagination

David Hursh

More and more teachers are encountering efforts to control their teaching by linking the curriculum to standardized, high-stakes tests that are then used to rank and judge students, teachers, and schools. States are developing subject area standards and then aligning the standards with statewide standardized tests. Increasingly, standardized test scores are being used by school districts to determine whether students should be promoted to the next grade or allowed to graduate from high school. Further, some states, such as Florida, are using test scores to rank schools and districts with the purpose of rewarding those teachers and schools with high scores and punishing those with low scores.

Consequently, given the public and fiscal pressure to produce high test scores, it should be no surprise that many teachers are being directed by district and school administrators to focus on raising test scores rather than on teaching for understanding. In the Rochester City School District in New York, high school teachers report that they are pressured to teach for the test. In addition, the district requires that teachers inform students which standard they are teaching during each lesson, and administrators enter the classroom unannounced to quiz students regarding the standard being taught. Elementary teachers are being directed to devote less time to teaching social studies, science, and the arts and more time to teaching the three Rs and preparing students for the statewide math and literacy tests. Teachers in Rochester and elsewhere report anecdotally that each year they devote a month or more to test preparation and administration. As part of the effort to improve schools, elementary schools are adopting "proven" programs, such as Success for All and America's Choice, in which teachers are provided with lesson scripts speci-

fying what they and the students are to say.

How do we explain this shift from promoting teachers as thoughtful, intelligent practitioners who are partners in developing curriculum and methods to reducing teachers to mere technicians who implement curriculum, methods, and assessments designed by others? How do we explain the devaluing of subjects such as social studies and the standardization and simplification of the curriculum that remains? Why has the purpose of education shifted from developing knowledgeable, democratic citizens to developing productive workers? What is the rationale behind these efforts to standardize curriculum and teachers? Why do policies increasingly commodify knowledge and limit imagination?

In order to answer these questions, we need to understand how the government and corporations collaborate in reorganizing schools and the workplace in order to control teachers and other workers to promote economic growth and profit. Knowledge as an economic good—its commodification—and the standardization of teaching practices—the end of imagination—are part of an overall societal shift away from seeing people as creative producers of themselves, culture, and society to seeing people as producers and consumers of economic goods. These changes are also an outcome of the restoration of conservative politics, emphasizing a return to the supposed "common culture" of the "Western tradition," and the rise of neoliberal economics that emphasizes the right of the individual, and particularly the corporation as individual, to act free of constraint.

To make these factors more clear, I will situate these changes in teaching within the broader cultural, economic, and political context. From the late 1960s and continuing through most of the 1970s, workers were able to gain increasing control over their work and to win contracts paying higher wages. At the same time, citizens were able to gain concessions from the federal government that provided them with increasing rights to health care, a clean environment, and consumer and worker protection. In response to these gains, corporations and governments in the United States and in many other industrialized countries developed governmental and economic policies aimed at reducing the power of workers and personal rights and promoting economic growth and corporate profits.

Consequently, over the last three decades, we have witnessed a significant decline in the political power of teachers and other workers. This shift in economic and social policy has led directly to the realignment of education, and social studies in particular, to meet economic needs. The goal of education, and therefore the goal of teachers, has become promoting knowledge that contributes to individual and societal economic productivity and producing students who are compliant and productive. The curriculum is becoming standardized and is no longer valued for its role in developing political, ethical, and aesthetic citi-

zens. Consequently, education is seen less as a way to critically assess the world and more as a way to improve economic productivity.

Standards, Assessment, and Accountability

Since the early 1990s national commissions and state departments of education have endeavored to produce curriculum standards. Wayne Ross criticizes the standards movement for misleading us with "a simple solution to the complex problem of what and how to teach and, as a result, divert[ing] us from attending to the conditions of schools and how they might be re-envisioned in more democratic ways" (Ross, 2000, p. 203).

Perhaps because of disputes over the national standards, there has been little effort to implement them. However, the lack of national and even clear state standards has not kept states such as New York and school districts such as Rochester from developing high-stakes tests that are used to hold accountable local school districts, schools, and teachers. In New York, teachers are affected both by the state regents' final exams that students are now required to pass in order to receive a diploma and by the high-stakes standardized tests in math, science, social studies, and language arts that occur throughout the student's educational career. Consequently, teachers from all subject areas are pressured to help prepare students to pass high-stakes tests in literacy and math, and the exams in those two areas become the focus of school for weeks at a time.

It is not, therefore, standards themselves that have transformed what and how teachers teach—after all, it is possible to have standards that emphasize questioning and creativity—but the increasing use of standardized tests and test scores to evaluate districts, schools, teachers, and students. Increasingly, teachers are evaluated only on how well their students perform on standardized tests, not on what and how their students are learning.

Given the difficulty of achieving agreement on standards in various subjects, how do we explain the persistence, particularly that of state departments of education, in developing standards and standardized tests and imposing them on teachers and students? In this chapter I will argue that the standards, assessment, and accountability movements are part of a larger global movement away from Keynesian economic policies and toward the currently dominant neoliberal economic policies. Neoliberal policies emphasize "the deregulation of the economy, trade liberalization, the dismantling of the public sector [such as education, health, and social welfare], and the predominance of the financial sector of the economy over production and commerce" (Vilas, 1996).

Current political and economic policies incorporate the ideas of neoliberalism—promoting knowledge in terms of its contribution to economic growth and discouraging imaginative thinking beyond the needs outlined by

the state and its agencies. Such policies have a negative effect on our ability to see the world differently, consequently limiting education and citizenship. While the state and corporations present these policies as natural and inevitable, they are, in fact, historically contingent and therefore capable of being changed.

The link between the rise of neoliberal economic policies and the changing role of the state needs to be revealed and critiqued. Specifically, the neoliberal state, while claiming to limit the intrusion of the state into the life of the individual, in fact increasingly controls the individual in the interest of corporations through techniques of auditing, accounting, and management (Barry, Osborne & Rose, 1996, p. 14).

From Keynesian to Neoliberal Economics: The Rise and Fall of Personal Rights

The late 1960s and the 1970s are often portrayed as years in which radical antiwar protesters were pitted against a conservative, "Archie Bunker" working class. However, a more accurate portrayal of the period would depict not only an antiwar movement both at home and in Vietnam but also a labor movement engaged in disobedience, chaos, "counterplanning," malingering, and huge, militant wildcat labor strikes. It was in response to this crisis—a crisis of "excess" democracy and "excess" working-class power—and the vicissitudes of overproduction that the great right-wing backlash of the last three decades was born (Parenti, 1999, pp. 108–109). From this economic and political crisis, corporations and the political Center and Right worked to roll back personal and labor rights and eventually supported state agencies, such as state departments of education and school districts, in imposing educational restrictions.

The rise of worker militancy was part of a larger movement by the disenfranchised and powerless to extend their rights (Parenti, 1999). African Americans fought for the right to vote; students, for free speech; and workers, for safer workplaces. Between 1964 and 1979, scores of laws were passed to protect workers, consumers, and the environment. The Environmental Protection Agency and the Occupational Safety and Health Administration were created. It was a time of increasing personal rights at the expense of corporate profits. As workers continued to gain wage concessions through labor activity and strikes, corporate after-tax profits declined from 10 percent in 1965 to 4.5 percent in 1974. "Throughout the rest of the Seventies," writes Christian Parenti, "inflation and unemployment persisted, labor unrest continued, and profits stagnated. Workers were claiming an unprecedented share of the wealth they produced. It was an unmitigated disaster for those who owned, and they would soon take terrible revenge" (Parenti, 1999, p. 118).

This revenge would be carried out by implementing two strategies. First,

a recession would be initiated to deflate wage demands. Second, international trade policies would encourage corporations to set up factories and sell consumer goods in less developed countries while nations developed neoliberal economic policies that emphasize economic growth and property rights over social welfare and personal rights.

The first strategy, implementing a recession in order to deflate wage demands, was bluntly stated by Federal Reserve Board Chairman Paul Volcker, who in 1979 provided the following rationale for the recession: "The standard of living of the average American has to decline. I don't think you can escape that" (Parenti, 1999, p. 119). Similarly, Alan Budd, chief economic advisor to Margaret Thatcher, stated in 1992: "Rising unemployment was a very desirable way of reducing the strength of the working classes . . . what was engineered—in Marxist terms—was a crisis in capitalism which re-created a reserve army of labor, and has allowed the capitalists to make high profits ever since" (quoted in Parenti, 1999, p. 108).

The second strategy, that of promoting globalization and neoliberal economic policies and its implications for state and local education policies, will be the focus of the remainder of this chapter.

Deconstructing the Discourses of the Neoliberal State

Under neoliberal policies promoted by the International Monetary Fund and the World Bank, education is no longer promoted as a means of developing educated citizens but is viewed in terms of what it adds to the economy. The purpose of education has become developing the competitive individual who can compete in the marketplace (Peters, 1994, p. 66). As one economist affiliated with Argentina's Ministry of Economics stated: "What we try to measure is how well the training provided by each school fits the needs of production and the labor market" (Puiggros, 1999, p. 27).

The neoliberal state plays a complex role by transforming government from a site where different groups, such as corporations, workers, and the unemployed, bring pressure to bear in support of policies that reflect their own interests to a site where decisions are made based on what is good for economic growth. Further, while the neoliberal state claims to intrude less in the life of the individual, to "get government off people's backs," it in fact intervenes in individuals' lives through other governmental methods and tactics that are promoted, ironically, by those promoting less government.

The analysis of Andrew Barry, Thomas Osborne, and Nicholas Rose in their introduction to *Foucault and Political Reason: Liberalism, Neo-Liberalism, and Rationalities of Government* (1996) superbly describes the changing role and tactics of educational organizations, both governmental (i.e., state departments of education) and quasi-governmental (i.e., the National Board for Professional Teaching Stan-

dards). They write: "Paradoxically, neo-liberalism, alongside its critique of the deadening consequences of the 'intrusion of the state' into the life of the individual, has none the less provoked the invention and/or deployment of a whole array of organizational forms and technical methods in order to extend the field with which a certain kind of economic freedom might be practiced in the form of personal autonomy, enterprise and choice" (p. 10).

State departments of education increasingly intrude into the lives of teachers and teacher educators. They undertake their regulation through "technical methods such as accountings and auditing" (Barry, Osborne & Rose, 1996, p. 11). These technical means include standards, testing, and measuring tools that "tie techniques of conduct into specific relations with the concerns of government" and that "reconnect, in a productive way, studies of the exercise of power at the molecular level [in schools] with strategies to program power at a molecular level" (p. 13).

Further, as we saw above in examining recent developments in New York State, "Public authorities seek to employ forms of expertise in order to govern society at a distance, without recourse to any direct forms of repression or intervention. . . . Neo-liberalism, in these terms, involves less a retreat from governmental 'intervention' than a re-inscription of the techniques and forms of expertise required for the exercise of government" (p. 14).

Governmental and quasi-governmental organizations seek to govern not by specifying exactly what must be done but by presenting the requirements or standards as rational, unproblematic, and uncontentious and by providing a limited range of conditions under which they must be implemented. This makes it possible for the social actors, whether they be teachers or teacher educators, to have a false sense of choice and freedom. As Rose writes, the "formal political institutions" govern from a distance and "conceive of these actors as subjects of responsibility, autonomy, and choice, and seek to act upon them through shaping and utilizing their freedom" (Rose, 1996, pp. 53–54). Further, writes Rose, governments "are to be analyzed as practices for the 'formation and justification of idealized schemata for representing reality, analyzing it and rectifying it—a kind of intellectual machinery or apparatus for rendering reality thinkable in such a way that it is amenable to political programming" (Rose, 1996, p. 42).

The neoliberal state, through the use of standards, assessments, and accountability, aims to restrict educators to particular kinds of thinking—thinking that conceptualizes education in terms of producing individuals who are economically productive. At the same time, other kinds of rationality are excluded. Rose writes that these rationalities "deploy a certain *style of reasoning*: language here understood as itself a set of 'intellectual techniques' for rendering thinkable and practicable, and constituting domains that are amenable—or not amenable—to re-

formatory intervention" (Rose, 1996, p. 42).

Michel Foucault, in analyzing the state, wrote about the process of normalization and surveillance (Foucault, 1977, 1979). Thomas Popkewitz, in his book *Struggling for the Soul*, uses a Foucauldian approach to analyze how particular styles of reasoning become prevalent in the school. He particularly focuses on "how different pedagogical knowledges make (construct) the teacher who administers the child. . . . [T]he rules of 'reasoning' about teaching and childhood 'tell us' what to notice (and not to notice), what things belong together, and what things are not 'thinkable' within the rules and standards of the thinking applied (Popkewitz, 1998, p. 17).

These ways of thinking and knowing along with neoliberalism need to be critiqued and resisted. Pierre Bourdieu, in *Acts of Resistance: Against the Tyranny of the Market* (1998), encourages us to resist the logic of neoliberalism. "Everywhere we hear it said, all day long—and this is what gives the dominant discourse its strength—that there is nothing to put forward in opposition to the neo-liberal view, that it has succeeded in presenting itself as self-evident, that there is no alternative. If it is taken for granted in this way, this is a result of a whole labor of symbolic inculcation in which journalists and ordinary citizens participate passively and, above all, a certain number of intellectuals participate actively" (Bourdieu, 1998, p. 29).

The mantra of economic productivity and the market is so persistent as to override any thought of other possibilities. In response, Bourdieu encourages academics to "analyze the production and circulation of the discourse" promoting the inevitability, the "naturalness" of global neoliberalism. Similarly Foucault, while not commenting specifically on neoliberalism, desired to examine the ways in which the present needs to be "*acted upon* by historical investigation, to be cut up and decomposed so that it can be seen as put together contingently out of heterogeneous elements each having their own conditions of possibility" with the "aim of destabilizing it" (Barry, Osborne & Rose, 1996, p. 5).

The attack on education by business is not new. Throughout the twentieth century, business leaders blamed schools for corporate inefficiencies and pressured educators to meet the needs of business. Beginning in the 1890s, businesses began blaming schools for the nation's economic problems (Kliebard, 1995). After World War II, the National Association of Manufacturers urged schools to "'indoctrinate students with the American way of life' and to teach that 'the American system of free enterprise has done more for human comforts than any other system'" (Fones-Wolf, 1994, p. 200). Since the publication of *A Nation at Risk* in 1983, schools have once again been the recipient of corporate blame for the state of the economy.

But the difference between then and now is the increasing hegemony of an all-encompassing discourse embedded within not only national but

international policies. Such hegemonic discourses and policies make it difficult for teachers and others to resist "the tyranny of the market."

Possibilities for Resistance

Under the current neoliberal regime, education is valued for increasing the economic productivity of students as future workers and corporate profits. This shift represents "the triumph of the economy over politics and culture" (Kellner, 2000, p. 307).

However, as Bourdieu reminds us, writing as both a sociologist and a political activist: "knowledge must be deconstructed, . . . categories are contingent social derivations and instruments of (symbolic power)" and "the structures of discourse are politically charged social preconstructions" (Bourdieu & Wacquant, 1992, p. 47). The way in which the world is organized is not invariant but historically constituted and thus socially variable (p. 19). Therefore, it is crucial that we understand how neoliberalism changes the discourses about who we are and what we can think about. We need to examine the current social structures and to discourse about the role they play in the distribution of "material resources and in the forms of systems of classification, the mental and bodily schemata that function as symbolic templates for the practical activities—conduct, thoughts, feelings, and judgments—of social agents" (p. 7).

So far, the state's efforts to audit and control teachers have been largely uncontested. State policy making has been privatized (Blackmore, 2000, p. 140). Teachers are increasingly losing control over their work as test scores become supreme. As educators and citizens, we need to analyze and critique recent efforts to control teachers and students through standards and high-stakes standardized tests.

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EDUCATIONAL STANDARDS

For Whose Purposes? For Whose Children?

Patricia Hinchey

By way of introduction, let me offer a test and a metaphor. Please complete the following test item conscientiously before reading on.

Select the best answer to the following question:

> If a van carrying high school volunteers home to northeastern Pennsylvania leaves from an orphanage in Mexico City, the van will travel:
>
> a. north and east
> b. south
> c. east
> d. through Canada
> e. all of the above

Does the answer seem self-evident? Or, does it at least seem clear that *d.*, and therefore *b.* and *e.*, can be eliminated? After all, what sense would it make to drive from Mexico all the way north to Canada if the final destination—Pennsylvania—is obviously well south of the Canadian border? And once those nonsensical answers are eliminated, does it seem obvious that the answer would therefore be *a. north and east* rather than *c. east*? Yes, of course, that's right: Pennsylvania is north and east of Mexico City and therefore those directions would have to be the best route and *a.* the best answer.

Such logic seems to make perfect sense, and it's a good bet that any test maker would identify *a.* as the correct answer. Still, no matter how logical a northeast route might seem, it was not the one actually taken in the real-world case of my son, who did indeed travel home to Pennsylvania from a service experience in Mexico City via Toronto, Canada. Huh? Say what? Were the Jesuit chaperones who drove the van stupid, as they might appear to a test maker who insisted that there was clearly only one best answer, and

that it was *a*.? Couldn't the drivers see that the best route clearly could not include a visit to Canada, which would take them far north of Pennsylvania and force them to backtrack south?

Not at all. Although test makers conveniently ignore this reality, often there is no way to designate a best answer to a question without making an assumption about it. And, as assumptions vary, so will "best" answers. The assumption that a test maker might mistake for a self-evident truth—that the most desirable route would be the most efficient route—simply was not valid in the case of the Jesuit educators who led my son's trip to Mexico. Their assumption was not that the trip should be as efficient as possible, but that it should be as educative as possible. For them, the best route would serve several purposes in addition to returning the boys to their parents.

One purpose was accomplished before the group ever left school grounds. The boys would have to get along in close quarters for several weeks, so allowing them to plan a route through destinations they managed to agree upon, within some very generous boundaries, not only broadened their travel experience but also provided practice in the essential skill of negotiation. Moreover, a longer trip home allowed the boys more time to process their experience of living in a Mexican orphanage. What did they learn from being the outsiders in a foreign culture? What did they learn from living under conditions that seemed luxurious to the Mexican children but impoverished to them, in a place where furniture, space, and privacy were minimal, where food was basic and rarely varied, and where work was physical and unending? What did they learn from seeing one of their own countless faded, name-brand T-shirts become a Mexican orphan's single most prized possession?

The assumption on this trip was that the more time the boys had together on the way home, the more opportunities they would have to reflect on, discuss, and learn from their experience. In contrast to the "logical" assumption that the best route is always the shortest route, the Jesuits' goal was for the trip home to allow enough time and opportunity for maximum learning. Therefore, no matter how patently silly it might first appear to traipse north to Canada and then south again, the best answer to the opening question for the Jesuits and their charges was genuinely *e. all of the above.* The world and its experiential richness rarely operate in the black/white, yes/no, right/wrong fashion that test makers so often assume.

The reality is that no one can reliably determine what makes most sense in any real-world context, what constitutes the best plan or answer in the face of any genuine dilemma, without questioning relevant assumptions and goals. Despite the insistence of many public figures that standards are obviously the best answer to the question "What should be done to improve education?", that assertion needs to be examined and defended in terms of its assumptions and goals before it merits widespread endorsement.

When officials call for standards and high-stakes testing based on standards as an "obvious" way to improve education, they are calling for a particular kind of standards—the version that Joe Kincheloe, Shirley Steinberg, and Danny Weil refer to as "technical standards" (see Weil, "Functionalism," this volume; Steinberg & Kincheloe, 1997, intro.). Technical standards incorporate one set of assumptions and one set of goals while entirely ignoring alternate assumptions and goals—those underlying the alternative version of standards that Kincheloe, Steinberg, and Weil refer to as "standards of complexity." An informed public must realize that before it is possible to judge any proposal that claims "*This* is obviously the best way to improve public education," it is necessary to ask—among other questions—"What assumptions are being made here about the goals of public education?"

The more that a test maker or politician or corporate executive insists that the answer to this question is obvious, the less we should trust the answer. There have always been a variety of competing purposes that might be embedded in public schools, and whatever we choose to do in schools will serve certain purposes and undermine others, whether any of those purposes are articulated or not. As surely as the "best" route home depends on the particular goal of the traveler, the merit of any call for standards depends upon whose goals are being served and whose goals are being sacrificed.

What Is "Public" about Public Schools?

Among common and decidedly implicit assumptions often made about public schools is this one: Public schools exist to serve American children. This key assumption is evident in rhetoric about "our kids" and what we owe them in schools: "*Our* kids"—who are presented as being the obvious responsibility of the entire community—deserve safety, challenge, good teachers, and so on. Of course, no one would argue against providing students with such things in schools, and because all of those things are good for kids, it seems self-evident that the purpose of schools is to promote the welfare of children. Nevertheless, that assumption is a fallacy.

In the history of the United States, public schools have never been benevolent and altruistic government institutions focused on the welfare of children. Instead, government supports public schools out of public tax monies in order to accomplish goals of the *state*. Although state purposes clearly underlie many educational initiatives, they go unnoticed because proposals are saturated with language that emphasizes the "obvious" goal of benefit to the child. It takes a very close look and a great deal of thought to penetrate the child-centered rhetoric and to uncover the real goals public education serves.

Joel Spring, expert in many facets of the philosophy and history of public education, describes three categories that are useful in sorting

through the wide range of purposes common in public schools: *political*, *economic*, and *social* (2000, pp. 1–20). Spring suggests that *political goals* include those necessary to ensure the survival of democratic government in the United States. From this perspective, public schools are the means of identifying future political leaders and of educating the public for effective participation in democratic citizenship. Early on, leaders of the new United States had to struggle with the question of who would lead the country in years to come. No one believed the ignorant could effectively do so, but the belief that leaders needed to be well educated led to a fear that a ruling aristocracy might evolve if only the wealthy had access to education. As a result, even the earliest political leaders favored some form of public education to protect the country from the development of a wealthy and oppressive oligarchy. The idea that poor children as well as rich children need to be educated for possible political leadership, then, is one that was woven into the fabric of U.S. culture at its very founding, one that validates our cultural claim that any child can become president.

Of course, democracy also requires the participation of an informed citizenry, and so in addition to well-educated leaders, the country needs citizens who believe that democracy is the best of all possible governments and who have sufficient education to make informed and reasoned political decisions. Citizens must be able to read in order to be informed on issues. They need to understand how government works in order to accept and play their own active role in it. They need to believe that democratic government is the most desirable government if the country is to remain politically stable and free from rebellious challenges. They need to believe that the country is firmly based on meritocracy, a fair system that gives all citizens equal opportunity to shape the future based on their abilities.

The public schools, then, were established largely to help ensure the survival of a democratic form of government in the United States, and today's schools continue to serve this political goal. Schools still cultivate loyalty to the existing system of government and its leaders, as they have from the inception of public schooling. For example, every February silhouettes of George Washington and Abraham Lincoln crop up in the windows of elementary schools nationwide, as dependably as crocuses pop up in the spring. Great leaders gave us a great country, children learn, and we need to remember that and to honor them and the government that is their legacy. Every morning, children pledge allegiance to the flag in a public ceremony affirming political loyalty. Much of what is done in schools, from voting for class president to writing essays on such topics as "The American I Most Admire," is intended to promote the patriotic mind-set that every government needs for its own survival.

Social goals, in Spring's characterization, involve efforts to shape and con-

trol young people in ways that will, theoretically, contribute to the good of society at large. Early on, for example, school attendance was made compulsory in an effort to reduce juvenile delinquency and crime, and today there is still a good bit of talk about "keeping kids off the streets" until they're at least sixteen, in the hope of keeping them out of trouble. More than one theorist has believed that schooling reduces the need for both current and future police enforcement because while keeping youth off the street, schools can concurrently inculcate values—respect for authority, say, or for hard work—that characterize a voluntarily hard working, taxpaying, deferential citizenry.

In recent decades, the expectation that schools will remedy social problems has steadily expanded. Schooling in itself is expected to lift students out of poverty, and this improvement is expected to have the domino effect of reducing unacceptable crime rates. In addition, the public has increasingly looked to schools to curb growing drug and alcohol abuse, and to educate safe drivers, and to curb premarital intercourse and pregnancies, and to prepare the young to balance checkbooks, maintain marriages, and responsibly parent children—and so on, and so on, and so on with, not unexpectedly, increasing controversy over *which* values and habits should be included on the list.

Currently, for example, there is heated public debate over what schools should say about homosexuality—if they are to say anything at all—as well as what they should or shouldn't say about AIDS, abortion, and contraception. Because schools can promote values among young people, they have long been recognized as potential tools of social regulation. In an increasingly diverse society, the classroom has become a prized means for shaping social climate and norms, for shaping the way citizens will live in the future—married or not, religious or not, bigoted or not. Because curriculum can have significant social impact (witness the countless parents who have been shamed into recycling by children exposed to environmental education), passionate public debate over what will and won't be taught in classrooms is sure to continue.

Finally, *economic goals* are those assuring the continued wealth and financial stability of the democracy. It's revealing to note, however, that many of the values that schools promote as being in the obvious best interests of society (like obedience and unquestioning respect for authority) also function to nurture the kind of worker that corporations might find most desirable. As public schools emerged in the late nineteenth century, for example, they were designed largely to educate future factory workers, and it is not hard to see how classroom routines acclimated students to a factory environment. Suffering the tedium of repetitious schoolwork prepared young people to tolerate the boredom of assembly lines. Learning to complete any task without question simply because an authority figure so ordered prepared them to meekly follow the

orders of a supervisor. Being confined in large groups and uncomfortable conditions, lacking the freedom even to urinate at will, conditioned them to expect bosses to control their bodies as well as their minds in the workplace. In direct contrast, private schools—which have traditionally educated the wealthy children of factory *owners*—have prided themselves on offering active learning and small classes, an education preparing them for leadership rather than drudgery.

Over time, public schools have undergone changes that make it appear that they educate children more democratically, that they educate for much broader options than factory work. This democratization is thought to be embodied in the way schools now sort students into several categories. In this system, students are tracked into courses of study geared to the particular future the school determines most suitable for each child. A student deemed to be smart and hardworking (according to standardized tests, school performance, and teacher opinion) is offered rigorous coursework and schooled for college, while apparently less able students are offered coursework generally considered less challenging—generally vocational training. Those labeled least able are shuffled off to "remedial" courses, where they rarely remain long enough to graduate.

Schools and proponents of tracking believe that all of this sorting is reliable, truly based on merit and intrinsic ability. From this perspective, the school simply does the marketplace the favor of identifying which young people might be suited for what kind of slot in the labor market and then providing appropriate education for students in each slot. A student from a low track who ended up in a minimal-wage job would, according to this perspective, have lacked the intrinsic talent to rise any higher. This is the "You can't make a silk purse out of a sow's ear" philosophy of education.

That job training is a primary responsibility of public schools is an idea trumpeted daily by politicians, business leaders, and assorted educators who insist that only a first-class, challenging education can keep the American workforce competitive. So loud and ubiquitous are such assertions, in fact, that underpinning nearly every public pronouncement and reform scheme is the implicit assumption that *the* most important job of public schools is to prepare the kind of workers that employers say they need. These days, businesses are very busy handing schools specifications for the kinds of workers they want, and many people simply accept the idea that schools should produce workers exactly according to those specifications. The claim is that if schools don't attend to this task, the GNP and the economic future of the country will be in danger. In some cases, economic peril is even more immediate. When schools don't teach young people what employers specify, executives begin suggesting to politicians that they might just have to take their businesses—and jobs—elsewhere (Morrison, 1996). For this reason, politi-

cians, administrators, and parents alike tend to listen closely when business executives talk about curriculum.

Implicit Goals and Particular Agendas

Although many talk about education reform as if its goals were self-evident and immune to challenge, they are not. A major assumption embedded in public discourse about education is that any reform should strive to increase student performance on a variety of standardized tests, such as national competency exams and SATs. However, this tacit assumption goes unchallenged largely because psychometricians have spent decades persuading the public that numbers are always important and always trustworthy. Faith in good test scores as a reflection of quality has become so widespread that higher scores on any test have come to seem a self-evident good—like the assumption that any good route will be a short route.

The assumption that higher scores on some standardized test will indicate improved education underpins the technical standards movement, and it contains enormous implications for classroom practice. Essentially, by stressing a vast body of core content, technical standards promote still more of the same kinds of classroom practice we've had for decades: rote memorization of facts, facts, and more facts and the mechanical use of standard formulas to solve textbook problems. Both the assumption and the pedagogy implicit in the technical standards movement require thoughtful questioning. If technical standards are imposed on schools and the result is more of the same in classrooms, then whose agenda will public education serve? Which political, social, and economic goals will be advanced?

I would argue that the agenda and goals of the current standards movement, which are widely supported by politicians and business people as opposed to educators in the trenches, are those of political conservatives, of politicians protecting their own careers, and of business people interested in increasing their six- and seven-figure salaries and in paying larger and larger dividends to stockholders. Proponents of technical standards seem far less interested in educational reform than they are in protecting the existing power structure and their own, largely financial, interests. Ironically, the technical standards movement therefore supports an elite who function, and would continue to function, as the very oligarchy the founding fathers feared.

Consider, as a preliminary example, the need for schools to educate patriotic citizens. Which definition of patriotism should that be? The bumper sticker mind-set of "Love it or leave it" or an alternate conception that casts thoughtful dissent as both a patriot's right and responsibility? The first promotes blind obedience, a sheeplike mentality among followers, whereas the second promotes a critically questioning disposition, a habit of deciding for oneself the merit of an idea or plan and then taking a public stance, even

if—perhaps especially if—that stance opposes majority opinion.

Is it genuinely in the best interests of the entire population for the norm to be "My country, right or wrong—but it's never wrong"? Do we want citizens ready and willing to sacrifice their children and spouses to any war politicians decide to wage? Or do we want citizens who ask hard questions about *why* such sacrifice is necessary; who exactly the sacrifice will benefit; how exactly they will benefit; and why politicians think the benefits are worth the wholesale death of young, and sometimes not so young, Americans? Will the country be better off if its people believe that any war must be a good war if leaders have decided to deploy troops? Does our national experience tell us that World War I, World War II, the Korean conflict, the Viet Nam conflict, and Operation Desert Storm must all have been equally justified on the simple grounds that leaders chose to send Americans to fight in them? Should citizens never ask questions and voice opinions about government actions? Should they be taught that it's unpatriotic to ask questions like "Who would make money on this war?" and "Whose sons and fathers and mothers and sisters are likely to die in this war?"

The answer to the question of which type of loyalty schools are expected to promote is rarely explicitly discussed, except perhaps in court cases brought by schools seeking to force students to participate in the ubiquitous flag pledging ritual. When it takes Supreme Court orders to determine and then remind schools that students are citizens guaranteed certain basic rights—including the right to follow their conscience in religious matters—then it's apparent that schools are currently devoted to producing mindless, unquestioned loyalty to government. Schools seeking court orders to force students to participate in loyalty pledges is just one example. Another is using textbooks that sanitize American history, universally depicting historical events as demonstrations of great American heroism and virtue.

Most, maybe even all, students have heard the slogans "Remember the Alamo!" and "Remember the Maine!" but have little understanding of the actual events behind them. This is true partly because classroom instruction stresses the memorization of factual tidbits instead of nurturing genuine understanding among students. It is also true, however, because history textbooks shape student perception by a careful selection of material. For example, a text might well mention a hardy and brave band at the Alamo defending that fort to the death, but it is sure to conveniently leave out any nasty questions about legitimate Spanish ownership of the territory in dispute. And although the Maine was not sunk by enemy fire after all, that incident is still cited as an example of American courage rather than as the convenient excuse for American aggression that it actually was.

Such textbooks mythologize people who died for the country while ignoring the historical truths about the

causes of their deaths. They overwhelmingly tell the story of white men while ignoring or downplaying the contributions of women and the effects of white settlement on such groups as African Americans and Native Americans. This kind of selective history perpetuates the grand American narrative of a consistently glorious past, a narrative that is far more inspirational without factual clutter. What students are force-fed is an unquestioning loyalty to a country they are encouraged to perceive as having only a righteous and glorious history. Theft of Native American and Spanish territory and the wholesale killings of native peoples are inconvenient realities expunged from the national saga as it is currently replayed in schools, leaving a pervasive sense of Anglo-Saxon cultural superiority.

It is for this reason that the much more inclusive history/social studies standards drafted near the close of the twentieth century were widely reviled by conservatives—though they were widely embraced by the same people who embrace complexity. As an alternative to a definition of patriotism as blind loyalty and to the teaching of history as nationalistic propaganda, proponents of complexity argue for a patriotism that examines the various political and economic factors behind historical events and that includes a willingness to acknowledge past mistakes in order to learn from them. It calls for a definition of "an American" as something more inclusive than an aggressive white male.

For example, if students as future voters are to genuinely understand why in the year 2000 several Native American tribes were pressing lawsuits against the United States government for reparation and the return of territory, they need to understand the shameful treachery of earlier politicians who strategized the theft of Native American land. They need to know about the government policy of starving tribes as a means of bringing them onto the reservations. And they need to understand that the contemporary poverty, drug abuse, and other social problems on tribal land can be readily linked to earlier duplicitous government actions. Lacking such knowledge, they will be ignorant voters and very probably angry bigots as well.

But instead of having learned such inconvenient facts, the vast majority of American students are barely aware that Native Americans even *exist* contemporaneously. While Navajo tribal lands include over 16 million acres and span multiple states and while other reservations exist all over the nation with their own leaders and political agendas, history books usually fail to mention this component of the American population at all—just as they fail to explain why there are Hmong people living in California (an explanation that would involve an inconvenient admission of more shameful behavior during the Viet Nam conflict) or why there has never been an African American president (an explanation that would involve acknowledging historical as well as current racism). To call attention to such af-

fronts to genuine democracy would be to call for change in a power structure that is currently thoroughly entrenched. And obviously, that is not a goal the entrenched are willing to readily accept.

Any politician who calls for standards will, by default, be supporting one or the other of the opposing definitions of what it means for a school to educate a democratic citizenry, depending on what is to be taught and tested. Will tests ask nearly exclusively about white and male American war heroes, as they have for so many years, with romanticized versions of Betsy Ross, Sacajawea, or George Washington Carver thrown in as tokens of democratic representation? Or will they ask about a more factual, more inclusive, and less sanitized history so that students can understand the issues that accompany a truly multicultural democracy and, as adults, vote on them from an informed perspective? Will questions about the United States slaughter of Native American women and children at Sand Creek ever appear next to the battle it provoked, commonly referred to in American lore as Custer's Last Stand? Given the conservative uproar over and opposition to more inclusive curricula designed by the National Council of Teachers of Social Studies and constant conservative attempts to censor more representational literature in language arts classes, it seems certain that a core curriculum would be more of the "same old, same old," promoting the same old goals of established power.

As already noted, as the standards tests go, so will go the instruction. One of the reasons standards supporters argue so vehemently for standards and exams is that they expect the tests to drive instruction—and they will. If history tests focus on wars and military leaders, then wars and military leaders will continue to be the center of classroom instruction. So high have the stakes become already in standardized testing that teacher cheating has become an issue (Viadero, 2000). If teachers are willing to cheat to get the mandated results, if schools are willing to fire teachers whose students don't do well on whatever test comes down the pike, if states are constantly threatening takeovers of schools, then there is no question that the tests will promote the goals and definitions implicit in the questions asked. It's safe to count on the largely prosperous and prominent supporters of technical standards, who profit most from the status quo, to make sure that test questions *will* be about the domestic Betsy Ross rather than the rebellious Charlotte Perkins Gilman, about the Gettysburg Address rather than the 1969 Senate-issued report *Indian Education: A National Tragedy—A National Challenge*.

Yes, public schools serve the political purpose of supporting democratic government and a patriotic citizenry. But which definition of patriotism will students be exposed to? Love it or leave it? Or a definition that includes dissent as the constitutionally protected right of an informed citizenry? Yes, public schools serve social goals,

seeking to improve social conditions. But whose definition of a good society will be imposed? That of the devout, who believe that beginning every day with prayer would go far in improving the behavior of young people? Or that of civil rights activists, who are more concerned with protecting personal freedom and who insist on the strict separation of church and state and on prayer as a private matter? And yes, schools do need to educate workers who are able to earn a living and who don't need to depend on the state for support. But what is a "good worker"? Is it one who follows orders without question, always with an eye on the corporate bottom line? Or is it one who has the intelligence and courage to blow the whistle when companies are sacrificing public health and safety to greed, as has happened in the tobacco industry?

There is, no doubt, some oversimplification in presenting such issues in terms of a dichotomy—technical standards vs. standards of complexity, and support for an existing elite vs. pursuit of social justice. However, juxtaposing the goals, assumptions, and practices implicit in the two oppositional standards proposals clarifies critical differences between them. Those who support standards of complexity have nothing to fear by speaking openly about their goals because they pursue ends that benefit the entire population: genuine democracy and social justice. On the other hand, there may be good reason why proponents of technical standards do not talk openly about their goals except in terms of *improving education* and *raising test scores.* Exposed by thoughtful analysis, the goals of technical standards speak far less well of their supporters' agenda.

Implicit Goals of Technical Standards: Who Benefits?

Implicit Political Goals

The most obvious political concern of the technical standards movement is that of the politicians, who are far less concerned with the education of the populace, or with any other issue, than they are with getting themselves elected or reelected. Many politicians who have jumped on the current standards bandwagon have done so not because they sincerely believe that standards will genuinely improve education but because endorsing standards offers the appearance of caring about education without supporting any painful or costly alternative strategies or angering constituents.

Make no mistake, the technical standards movement is not about improving the education of young people. If improvement were the real goal, talk about implementing standards would have to include talk about funding reform. Educators like Jonathan Kozol have spent decades documenting educational problems that grow out of our current system of inequitable funding. Because as a country we rely primarily on real estate taxes to fund schools, all public schools are far from being equal. One school, for example, may have multi-

ple computers in every classroom because it is blessed with wealthy homeowners and generous tax support. Meanwhile, in an adjacent district with low real estate values, another school cannot even provide its students with crayons or books. In one school district, there may be one highly qualified, full-time teacher for every twenty to twenty-four students, while in a nearby poorer district, a school may be unable to attract even one full-time teacher, qualified or not, for every thirty-five to forty students. Wealthy students may attend new, multibuilding campuses, while across the river poor students are crowded into abandoned roller skating rinks and into old gymnasiums. Every school's funding depends largely on its local tax base, and the poorest schools in the poorest areas are always the least supported and consequently have the least to offer their students in personnel, physical plant, support services, and supplies.

For all the rhetoric about good education not depending solely on money, there is a point at which the lack of money makes good education virtually impossible. How can children learn to read without books? How can they master math without pencil and paper? How can they become knowledgeable about history when the books they do have name Richard Nixon as the current president? How can children with asthma—so common in poor areas—concentrate on academics in windowless buildings where the air is choked with dust? Readers who have not seen such conditions and who doubt they exist should either read Jonathan Kozol (1991, 1995) or start visiting the kinds of schools he documents. They do exist and they are a national disgrace. In recent years, state supreme courts have been acknowledging these unjust disparities and charging states to formulate more equitable funding systems. Nonetheless, politicians and the public at large continue to stubbornly refuse to acknowledge the problem. As history books sanitize history, standards proponents sanitize educational issues by ignoring these inconvenient facts because these educational truths will not help anyone get elected.

One reason for this is that a change to more equitable funding has proven to be a political nightmare. A New Jersey governor, James J. Florio, who implemented a more equitable school-funding plan soon found himself navigating highways flooded with cars sporting *Impeach Florio* bumper stickers. Florio, understandably if regrettably, jettisoned his own plan. Similar attempts have failed in other states. Charged by state courts with designing more equitable funding, state leaders have devised "equity" plans with no substance, hoping to appease voters with minimal changes and to appease courts with the appearance of reform. Courts, however, have not been fooled, and they have repeatedly rejected such sham plans in several states.

Because politicians know that helping to implement real funding reform might well end their political careers,

politicians have rushed to embrace the current standards movement as a placebo. Supporting technical standards gives them fodder for speeches on their commitment to improving the schools without the political peril inherent in more substantive reform strategies. In short, insisting that states (1) implement standards and (2) punish students, teachers, and schools that don't measure up is an unrecognized form of political cowardice.

The teachers who have no books to teach reading and the students who have no pencils and paper for math will not suddenly be able to improve performance without those supplies. To punish them when they continue to fail to meet standards will allow politicians to proclaim their toughness and their insistence on quality, acting as though this empty rhetorical triumph can be equated with a good-faith reform effort. The technical standards movement, which insists that high-stakes testing will automatically bring quality, is a fraud designed to produce political capital.

Moreover, the type of standards being promoted, based on retention and regurgitation, supports the kind of schools that will continue to nurture obedience and docility rather than a critical, questioning disposition. And the theme of authoritarian control and obedience will bring with it the "Love it or leave it" notion of patriotism. Any system of rote memorization casts the teacher as an unquestionable authority and the student as a silent, obedient listener. Only the authority can know the right answer, and students must always defer to those who know better. Rather than learning how to formulate good judgment, students learn to doubt their own thinking, to routinely consider themselves naïve in the face of authority. This mental disposition lingers in citizens who are disposed to support any scheme government might propose, assuming that government experts know best what everyone should think about an issue.

Thus, technical standards cultivate dependence on authority. In direct contrast, standards of complexity stress critical thinking and autonomy. They encourage students to question any official representation of knowledge and to ask "Whose 'truth' is this? Who benefits from this version of the truth? Who is disadvantaged by it?" Proponents of complexity argue against tests involving right/wrong answers because they distort and oversimplify the world and undermine personal autonomy. A technical curriculum cheats students of the opportunity to learn to think for themselves and is much more likely to lead to a herd mentality than to the intelligence and independence required to ask hard questions. Every issue comes down to identifying who is "right" and every question is answered with: "If you're not with us, then you're against us"—a climate that inhibits honest discussion of difficult issues.

Nor are sanitized texts and reliance on authority the only elements of a standardized curriculum that promote mindless conformity and inhibit independent thinking. The imposition of

standardized tests also curtails the possibility of independent and creative thinking. Because the test always looms around the corner, teachers are unlikely to explore avenues of curiosity with their students. "Is there another way to solve this kind of problem?" a student might ask. "It doesn't matter—you know one way, and that's enough for the test. We have to move on," a teacher might be forced to answer, given the overwhelming content and relentless clock-ticking that standards bring. "Can we go to the museum and *see* these paintings?" "No, there's no time. You know the titles and artists; that's enough for the test."

In this high-stakes environment, what is important in the classroom becomes whatever is important to those who have structured the tests and, through them, the classroom activity. The more challenging the curriculum (which is to say, the more inclusive the curriculum), the less space there is for teachers and students to bring in their own curiosity, interests, experiences, and concerns. There is room to focus only on the "facts" imposed upon them by politicians and business people outside the classroom. Far from strongholds of democratic activity, schools serving uncritical technical standards will remain mind-numbing factories shaping citizens in the habits of believing and doing what they are told without question. Students will learn to sacrifice their own curiosity and interests to the standardization imposed by one-size-fits-all, factual testing, designed by "experts" far removed from any classroom.

In addition to cultivating docility, technical standards also support the political agenda of the established elite by helping to maintain the myth of meritocracy. Of course, given the incredible disparity in resources, not all students will succeed. However, since poor students are those most likely to fail, this inequality is not a problem—from a political perspective. Someone has to work in fast food places, and someone has to sweep the streets. Someone has to take the blame for being lazy and stupid in order to provide some excuse for the dismal failures that poor schools will always have until funding inequities and other social injustices are resolved. But politically speaking, the continued failure of the poor is not an issue, especially since they are less likely to vote than the affluent and certainly will not be making large contributions to campaign funds. It's the middle class who must go to college and provide human capital for industry, and the more they're conditioned to do as they're told, the better.

What is important is only that schools continue to *appear* to offer all children an equal chance to succeed. If that appearance can be maintained, then the myth of American meritocracy can continue, along with the comfort of those who are well established in the current economy. Smug citizens living in upscale communities can reassure themselves not only that they've earned what they have but also that others can do the same if they just work hard enough in school, if they just apply themselves to the standards. If this false notion is perpetrated and

maintained, the public discourse will not have to admit the absurdity of asking students to work harder at reading when they have no books or asking them to master technology when they have no computers.

The reality that the poor will very likely continue to fail actually makes it imperative for schools to continue nurturing the traditional definition of patriotism as uncritical acceptance of whatever government does. Were citizens taught to critically question current conditions, suddenly there might be significant challenges to the existing unjust and elitist structures now in place. This, of course, would be a threat to the status quo. So it is not surprising that mindless patriotism is promoted not only by sanitized history books and the installation of teacher as ultimate authority but also by several other essentially meaningless trappings common in public schools. Pledging allegiance to the flag and praising former presidents are easy routines to carry out, as is the establishment of a student government. None of these, however, provide meaningful lessons and experiences in genuinely democratic citizenship. Like the rhetoric of standards, the rhetoric and rituals of public schools regarding democratic education are surface gestures lacking substance.

For example, student government leaders are often elected on the same grounds as public officials: charisma, eloquence, looks, and promises. These qualities are enough, and the student body is not encouraged to check later performance against earlier promises, as voters so rarely do in their communities. Nor does the student government have any real power; to learn this, student leaders need only try to effect substantive change in school policy. In fact, schools are among the most antidemocratic institutions imaginable. Students do not have freedom of speech or movement and precious little choice in any number of areas, ranging from where they may eat to when they may, and it is much easier and more comfortable for the powerful to praise democracy than to practice it.

To develop an active, critically questioning democratic citizenry would require very different standards, the kind promoted in these pages. Mass memorization would have to give way to diversity and creativity. What authorities think and the solutions to problems they provide would need to become far less important than the thoughts and solutions of students themselves. The most important thing would be not *the* answer to a problem, but the ability to depict how different solutions might be more or less appealing when examined from different perspectives, how different options offer greater or lesser advantages to various stakeholders.

For example, a current political and economic problem is the insistence of Native Americans that much of their land be returned to them. From a Native American perspective, this is a just solution because for decades tribes have been confined to the most arid and unproductive land in the country after the richest lands were seized

from them. But the Black owners of a bed-and-breakfast property on land in dispute might see that solution as punishment for the crimes of others they have no connection to and never benefited from. From their perspective, such mandatory payment for crimes committed by others simply multiplies the original injustice. Both of these perspectives have merit; neither can be judged simply right or wrong. When we insist that students function in a limited world of yes/no and right/wrong answers, we give them no grounds for decisions except the rhetoric of authorities. Instead, we should be helping students learn to enjoy the hard thinking needed to untangle complex issues.

Of course, the votes of citizens who thoughtlessly follow the most persuasive speaker are easily won by politicians offering incredibly simplistic answers to complex problems—as in the case of those who promote technical standards as a reasonable cure for a problem largely caused by decades of political, economic, and social neglect of vast numbers of America's children. This is why the technical standards movement has such great political currency. Outside the educational community, few citizens are asking the hard question: "How is simply telling teachers and students that these tests *must* be passed going to magically make everything in schools better, especially in cases where the problem is lack of money rather than lack of will?" Schools have not educated people to ask such questions; they've been too busy promoting respect for authority and political heroes.

So wishful thinking and blustery threats have seduced an uncritical public into thinking that technical standards are the answer. However, if they were the answer, if we could change outcomes simply by telling people they must do better or they'll be punished, we would long ago have remedied not only poor education but also car accidents, rude behavior, maybe even bad cooking. Simply wishing and threatening, however, is never going to make anything so.

Implicit Social Goals

As is evident from the above discussion, schools focusing on routine and memorization—a tradition reinforced by the technical standards movement—value and reward such personal characteristics as obedience and respect for authority. These characteristics are valued not only by school officials trying to ensure "coverage" of mandated curricula but also by parents, mainstream religious leaders, police forces, and the military, all for a variety of reasons of their own.

During the activist decade of the 1960s, when young people challenged the government and defied police, government, and military authorities, public schools and universities were harshly criticized for tolerating dissent among the young. Schools were too permissive, it was argued, and they needed to do more to keep students in line. Student activism demonstrated

an uncomfortable social reality: an activist citizenry tends to be disruptive and challenging, an ever-present threat to those comfortably in power. Therefore, under the guise of pursuing a civilized and mannered society, schools reinforced the traditional rigorous control over students, teaching them to "go along" with teachers, and by implication all authorities, in order to "get along."

In the 1990s, a terrible spate of student violence gave conservative religious leaders an excuse to raise again the issue of school prayer, which the Supreme Court has now judged unconstitutional several times. It also gave parents and administrators an excuse to argue that schools need to be still more controlling of student bodies and minds, so that backpacks, the color black, and raincoats became marks of the student "outlaw." The fact that the violence was completely unexpected from the view of parents and authorities suggests that an explanation for such behavior must involve factors more complex than "There is no public prayer in schools" or "Schools don't monitor the clothing and belongings of students rigorously enough." Again, easy answers serving private agendas are substituted for thoughtful analysis that might look into messy social issues and difficult questions, like what kind of social climate might produce more students who value neither their own lives nor the lives of others?

It seems specious to argue that school prayer and stricter dress codes will cure student violence, but those actions fit the agenda of many conservative religious leaders and parents. The obvious benefit for these groups is that any measure that further conditions students to be controlled by authorities will make it easier for them as authority figures to exercise control in other areas. Beyond that benefit, however, such arguments also promote the cause of those religious citizens who would like to realize their goal of mandatory school prayer, and they also promise relief to those parents who would like nothing better than to delegate responsibility for taking a stance against purple hair and black T-shirts, transferring the contentious negotiation of teenage autonomy from the dinner table to the principal's office. Meanwhile, many school personnel, enculturated to believe that their job is to control students, cannot tolerate any student expression of individuality. They therefore welcome any opportunity to tighten school control over students and support any measure that increases control and decreases expressions of individuality. Technical standards fit that bill.

In addition to promoting conformity and submission as characteristics of good behavior, the standards movement also reinforces the idea that "winning" is a social imperative. Students learn competition as early as kindergarten and first grade, when good performance is rewarded with the "pay" of a gold star or another sticker and poor performance is punished by the lack of reward. The "win-

ners" run home to their loved ones in happy excitement, with little thought to what their triumph costs the "losers." Shamed, the "losers" slouch home, offering their best efforts to their families, not with pride, but with apologies for not being "as good as" the others.

In this way children learn that they are not really created equal. By the age of five or six, some children begin learning in school that they just don't have whatever it takes to shine. Although we don't punish a five-year-old who wears size four or size eight clothing, we pretend that it is reasonable to expect all children to master exactly the same skills to exactly the same level in exactly the same order at exactly the same time. The mania for grading and assessing leads to confident proclamations about which children are "ahead" and which are "behind" in the race—and sadly, both they and their parents believe us.

Standardized testing will take such competitions and perceptions to new heights (or depths), as school officials bully students and teachers into pursuing higher and higher scores lest they lose funding, staff, and control. In the end, schools will have taught students that community life is a race, where everyone needs to run as hard as they can toward the same goals (set by others) and without a thought for those who fall behind. If they lose that race, they should either blame themselves for not trying hard enough or learn to accept that they don't have the right stuff to be successful.

In a society where unequal educational opportunity rigs the race against poor children, social stability and peace is more likely if winners and losers *both* perceive the race as fair. As in the hidden political agenda of technical standards, the social agenda values the appearance of fairness much more than actual fairness. Moreover, the notion of life as a race and material success as the reward of the "winner" prepares just the kind of person capitalist society needs: self-interested, competitive, and avaricious. Rather than improving life for those most in need, the technical standards movement will reinforce not only the status quo but also America's rampant "blame the victim" mentality. Its insistence on competition as a behavioral norm, rather than compassion and cooperation, will sustain the existing society that can calmly turn a blind eye to poor children who lack sufficient food and medical care as well as adequate educational opportunity.

Moreover, content standards offer those who support the status quo more leverage to force into and out of the curriculum any material they want for any element of their own agendas. Support for technical standards often appears in the rhetoric of the back-to-basics crowd, who argue, rightly, that too many children leave school without good reading, writing, and math skills and with little or no sense of history and geography. In the name of rigor, technical standards proponents argue that an appropriate remedy is to identify and test a "challenging" curriculum, and they boast, simplistically, that they have done just that—as if

asking students to name the dates that Grover Cleveland served as president were the same as providing a quality education.

Interestingly, the more "challenging" the curriculum and test, the more support for existing divisions of races, ethnicities, and social classes we can predict. Does anyone expect that recognizing the massacre at Sand Creek, an example of genocide perpetrated by the U.S. military against Native Americans, is likely to appear on a "challenging" test when American schools have, for decades, presented history as the memorization of endless (white and male) names and battle dates? Wouldn't putting that item on a standardized test be likely to challenge many of the mainstream politicians calling for new curricula? Can any of these curricular experts name the date when the United States told the newly independent Puerto Rico that no, we weren't going to let it be independent after all? Can they name the forms of "Americanization" forced on Puerto Rican teachers and schools in the face of clamorous protest of professional educators and native students?

Perhaps the first thing worth noting here is that there's little merit to support the kinds of boasts people make about the goal of "expert" and "challenging" curricula. Venerating content standards as indicators of valuable rigor is downright silly because any subject expert can easily design a body of detailed factual content that would take more than twelve years to master. How long, for example, might it take to force children to memorize the names of all of the world's large rivers, or even all the rivers in the United States—any of which a standards writer could decide is an element of "basic geographic literacy"? How long would it take to learn to pronounce and spell *Susquehanna* and *Monongahela?* The possibilities for prescribing facts are endless.

Standards designers in Pennsylvania, for example, went so far into academic esoterica as to claim that the term *virgule* is a "basic" and to boast that every child would have to learn its definition because it had been included in the state's standards. I am not making this up. How many readers of this text—holding how many degrees from how many institutions—have managed to thrive economically and socially without knowing that *virgule* is the technical name for a diagonal slash (as in and/or)? And how many of us use the virgule correctly, daily, without knowing its name? But from a standards perspective, the more obscure the content, the more "challenging" the test, and so the more serious the reform. Those of us unimpressed by elitist snobbery answer simply "Oh, *please*. Go try out for *Jeopardy*" because that's the only place where such trivia has a chance of doing anyone any good.

What are the social implications of elevating esoterica to the status of the academically essential? First, it will reinforce the country's existing, if everywhere denied, class system. Any attempt to name the specific things "everyone" should know makes it that much easier to sort people by class

background. It is difficult to remember things we don't relate to, or things that have strong cultural definitions for us that are at odds with more academic definitions.

Imagine, for example, the possible difference in responses between poor Southern children and rich Northern children when asked something like "Is *poke* a noun or a verb?" Of course, multiple choice tests are not in the habit of allowing for cultural influence over answers and they themselves are steeped in mainstream culture, and so they would likely have no qualm about designating *verb* as the official right answer—because they said so, and student experience be damned. Never having eaten or picked poke greens themselves, test makers might simply assume that any student's alternate life experiences would be irrelevant.

As always, test makers pretend that the words in a test have only the meaning the test makers decide they have, that context and culture do not affect communication, and that linguistic experience has no influence on test results. These assumptions, absurd though they are, thus allow for the sorting of students into categories, both in school and in conversation, that correspond strikingly to socioeconomic status. ("Do you have a nanny?" "Oh, sure, and she eats more tin cans than any goat we ever had.")

Children from the middle class and upward who will be forced by parents to accept the need to learn any silliness set before them will, as always, toss this esoterica out in conversations with new people to signal they're in the club of winners. As a would-be English teacher undergraduate, I asked my professors what justification I might give my students for having to read John Milton. I was told—and I know many readers will recognize this experience—"Tell them *Paradise Lost* might come up at a cocktail party sometime, and they won't want to look stupid." Twenty years later, my own well-bred masters students in English education at an Ivy League graduate school thought the cocktail party rationale a fine rationale indeed, and they were sometimes foolish enough to share it with some of the poorest children in New York City. Unfortunately, while I was busy arguing against such a severely limited, undemocratic, and stupid rationale for teaching English in a New York classroom, Pennsylvania policy makers were hiring folks who thought along these same lines to design their vaunted standards.

Poor children, meanwhile, who may have to struggle to master addition and subtraction without pencils and paper for practice, may well challenge a teacher who tries to shove useless factoids into their heads. Such children might themselves offer the best criticism of the technical standards movement with questions like "Well, how is knowin' that gonna help me keep the man at the store from cheatin' my gramma on her change?" or "How is knowin' that gonna help me take good care of my little brothers?" From a technical standards perspective, education is not about offering individual students skills and

information to improve their lives; it is about keeping a national template of *the successful American* alive and well and about making sure that those who don't fit, who don't belong, are kept in their places.

The esoteric core curriculum approach has another appeal for conservatives: If the curriculum is stuffed full of the names of rivers and Latin terms, "frills" can be shoved out of schools without political messiness. The argument against teaching about constitutionally protected rights like abortion and free speech is a politically messy business, but few would challenge the assertion that "We have to see that our children learn the basics and that schools stop trying to teach everything under the sun. Schools have to stop trying to enforce social engineering and let parents handle their children's character education." It becomes easy for conservatives to argue against any topic they don't like, to lace up the mental and physical straight jackets that technical standards impose.

Once they are established as the arbiters of what is and what isn't "basic" and important enough to be included in a core curriculum, conservatives can easily sacrifice anything they want by arguing that children don't need it or by stuffing the curriculum so full of facts that there's no room for anything else. In such cases, it's interesting that the subjects sacrificed are generally ones that rich children will surely experience anyway and that poor children are highly unlikely to experience: art, music, dance, theater. Since the arts often lead the way in challenging existing social practices, it is best to exclude the poor from them, to shield them from such works as *Big River* (starring Huck Finn, independent poor teen extraordinaire) or *Sarafina* (dramatizing the political and racist murder of children in South Africa). Keeping the poor and even the middle class who lack real economic and social power away from such works helps promote a more peaceful society. It helps ensure that the disenfranchised don't start asking nasty questions about why American society follows its social leaders so uncritically, or why American universities and businesses continue commerce with countries steeped in human injustice.

The United States can afford to allow the rich, those who can spare seventy-five dollars for a theater ticket, to speculate on such issues because in general, their own financial interest can be counted on to stop them from going further than intellectual discussion. It's easy to decry exploitation, but pursuing justice at the cost of one's own pocketbook is another matter entirely, as politicians and power brokers well know. The reaction of the poor might be very different, however, because they have little to lose and much to gain by challenging existing practices. Therefore, exposing that segment of the population to art and its philosophical questioning is a much riskier business—one best avoided.

Besides, the language of art offers still one more tool for discriminating among classes. Anyone who can't respond to a question about the last play

they've seen or the last classical concert they've attended is readily identified as a loser, and safely ignored. Nor can this truth be undone by the argument that many schools take their students, rich and poor alike, to the theater something like once a year. The very extraordinariness of the event for poor children signals to them that they are receiving a favor, a treat, and makes it clear that no one expects theater attendance to be routine for them. Further, the diminished art curricula at school will not be able to signal to them that the arts should be part of their everyday lives, to motivate them to learn about free exhibits and concerts and to take advantage of them.

Of course, the majority of society routinely generates its own art, since art is indeed a normal part of the human experience, but the established social arbiters name it "popular art" and dismiss it with a wave of their well-manicured hands. If an artistic work doesn't come from the few they've sanctified, then it can't truly be art. Anyone who genuinely believes that the arts community in the United States is untainted by ethnocentrism might consider why it took decades for anything written by women and minorities to appear in high school anthologies.

Ironically, while art and its challenges are being excluded from the experience of the lower classes, it is being co-opted by corporations. These days, more and more art is found in the offices of major corporations, which also plaster their names all over the concert and theater programs handed to their wealthy patrons. As business executives associate themselves with politicians to shape curricular content, they also associate themselves with the social elite in a community, those citizens most likely to serve on the boards of upper-class arts organizations and to be in the audience at events. If any art is deemed appropriate for more general public consumption, some corporation will let us know by sponsoring a free public exhibit or making a donation to a museum. Meanwhile, the social elite is joined by the corporate elite in the sponsorship and "appreciation" of cultural events. The lower classes, neither knowledgeable about scholarly art studies nor offered any signal that art should be of interest to them as well, stay outside an arena where serious social criticism often finds voice.

Implicit Economic Goals

Because it seems obvious that today's children will one day need to find jobs, businesses have been increasingly insinuating themselves into the education arena. In fact, one of the most distressing characteristics of the technical standards movement is its unexamined assumption that business is a natural partner of education. To critics, it seems obvious that what is in the best interests of corporations is not necessarily in the best interests of the children being educated. Increasingly, schools and politicians are allowing businesses to provide blueprints for the high school and college

graduates they want to hire, and schools are rushing to fill the order for specified workers.

Why is no one stopping to ask what will happen if indeed all schools start to produce precisely the workers that businesses demand? Because we have already educated a docile and uncritical populace, for whom it seems self-evident that schools should enable students to find jobs when they graduate. But a more critical look at the assumption that schools should serve economic goals by producing a certain type of worker reveals other results that do *not* serve the best interests of either our students or our nation.

The most obvious result of a curricular focus on workforce training is that businesses would be blessed with a large, highly qualified pool of labor. Given laws of supply and demand, the logical consequence of this abundance would be extremely low wages. Multiple workers would be available to fill any existing job, and if one worker didn't accept an inadequate wage, another would.

This is precisely how schools and hospitals managed for decades to pay pittances to such professionals as teachers and nurses. "Teach girls to be teachers or nurses," schools were told, "and they'll find jobs." And that's what schools did, and some of the countless females so educated did accept wages at the level offered—because if they didn't, some other female would. Those professions are still trying to recover from decades of the devaluation of their profession allowed by an oversupply of well-educated labor. Only when special training is not in abundance must businesses pay well for the work of the people they refer to as "human capital."

Another advantage is that businesses will be spared the effort and expense of training workers for their own needs—schools will do it for them. What's more, they will do it in neighborhoods where business taxes have concurrently been slashed. Businesses will not locate in areas where they are not given significant tax breaks, and such breaks commonly mean freedom from having to offer substantive support to local school districts. The benefits to business are clear, but what about the worker?

What about the worker who is laid off, said to have no currently useful skills? Such workers expect decent wages in return for years of hard work and loyalty to the company, but it's far cheaper to hire a newly trained high school or college graduate than to re-educate a worker with enough seniority to demand a decent wage. New hires can be paid entry-level salaries, which can be forced downward when there is a large skilled labor pool to draw on. For the new worker, the entry-level salary is a "take it or leave it" proposition, so the jobs are sure to be filled by someone. From the corporate perspective, there is no need to worry about the workers set adrift in midlife.

It is no accident that labor unions have never been a big part of the public school curriculum, nor is information about unions likely to appear in the new standards curricula. Busi-

nesses want to be involved in education because education can supply them with legions of cheap workers, allowing the highest possible executive salaries and largest returns to stockholders. It is a farce to listen to corporate executives talk piously about their concern for children while concurrently, behind closed doors, they are driving hard bargains with politicians to be sure corporate school taxes are minimal, if they pay any at all.

Moreover, it is in the best interests of business for schools to nurture competitiveness in students and to cultivate the myth of meritocracy. Business benefits from the idea that the "winner" is the one with the most—first the most stars, then the most points, then the most money—and that "losers" are people not worth our concern because after all, they "could" have won, too.

And if winning is *the* most important social value, then any means used to win, like poisoning the land and lungs of the nation, can be ignored because paying attention to them threatens the financial health of the company. Critical attention to such issues also threatens workers, for whom whistle blowing is seen only as a lose-lose proposition. Either whistle blowers will be fired by bosses angry over the truth telling, or the company will be in financial trouble and they'll lose their jobs anyway. Better to keep quiet.

Here the school-nurtured habit of accepting the actions of authorities, of docile obedience, comes in handy from a business perspective. "We know best. Do as you're told. You don't need to think about what's important because we already know and did all the thinking that's necessary. You just do your job and let us do the rest."

Corporate executives and politicians, each for their own reasons, are in favor of technical standards, and between them they have created a climate where it is dangerous for anyone to oppose their liaison or their strategy. Alfie Cohen (1999) aptly describes the rhetorical dilemma created by politicians and power brokers and faced by standards opponents:

> Never underestimate the power of a catchy slogan and a false dichotomy. When a politician pronounces himself a supported of "law and order" or "a strong defense," you may protest that it's not that simple, but even as you start to explain why, you've already been dismissed as soft on crime or unwilling to defend Our Way of Life. . . . Not only public officials but business groups and many journalists have played a role in reducing the available options to two: Either you're in favor of higher standards or you are presumably content with lower standards. Choose one. (pp. 88, 52)

The manufactured union between businesses and politicians in support of educational standards and the resulting dichotomy they've promoted provides both groups with a win-win situation. Politicians win votes because standards appear to be an easy fix for education. Businesses win by gaining a cost-free oversupply of

workers trained to their specifications. Of course, both groups also have the added incentive of being able to denounce opponents as being against "better" education. Only kids lose—but their welfare is not and never has been the point of nonexperts who want to use the schools for their own ends.

Finally, among the corporate groups with an economic stake in technical standards is one worth mentioning individually: publishers of textbooks and exams. Textbooks are economically viable only when they can be sold in large numbers, and that can happen only when there is extensive agreement on what the content of a specific course and subject should be. If every teacher began using primary sources and individually selected materials, there would be an insufficient market for textbooks. But if curriculum is determined by technical standards and high-stakes testing, then the textbook company simply designs books that "cover" the test material.

Further, if there is going to be high-stakes testing, it is far easier and at least superficially more defensible for states to delegate test design to psychometricians and their ilk, the patrons of scan sheets. Standardized testing is already a gold mine for the educational publishing field, and more testing means more revenue for them. Certainly their economic interest lies with technical standards, with its emphasis on standardization and right/wrong answers. The profit factor certainly colors their claims to provide objectivity and reliability and to help in the pursuit of educational interest—colors it, as a matter of fact, greedy green.

Answering the Critics of Complexity

I have offered a harsh picture of where the technical standards movement will take us: toward greater intellectual conformity, greater docility and deference to authority, a "love it or leave it" definition of patriotism, less security and lower wages for workers, greater profits at less expense for corporate officers and stockholders, and still clearer demarcation between the "haves" and the "have-nots." Critics of the call for a more critical and democratic version of school standards offer their own portrait of proponents of complexity: Softheaded and softhearted, unable to differentiate between the importance of a cultural artifact like a kachina and a cultural hero like John F. Kennedy, unable to discriminate between knowing something true and knowing nothing at all. We are relativists, they argue, guilty of devaluing everything by valuing nothing at all.

These are convenient criticisms, but totally unjustified. The point is not whether those of us arguing for critical standards believe that 2 + 1 + 1 = 4, or whether we believe that children should be familiar with such math facts—clearly we do. But we also think it's important to know that the meaning of such "facts" changes as the context changes. In the case of this simple addition fact, for example, we

note that those numbers can take on different meanings outside the world of academic concepts. In the context of today's families, for example, 2 + 1 + 1 can be said to equal 1, as when two grandparents move in with one widowed mom and one child, transforming the four people involved into *one* family who share expenses, responsibilities, lives, and love.

Everything hinges on context, on the meaning that someone is trying to make with words and numbers and historical narratives. Facts by themselves are meaningless. The Declaration of Independence was first signed in 1776. That's a fact. But what does it mean? Does it mean that 1776 is the year that colonists decided to fight for liberty and human dignity? Or does the meaning shift if we refine the factual description of the event, noting that 1776 marks the year when colonists decided to fight for the liberty and human dignity and riches of white, male landowners? In the world of fact-driven content, history trivia like dates, places, and the names of generals keeps students busy trying to pass tests; there's neither time nor inclination to nurture their understanding of historical events as the result of the complex interplay of a constellation of factors.

In contrast, rather than settling for memorized but sterile facts, the critical standards movement calls for standards that encourage students to look beyond facts themselves in an attempt to understand how and why multiple interpretations can be imposed upon them. This means, for example, recognizing the existence of many populations in the United States, not just those with the most money or prestige. It means valuing understanding, rather than winning, as the proper goal of an education. It means sorting out the many factors that keep generations of the same families in poverty, giving up the easier, knee-jerk "blame the victim" response. It means, in short, developing a truly democratic and truly rigorous mind-set that places social justice alongside economic prosperity as a social goal for all Americans.

It is true that in this sort of system, all students would not learn the same content—the name of every river in the United States, for example. Instead, they might learn about a river near their homes, about how it influenced settlement and commerce, about how and why towns developed as they did in its vicinity, about battles it may have caused, about strategic benefits it brought during wartime. Instead of knowing the names of rivers and how to spell them, students would learn instead that water resources need to be understood if one is to understand the history and evolution of any area and its people.

Knowing names prepares students to take a multiple-choice test and little, if anything, else. In contrast, understanding the influence of one river in one place prepares students to ask and answer intelligent, complex questions—in an essay, for instance—about a geographical area they want or

need to understand. The first sort of test confines students intellectually to the world of the school. The second type equips them for making sense of the world at large. Which is the more rigorous and desirable education, especially for a democratic citizenry?

Proponents of critical standards want to nurture students who become comfortable with complexity and adept at exploring multiple solutions to a problem, students who become immune to the empty promises of bombastic rhetoric. Of course students need to be skilled in math, language, and the functioning of democracy, and of course they need to be familiar with historical events and figures. They must have information—this is agreed. But the amount of information they have must be considered secondary to their understanding of information as a tool that can be used to benefit specific groups or individuals. They must understand that one set of facts may make a person seem heroic while a different set of facts casts the very same person as demonic. Today Joan of Arc is St. Joan. How is it, then, that she was burned at the stake as a witch? In an educational environment that stresses the need to deal with complexity, meaning making always takes precedence over coverage, and students must know not only what the facts are but *whose* version of reality they represent.

What type of citizen would come from schools pursuing standards of complexity? In contrast to the unquestioning citizens and workers produced by technical standards, these schools would nurture active citizens and critical workers. They would nurture citizens able to read and listen to political rhetoric thoughtfully, able to ask candidates hard questions like "How exactly do you plan to fulfill that campaign promise? How exactly do you plan to get such legislation in place, since both houses of your legislature have repeatedly killed similar bills every year for the last five years? What has changed that makes you think you can deliver on this promise?" Such citizens would have political memory and, as a result, they would consistently withdraw support for politicians who failed to deliver on campaign promises. They would ask not only about the benefits of a proposed government action but also about who exactly would receive those benefits as well as who might be hurt by the change, and to what extent.

Anyone who chooses to support educational standards needs to understand that different types of standards are being proposed, and that their support of one standards proposal over another translates to support for one kind of school over another, and one political, social, and economic agenda over another. Their support of one version of standards over another will also affect the type of citizen who lives next door, who votes in elections, who works for corporations. There is good reason to think carefully and choose well. The stakes are far too high to assume that all standard movements are created equal, or that what's

good for business and politics is good for America.

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THE TROUBLE WITH KNOWING

Standards of Complexity and Sexual Orientation

Erik Malewski

We as teachers have a responsibility to bring the world our students will have to confront—are already confronting—into our classrooms. Anything less than that is professionally and morally irresponsible.

—Marvin Hoffman
"Teaching Torch Song:
Gay Literature in the Classroom"

This article builds on a simple yet profound statement from the 1894 poem "Two Loves" by Alfred Lord Douglas in which he shares his story of the "sin that dare not speak its name." This description reminds me that all in the world is not easily interpreted, understood, or accepted. Those things we do not understand or those elements of life that are known to be off-limits often trouble us; what I am thinking about here are ideas that fall outside of what "good" people think and express. For example, I will always remember my discussions of Native American "two-spirit people" with my fellow educators. During my presentations I explain that in certain tribal cultures, men and women that crossed traditional gender roles, known as two-spirit people, were often honored as gifted individuals and were given a privileged place within the community. While we might want to think of these people as crossing from one gender to the other, Native Americans believed that two-spirit people were neither the masculine or feminine gender we commonly think of but the embodiment of both.

Unlike western European cultures, traditional Native American cultures defined humans through their spiritual makeup rather than physical anatomy. This rather unrestrictive notion of self in relation to others meant that two-spirit people could perform a much larger range of tasks within the community, based on their self-concept rather than their physical embodiment. Two-spirit men would accompany the other men during times of battle and exploration and perform

many of the traditional masculine and feminine roles for the community of men, from intimate companionship to food preparation (see Roscoe, 1998). How might we learn from the inclusive traditions of other cultures so that we might lessen the violence in our own?

To my amazement, the logic behind the role of two-spirit people does not, in my experience, placate the visceral reaction of teachers as they consider same-gender sexual activity. Whenever I tell this story, many teachers look at me with a blank face while others give me a look of disgust. My point here is not to make judgments about teachers, other ways of living, or our own sexual activities. My purpose is much more than to discuss any of these aspects alone since discussing all of these social practices and more will be required for a queer pedagogy that informs a standard of complexity. I want to suggest that in the structure of our ideas, officially sanctioned forms of thought have the ability to hide other ways of knowing that might lead us to a fuller and richer way of life. Instead of chastising that which we do not understand, I hope to illustrate how standards of complexity reveal the importance of pedagogical endeavors that search traditional forms of knowledge for hidden thought and alternative points of view. It is our job as educators and problem detectors to expose our students to multiple forms of knowing.

While our understanding of knowledge has changed drastically with the advent of "hyperreality" and information technology (Steinberg & Kincheloe, 1997), we most often teach as if youth come to us with an absence of knowledge—a void which needs to be filled with the sanctioned knowledge of our educational system. When we teach within this framework, we fail to recognize that knowledge is not innocent but deeply embedded in a classification process wherein what we see is only part of the full picture. I want to suggest that when we develop curriculums, what is discarded is not simply left out but rather supports sanctioned knowledge through its absence. When we teach about historical leaders, for example, we often leave out the stories of the common people of the time, and this exclusion illustrates the value we place on individual achievements over community life.

We must always keep in mind that our decisions about what to teach and how to teach are a reflection of our own values and the values of our culture. This is what a queer pedagogy illuminates through interrogation. Rather than thinking of pedagogy as an act of imparting information to those who have no knowledge, this framework helps us reconsider the relationship between pedagogy and knowledge. If knowledge is a complex and competing nexus of thoughts and ideas where approved conceptions are structured by those we do not speak of, then pedagogy might be less about imparting facts than about detecting the problems with dominant systems of knowledge and truisms as they are normally presented.

As an example of this pedagogical

issue, I offer the discourse used in the debate over national and state educational standards. The traditional logic used to justify standardized testing is founded upon the perceived need for students to be able to memorize and repeat factual information that is closely tied to skill-building and workforce preparation. While few question that vocational knowledge is important, little attention is paid to the important elements of life that cannot be measured with a multiple-choice test. Standardized tests offer little space for pondering our life's purpose or for developing creative solutions to present-day problems. At this time in the history of the United States, when the divide between the rich and the poor is deepening and there is an all-time low in voter turnout, might it be important for students to be able to collectively dream of a more egalitarian democratic state? A queer pedagogy offers ways to confound traditional classification systems with the hope that new and uncertain categories will offer further insight into socially responsible education.

Troubled by Desire

I am interested in the trouble with knowing. Remarkably, many educators feel significant discomfort when they enter domains of thought that fall outside the sanctioned curriculum. In my daily conversations with other educators, the rather ordinary question "what do you teach?" brings silence when I tell others I educate undergraduates on the lives of gays and lesbians through peer academic programs. My response occasionally elicits an elated response from a supporter of queer issues, but most often sharing my life's work produces an awkward silence followed by questions about how this work in sexuality education fits into my own program of graduate study in curriculum. These inquiries seem to indicate that in the life of educators, the work of queer persons and theory involving sexuality is somehow severed from pedagogical thought.

As bell hooks suggests, we rarely speak of the place of sexuality and Eros in our classrooms and, consequently, in pedagogical theory; we have been trained within the context of Western dualistic thought where mind, body, and spirit are split into three separate but contiguous zones. When we enter the classroom, we educate as if only the mind is present, not the body and spirit (1994, p. 191). I maintain that to ignore the role of the soul, desire, and the body in our pedagogical thought is to collude with conservative standards that fail to recognize the relationships between effective teaching and the desire to learn—to make learning relevant to a meaningful life.

If desire is based in experience and experience comes through the body, then standards must contextualize curriculum and pedagogy in the local culture of the school. A poor Native American student in a reservation setting will have a vastly different system of meaning than a wealthy white suburban student. Standards must resist the urge to erase differences through

statewide examinations that fail to account for students' class, ethnicity, race, gender, and region. To invoke a passion for learning, we must teach through students' experiences since this is the location from which connections can be made between knowledge, a passion for justice, and the betterment of one's self and community.

Standards of complexity must recognize and locate desire at the core of our motivation to learn and our ability to make a life that is worth living. All too often, the classroom becomes a site where the linkages between desire, affect, and pedagogy are ignored in an effort to suppress those elements of life that make us human. When considering pedagogical standards, educators might ask a series of questions: What role does libidinal energy play in learning and teaching? How does curriculum that includes discussion of queer issues impact those who identify as heterosexual? When considering educational standards, how can queer theory confound traditional pedagogy in ways that allow for organizing around difference, contextual learning, and the possibility of uncertain thought in the classroom?

The Machine Metaphor

Before pondering Eros and desire within pedagogy, it is important to consider why these discussions are so rare in Western culture. What has happened to disembody pedagogy from its connections to the body and spirit? One way to answer this question is to explore the foundations of Cartesian-Newtonian thought and its saturation of our contemporary logic.

Traditional pedagogy and curriculums are locked into thought that claims that what is knowable is limited to that which we can know empirically—that which is tangible, observable, and measurable. Curriculums are often based on the assumption that we must show how humankind has controlled and manipulated the world and how this has affected human thought and the environment through causal relationships. As we seek to measure discrete bits of evidence and add up the results, whether in physics, social studies, or economics, something is lost in the process. The parts become worth more than the whole. As we study elements in isolation, we find what Joe Kincheloe calls "things-in-themselves" instead of "things-in-relation," and this impedes an understanding of our place in connection with the world (see Moving Beyond Cognitive Formalism).

Take, for example, the work of British scientist Isaac Newton and the legendary epiphany whereby he came to understand gravity with the drop of an apple from a tree. With this amazing insight, he began to formulate the laws of motion for all matter as it is influenced by gravity (Capra, 1983, p. 63). These laws have been used to develop the dominant view of the universe and all that is valued in the world. In this view, anything that matters—that which is observable—can be understood through the interaction

of particles. This system of thought is very enticing because it brings with it the belief that the world can be understood and controlled if we can understand the relationship between each of its parts in an elaborate system of cause and effect (see Kincheloe, Steinberg, & Tippins, 1999). The problem arises when we focus so much on isolating elements that we lose track of things that happen through relations.

As an alternative, standards of complexity demand that we consider the study of associations between things to be just as important as the study of things-in-themselves. For example, when we teach economics we must do more than illustrate the laws of supply and demand and explain the operations of the stock market. Students need to understand how global economics and the processes of building capital shape the lives of people around the world. As companies search for the cheapest raw materials and human labor to build products that are then sold in other areas of the world where people can afford to buy these products, the inequalities that develop are often portrayed as natural elements of economic life. Yet these economic relationships produce very real benefit and suffering, very real pleasure and pain. A queer pedagogy disrupts belief systems that assume pain and pleasure have no source and demands that we search for their origins so that we might create a more just world. We must explain why so many people suffer on the production side of the process while those on the consumer and investment side benefit from the economic excesses of capitalist production. Economics is about more than dollars and cents, much as queer pedagogy is about more than the study of intimate human relationships. Within standards of complexity, queer pedagogy includes the study of the relationships produced through every social form and the pleasure and pain that come as a result of those relationships.

A queer pedagogy that focuses on the relations between things can help students ponder the ethical dimensions of economics and help them ask difficult questions about economic relationships, such as "Should corporations offer a decent standard of living?" Only when students begin to understand the production process behind the shirt they buy in the department store or the disposal process that follows their garbage can they see their connection to the larger world. It is through a focus on relationships that students understand larger complex macrosystems, their place within these systems, and the effect they have on the environment.

The metaphor of the body as machine is instructive here. In much the same way as Isaac Newton, French philosopher René Descartes contributed to the establishment of an isolating logic when he established the existence of a dualism between the mind *(res cogitans)* and matter *(res extensa)* (O'Sullivan, 1999, p. 86). As he developed his work, Descartes claimed that we can measure and describe the

physical world outside of the messiness of human influence. As Fritjof Capra explains:

> To Descartes the material universe was a machine and nothing but a machine. There was no purpose, life, or spirituality in matter. Nature worked according to mechanical laws and everything could be explained in terms of the arrangement and movement of its parts. The mechanical picture of nature became the dominant paradigm in science in the period following Descartes. . . . The whole elaboration of mechanistic science in the seventeenth, eighteenth, and nineteenth centuries, including Newton's grand synthesis, was but the development of the Cartesian idea. Descartes gave scientific thought its general framework—the view of nature as the perfect machine, governed by exact mathematical laws. (cited in O'Sullivan, 1999, p. 88)

My goal here is not to discount the contributions of these scientific thinkers but rather to suggest that this scientific discourse has had such an impact on pedagogical thought that other knowledge systems that incorporate the soul and its connection to the body have been lost to the metaphor of the human body as a machine. This cleaving of body from the soul, like the earlier separation of the male and female gender, has led to an almost complete reformation of Western consciousness (Highwater, 1997, p. 94). The Cartesian-Newtonian scientific model has affirmed that the mind is distinct from the flesh, much as the work of Sigmund Freud separated the psyche from the body.

The problem here is that this material logic is so confining that it leaves no room for those elements of life that exist as immaterial or extraordinary. There is no accounting for the messiness of emotion, personal thought, and the realm of the social. The result has been a normalizing value process that cannot account for the exceptions within society, such as two-spirit people, who at one time would have been considered sacred and enigmatic members of a community.

Scientific thought has mapped out the gender binary and the superiority of certain races, placed rationality above emotion, and justified white male patriarchy to the detriment of those people and ideas that fall outside of these dualistic categories. Odd elements of society that do not fit scientific classifications have been labeled perverse in an attempt to label and define good and bad within the universe. Through the exhaustive use of this logic, we have forgotten that associative ideas or the area of relation that exists between things cannot be defined empirically and must be explained through an exploration of perceptions or sometimes even dealt with by recognizing that we cannot know all the factors that influence our thought. Those people and ideas that fall outside the category of ordinary might be not a detriment to society but gifts that can assist us in making transgressions toward new and unusual ideas. We need to consider that strange and foreign emotions and de-

sires are an integral part of all human life that we can utilize to do good work and make connections to those people who seem most different from us.

Eros and the Desire for a Queer Pedagogy

If we consider Eros as more than simply the drive for physical pleasure, then we open new possibilities for a pedagogical standard. Teaching and learning might be about more than an orderly group of students, a good set of lesson plans, and rote examinations. As we consider pedagogy, we need to reflect on what motivates humans to act with compassion—what invokes a passion for learning, an interest in ideas, and the possibility for a more just society.

As we reinvent pedagogy within standards of complexity and ponder what drives us to want to learn, a discussion of either heterosexual or homosexual desire might seem restrictive since we all have the ability to form emotional, spiritual, and physical bonds with each other regardless of our physical anatomy. A binary logic based on either same or opposite gender attraction would be out of context if we universalize our belief that human beings are motivated by their passions regardless of orientation. This perspective is particularly helpful because it pushes us to think beyond the biological and social aspects of sexuality. We need not question whether sexuality is something learned within a social context (from either the balanced influence of both parents or an overbearing mother and absent father) and therefore something we can control through traditional family values or sodomy laws or whether it is something biological (determined by the makeup of DNA or the structure of the brain) and therefore immune to interventions such as the ex-gay "conversion" programs. Desire is simply an element of life.

Eve Sedgewick (1990) illustrates the benefits of this theory of universal desire by analyzing two different types of discourse: minoritizing and universalizing. A minoritizing discourse works within Western logic that tends to divide thought into parts in order to study its form with a more exact focus. In this framework, we might suppose that desire is located in the individual and therefore has a different form in the people of different social groups. For example, we have looked for the causes of homosexual desire in an overbearing parent, abnormal parenting practices, or alternative brain structures, reifying same-gender desire as different, the result of a malfunction or pathology, while there has been no analysis of the causes of heterosexuality. The values of our culture are such that the normalcy of heterosexuality goes unquestioned, as it is the accepted form of desire. This framework for knowledge functions in a fragmented way where the information gathered about a social group is limited and directly related only to those who embrace the identity, neglecting the elements of humanity common to all of us.

By explaining how minoritizing discourses function, Sedgewick suggests how inclusive curricular efforts fall short of confounding sexuality. Multicultural curriculums that provide a special day or other calendar event in order to explore the "other" in terms of race, class, gender, and sexual orientation reveal a lack of contextual understanding that problematizes the classification systems themselves. Instead of offering a discussion on how sexuality came to be understood as a binary between heterosexuals and homosexuals, inclusionary efforts often provide a carefully constructed psychological discourse: gays and lesbians are the victims of homophobia and heterosexuals are the victimizers, often reacting out of a fear of same-gender attraction (Britzman, 1995, p. 158).

The problem with this type of curriculum is that it leaves many psychological and social aspects unexplored. How does one learn to be homophobic? Is it possible that we all have same-gender attractions in some form? Is homophobic fear really irrational or, as A. Lipkin explains, is it possible that within our heterosexist culture the element of fear is actually nurtured: "[T]echnically a phobia is an irrational fear that causes one to avoid contact with its triggering stimulus. . . . But homophobia is not always irrational; it is often a logical outcome of one's own predicament and perceptions about homosexuality. Moreover, a dreadful number of homophobes, far from fleeing, actively pursue gays and lesbians for attack" (Lipkin, 1998, p. 45).

When we fail to explore the cultural practices that bring about homophobia as a rational response to same-gender attraction and instead maintain a psychologically based curriculum, then we fail to denaturalize the origins of the fear. We need to ask ourselves, what are the daily practices that shape conceptions of same-gender attraction as deviant? How can the uncertainty and discomfort that come with discussions of sexuality be employed as a teachable moment?

Minoritizing Discourses, Inclusionary Curriculums, and Comforting Queers

All too often, in an attempt to maintain comfort, curricular representations are sanitized of their deviant elements in an effort to assimilate images to acceptable heterosexual norms. Take, for example, Ellen Degeneres and her national "coming out" on the self-titled sitcom, *Ellen*, which has been used in classrooms to introduce sexual orientation issues. While there is a bedroom scene where Ellen deals with her attraction to women, the show goes to great lengths to show representations of gays and lesbian people that are humorous, easily digested, and unproblematic for most heterosexually identified people. In the final scene of one episode, a guest star mocks the idea that gay and lesbian people recruit by giving out toasters to reward queer people who have encouraged others to come out.

The point made by this is that people are either queer or straight.

No mention is made of the volatile nature of sexuality or the transitional character of the emotions that all people experience in their lives. Throughout the show, there are gay people and straight people and the divide between them is clear, concise, and static. These types of representations assume too much and expose too little, giving the impression that any community has correct and easily identifiable representations and that a stable and consistent boundary exists between heterosexuals and the "other." This kind of inclusionary curriculum also has the potential of backfiring in two ways: either through the creation of a narrow set of representations that exclude the diverse images of the people they claim to represent or through the exoticizing of gays and lesbians in such a way that heterosexually identified people enter the curriculum as voyeurs—using their newfound knowledge to reestablish the normalcy of straightness.

A standard of complexity demands that pedagogy confound binary notions of sexuality in ways that account for passion as a central element of learning. In a queer form, pedagogy destabilizes heterosexuality through the interrogation of its normalized status and demands that we question the borders that frame deviant and accepted forms of sexuality. Standards of complexity suggest that curriculums must do more than create a narrow space for select persons who represent all that is the "other." While these assimilationist efforts are justified by the hope that illustrations of gays and lesbians will be palatable to the masses, they do little to explore the complexities of various identities within human sexual expression, both in the queer community and in the heterosexually identified community. We must recognize that educational curriculums and structures are so deeply embedded with heterosexist practices that only through interrogating the processes that normalize heterosexuality can we show how odd it really is. A queer pedagogy goes to the heart of the problem by emphasizing a critical analysis of the very categorization sanctioned by our institutions.

Minoritizing Discourses, Inclusionary Curriculums, and Discomforting Heterosexualities

As we consider a queer pedagogy, we must remember that heterosexuality often comes across as the only stable form of sexuality. Ideal heterosexuals date during their high school and college years, find a compatible partner, marry, and produce offspring. These conceptions of heterosexuality are made more powerful in their repetition in media, government, and educational representations. What is interesting in this normalizing process is how often the very stability of heterosexuality relies upon the projection of deviance onto homosexuality and the tokenizing of heterosexual deviance to hide its own volatility (Warner, 1993, p. 233).

For example, while we might find entertainment in the drama of political figures who get caught cheating or

in television shows that portray the trauma of failing relationships, these are perfunctory moments that are most often set against the ideal American Dream that most of us believe we should attain. In other words, media, education, and government often highlight as exceptions to the rule the deviant elements of a dominant group, such as heterosexuals, while also highlighting deviant elements of a marginalized social group, such as gays and lesbians, and projecting the findings from this small segment of the population as characteristic of the entire community: all nonheterosexuals are immoral people.

This projection works in society to mask the complexity of deviance among all people and gives the illusion that deviance only exists among marginalized people. It works because there is a certain element of fear in revealing oneself as a member of a "deviant" community. Privilege comes to those who appear to be a part of the heterosexual community, but for anyone who cares to deviate from representations of the group as a coherent whole or to openly question their loyalty to heterosexism, there is a possible loss of privilege (Warner, 1993). The result is a strangely static representation of heterosexuality with aberrant representations offered as exceptions to the norm, while deviance remains at the core of representations of homosexuality.

Interestingly, inclusionary pedagogical and curricular efforts have attempted to remove the queerness from gays and lesbians while queer pedagogy has attempted to highlight the queerness in heterosexuals. A queer pedagogy, then, offers a critique of categories that are offered as stable, unifying, and authentic, with the understanding that in any attempt to contain something in order to understand it, something else is left out. Standards of complexity in teaching and learning engage us in a constant process of finding those forms of knowledge hidden from our purview in a world that is always uncertain, opaque, and contextual.

Curriculums, Universalizing Discourses, and Motivating Desires

A universalizing discourse is a more fruitful approach to queer pedagogy within standards of complexity and enables us to move beyond inclusionary curricular efforts. As D. Britzman explains, "A universalizing discourse assumes that anyone thinks from sexuality and finds ideas in the most unusual places, that sexuality is central and difficult for anyone, and that knowledge of sexuality is always somehow insufficient to its object, aim, pressure, and source" (Britzman, 2000, p. 36).

As educators, we might find the concepts presented above foreign and malignant to the educational structures in which we find ourselves. Sexuality is often reserved for the contested realm of health education while the rest of the curriculum remains explicitly antisexual in nature. Yet, this antisexual character is exactly what we

should want to reconsider if sexuality is central to one's life. If education is about more than rote memorization and standardized testing and if we value high-order thought and critical reflection over multiple-choice testing, then we need to explore how students develop the urge to engage ideas and the passion for pondering problems for which there are no easy solutions. For educators to think about the forces that bring students to engage knowledge might be just as important as the actual curricular content.

If we think about sexuality as that most passionate form of human relations, then it is possible to see how a classroom might be transformed based on the recognition of desire. We might want to facilitate open discussions where students engage the curriculum and the ideas espoused in a critical and reflexive manner. Through a dialogic approach, students can move beyond storing factual tidbits and begin the process of analyzing, critiquing, and constructing ideas. As M. Blasius suggests, we must realize that knowledge and understanding of oneself is made through relationships, not exclusively within oneself (1994, p. 139).

As we think of the relational aspects of pedagogy, we understand that we have to unlearn approaches to education that assume students have no experience and understanding of the world that would be of benefit to developing positive life pursuits. As educators, we have the ability to reshape student-teacher power dynamics and to expand our understanding of pedagogy to include recognition that, first and foremost, we are all human beings attempting to make it in the world. As Audre Lorde explains, Eros is passion for knowledge and for rewarding work in all our life pursuits. Educators can spur connections between desire and learning that extend far beyond the classroom, enveloping all aspects of life:

> The erotic functions for me in several ways, and the first is the power which comes from sharing deeply any pursuit with another person. The sharing of joy, whether physical, emotional, psychic, or intellectual, forms the bridge between the sharers which can be the basis for understanding much of what is not shared between them, and lessens the threat of their difference.
>
> Another important way in which the erotic connection functions is the open and fearless underlining of my capacity for joy. In the way my body stretches to music and opens into response, hearkening to its deepest rhythms, so every level upon which I sense also opens to the erotically satisfying experience, whether it is dancing, building a bookcase, writing a poem, examining an idea.
>
> That self-connection shared is a measure of the joy which I know myself to be capable of feeling, a reminder of my capacity for feeling. And that deep and irreplaceable knowledge of my capacity for joy comes to demand from all my life that it be lived within the knowledge that such satisfaction is possible and does not have to be called marriage, nor god, nor an afterlife.

> This is one reason why the erotic is so feared, and so often relegated to the bedroom alone, when it is recognized at all. For once we begin to feel deeply all the aspects of our lives, we begin to demand from ourselves and from our lives' pursuits that they feel in accordance with that joy which we know ourselves to be capable of. Our erotic knowledge empowers us, becomes a lens through which we scrutinize all aspects of our existence, forcing ourselves to evaluate those aspects honestly in terms of their relative meaning within our lives. (Lorde, 1978, p. 5).

As we reconsider desire and perceptions of a satisfying existence, we find that the very process of learning becomes as important as what we know. The unlearning and relearning processes in standards of complexity are equal in importance to the accumulation of a storehouse of factual knowledge. A powerful pedagogy transforms how we might conceive and live all aspects of our lives.

Civics

A queer pedagogy offers a divergent view of civics education that highlights the importance of standards of complexity. While there is no doubt that students must learn the structure and functions of the executive, legislative, and judicial branches of government as well as the legal processes, we must realize the pitfalls of blind nationalism. For students to engage in high-order thought, they must explore the way power relations and ethical standards shape the political culture and come to terms with the contradictions and multiple views held within the nation-state.

Take, for example, the politics and exercise of power within the AIDS crisis. If we consider government to be the official public structure that enables populations to realize their potential as human beings through policy, law, and education, then we will realize that civics is a complex and contradictory formation even though we might agree that one universal element of the government is care of the people. As our representative body, government is expected to aid people in need and to provide the necessary systems for the maintenance of human life. These systems, however, do not exist in a cultural vacuum and often reflect the prejudice and bias of elements of the larger society.

Standards of complexity require that we do not reduce the fight for democracy to historical battles that have since been completed. Instead, they illustrate that democracy is always in process, with struggles for participation that must be told from the point of view of the losers as well as the winners. Contradiction is an asset within queer pedagogy, as it helps uncover different perspectives and the complexity of events. Within this framework, the AIDS crisis illustrates how civics education can be employed to teach students about the roles power and discrimination play in the wins and losses of a community that has struggled with an epidemic.

The AIDS crisis brought to the

forefront questions about the relationship between experts and laypeople. In particular, people began to examine the role played by prejudice against gays and lesbians in the provision of health care for people with HIV/AIDS. Questions were raised about whether government should tell queer people how to live their lives. Because this was a social group full of single people with lifestyles often not conducive to long-term monogamous relationships, the preaching of abstinence by governmental and social leaders was not a realistic response to the threat of infection. The mixture of fears of disease combined with the moral apprehension many officials felt toward the gay and lesbian community led to either an absence of assistance or a focus on the moral aspects of sexuality rather than on the behaviors that allow for the transmission of the disease.

For example, the AIDS Coalition to Unleash Power (ACT UP) invoked the separation of church and state that is fundamental to our democracy when an unsympathetic church official became a key representative who developed public policy on HIV/AIDS:

> Cardinal O'Connor's knowledge of AIDS prevention or treatment methods is limited to the foolishly simplistic view "morality is good medicine," yet he sits on the Presidential AIDS policy panel, telling our President what to do about AIDS. AIDS is not a religious issue. The Cardinal's attempt to push moralizing as public health policy shows a disrespect for those dead from AIDS and a profane lack of compassion for those who remain at grave risk for contracting this disease.
>
> The Cardinal's representatives sit on the Board of Education's AIDS Curriculum Task Force and have prevented teenagers of all religious faiths from obtaining lifesaving AIDS information in their public schools. Americans did not elect the Cardinal. This kind of political bullying is a clear violation of the constitutional separation of church and state—in fact, this issue is currently on trial in the courts. (Blasius & Phelan, 1997, p. 626)

As C. Patton and D. Britzman note, AIDS education is much more complicated than it might seem (Britzman, 1995; Patton, 1990). Government educational efforts often failed to link facts about HIV/AIDS transmission and safer sex practices. Confusion over whether HIV/AIDS transmission is a moral or biological issue created panic in both heterosexually identified and gay and lesbian communities. When risk was assigned to communities based on moral codes while the actual and very real risk of different sexual practices was overlooked, morality became equated with infection rather than with sexual practices. Because of this moral construction, it became easy to construct false borders that conveyed an image of sanctity for those who were not a member of the social group at risk. While these borders might be comforting, they are all too illusive and undefined, uninformed of the practices that have allowed HIV/AIDS to enter all commu-

nities, regardless of orientation. The focus on the morality of HIV/AIDS inspired an ethical quest from our citizenship as we worked for a more just response to the disease: how do we critique the prejudice and fear aimed at the gay and lesbian community, offer HIV/AIDS education that focuses on both the social and biological aspects of the disease, and teach risk factors to all communities regardless of sexual orientation?

As I hope this example demonstrates, civics education must include more than instruction on formal governmental structures and procedures. A standards of complexity requires that we consider how these structures function within a framework for social justice. A progressive civics requires us to understand more than how government functions in its ideal state; we must also study how communities react and empower themselves upon the failure of social policy and governmental leaders.

The AIDS counterculture brought the gay and lesbian community to ask a series of important democratic questions and forced a transformation in the relationship between government, medical establishments, and the people. In a grassroots effort, those who were at risk produced, gathered, and distributed information about the disease at various public outlets, from community centers to local clubs. Physicians who were members of the gay community were hired for experimentation because of their familiarity with those at risk. Groups such as ACT UP forced an open dialogue around HIV/AIDS, and through controversial media tactics they often brought the devastation of the disease to light in the broader community.

While this is not an exhaustive account of the HIV/AIDS crisis, it does highlight the role of passion within pedagogy and civics. Hate and neglect directed toward a community can evoke compassion in people and the desire to act in socially just ways. My point is that it seems certain that a love of learning cannot be an embodiment of knowledge alone since the desire to know is also bound to the soul, spirit, and the desire to act. Learning is more in concert with the creative risk taking that comes with putting new ideas into practice than with knowledge for its own sake. A progressive pedagogy is about the freedom and self-rule to expand thought, and this might be where the desire to learn and act are wed as two key elements of healthy living.

Conversely, we might begin to hate learning if it is associated with pedagogy that constricts our ability to dream and make practice in life. The pedagogue must be careful to avoid acting as an expert in an authoritarian manner that constricts students' self-rule. Curriculums need to offer students the opportunity to inquire into the elements of their own life-experience since it is from this location that we can inspire a thirst for knowledge grounded in new understandings of one's own experience and the desire to act upon the world.

Accordingly, curriculums cannot be conceptualized as finished accounts or

compilations of established facts since this outlook removes the dynamic human elements of learning. As an alternative, we might want to think of curriculum as living in the relations between humans. If curriculums exist not in established lesson plans but in the forceful social acts of a community, then we have to give as much consideration to the relations among teachers and students as to the act of knowledge production. Rather than dispensing right and wrong factual information in an authoritarian manner that closes down relations, it might be important to offer multidimensional relations that allow students to grapple with the possibility of many tentative conclusions.

A progressive civics pedagogy challenges us not just to acknowledge problems when they arise but also to become problem *detectors*, with the understanding that curriculums are contested spaces—along with sanctioned knowledge always comes that knowledge which remains invisible upon first inquiry. As we think about civics as a constant struggle for control and maintenance of resources through policy making, information dispersal, and knowledge production, we need to reconceptualize the American Dream and its belief in rugged individualism. We need to remind ourselves that, contrary to common logic, we are born into a world that was not of our own making with identities tied to historical struggles of which we were not directly a part. While this might release us from some of the guilt for our world's problems, it should also inspire us to make a better place while we are here through an understanding of our ties to our own cultural context. If we understand *how* we know *what* we know then we are open to new possibilities for changing the practices of society.

This, however, is not an easy task. In a culture that focuses on individualism, students have a difficult time understanding that they are not in full control of their own thoughts. As educators, we must help students understand that pedagogy does not happen only in the classroom but in every moment of our lives in the world. We are less autonomous, impenetrable bodies moving about in time and space than porous entities whose understanding of ourselves takes place in the space between us and the world.

As we talk of practice, I want to offer an example of my attempt to help students understand their cultural context and to see how they have been offered and have incorporated certain understandings of the world even if they do not accept them. I perform this pedagogical task through simple sentence completion exercises. For example, I record on the chalkboard phrases like "Welfare mothers are . . . ," "Gay men are . . . ," "Black men are . . . ," "Women are . . ." and then I ask students to complete the sentences.

While students are usually quite hesitant to address these stereotypes, once a student offers the first response, others quickly follow: Welfare mothers are lazy, urban, and African American; gay men are promiscuous, immoral, and effeminate; black men

are violent, lazy, and poor. And the list goes on and on. Students are quick to qualify that these beliefs are not their own, and at this point in the conversation I attempt to change the focus from their beliefs to the belief systems that exist in society. It is important that students understand that we are talking about cultural belief structures that influence people's lives whether or not they personally invest in them. After they complete the sentences, I provide a series of facts that illustrate the false nature or impact of these beliefs, including studies that show heavier sentencing rates among African American men, that Caucasian women are more likely to be welfare recipients than African American women, and that many social groups outside of gay white males are affected by the HIV/AIDS epidemic.

This process of confounding traditional notions of civics opens students to alternative ways of relating to the world. Through our relationships and discussions we attempt to understand how we have come to know what we know. Although creating fissures in students' perceptions can be intimidating, it can also invoke a passion for critical thought and a true love of learning. At its spiritual core, civics pedagogy is about love of the other and a commitment to a more socially responsible and just society. As Paulo Freire (1970) states, "Love is an act of courage, not of fear, love is a commitment to others. . . . As an act of bravery, love cannot be sentimental: as an act of freedom, it must not serve as a pretext for manipulation" (p. 71).

While every nation attempts to paint pristine and glorious images of its origins and histories, it is through both our achievements and our mistakes that we learn not to repeat errors. Progressive civics pedagogy explores the complexity of society and confounds the social categories that in part define our lives. Students can understand how they are a part of the web of cultural meaning, and through that knowledge, they can learn to take action within that web, to become meaning makers.

The Klein Scale: A Practice in Confounding Sexuality

If queer pedagogy is about confounding categories, then the Klein Scale can be an excellent tool for examining the question, "What is sexual orientation?" Students typically think of people as either homosexual or heterosexual. While these discrete categories offer a simple understanding of sexuality, they often hide the complexity of human life and reduce the objects of desire to the people with whom we have sexual relations. In order to address the complexity of sexuality, I offer a series of confounding questions from F. Klein's framework that ask students to decide if the person is heterosexual or homosexual given their framework for sexuality (Klein, 1993).

The first question I offer relates to episodic sexual behavior. How do we label a woman who only sleeps with other women when she has been drinking but at all other times sleeps

with men? Students usually respond with their belief that she is bisexual. Good. Now we have a third category, bisexuality. The second question I ask relates to temporary sexual behavior. How do we label a predominately heterosexual male who is having an affair with another male and prefers at this time to only sleep with him? Students again respond with "Bisexual." The third question I ask relates to experimental sexual behavior. How do we label a man who sleeps with another man only once to see what it is like? This question often brings some reflection. Students usually conclude that if he only experimented once with the same gender then he is still heterosexual. Now we have a view of sexuality that moves beyond sexual practices and into conceptions of identity. The last sexual practice question I ask relates to behavior based on context. How do we label a male prison inmate who prefers females but who, given the situation, has sexual relations with other men. Students usually conclude after deliberation that the man is heterosexual because he would prefer to be with women.

In the second set of questions, I attempt to build on identity and psychological aspects of sexuality. I ask students how we define people who might fit different categories in different situations. For example, how do we categorize a man who is happily married and considers himself heterosexual but occasionally goes to gay sex clubs and receives fellatio? Most students agree that even though the person defines himself as heterosexual, his sexual acts indicate that he is bisexual. It is at this point in the conversation that I explain to students that they have identified multiple dimensions of sexuality: sexual acts, self-conception, emotional bonds, preferences, and time engaged in particular activities.

At this point I use the Klein Scale to further confound the traditional logic that suggests sexuality is limited to sexual practices while excluding many other mitigating factors. According to Klein, sexual behavior is only one of seven continuums that can be used to explain sexual orientation.

1. *Sexual Attraction.* This category is often confused with sexual behavior although attraction and activity are far from the same thing. One can have attractions to people of the same gender and never be involved with them sexually.
2. *Sexual Behavior.* This category is most commonly equated with sexual orientation. One can, however, have same-gender sexual attraction and interaction while having sexual relations only with the opposite gender.
3. *Sexual Fantasies.* Who one thinks or dreams about sexually.
4. *Emotional Preference.* This variable is different from the previous three variables in that it does not involve sexual arousal and takes some explication. Some people have sexual relations with the opposite gender while being emotionally involved in same-

gender relationships. I usually explain to college students that during their undergraduate years they might find a high degree of emotional involvement with people of the same gender even while they perform sexual acts with the opposite gender.

5. *Social Preference.* This variable is similar to emotional involvement and marks the degree to which a person enjoys socializing with the same or the opposite sex.
6. *Lifestyle.* This is a measure of the degree to which one lives in various social worlds. A person can fraternize with gay, lesbian, bisexual, or heterosexual friends and go to bars and other public spaces dedicated to queer or heterosexual communities.
7. *Self-Identification.* This category is an important one as it addresses how people think about themselves. People can have many different conceptions of self that to various degrees might align with their public identity. A bisexual person might take the label "gay" or "lesbian" for easier identification within a community while subjectively self-defining as attracted to both genders.

This framework for understanding sexual orientation is not exclusive and might be problematized by people who find that creating new categories for sexual orientation is still theoretically limiting. I suggest, however, that while restrictive, the Klein Scale does offer students the chance to expand their understanding of sexual orientation beyond human sexual behavior. As a pedagogical endeavor, people are confronted with the notion that few people are exclusively heterosexual or homosexual but fall into some intermediate space between the two in a complex web of subjective and objective thoughts, interactions, and behaviors. This scale can be utilized to open students up to the possibility that desire is a core element of human life and encompasses much more than sexual acts alone.

Klein Scale Exercise

Students can use the following exercise to gain a stronger understanding of their own sexuality. As they utilize the Klein Scale (see Table 1) to rate the seven dimensions of their sexuality in the past, present, and future, they can find their point score and locate their position on the Kinsey Scale (see Table 2) continuum. Students will find a richer understanding of desire and affect in those aspects of their lives where few people are exclusively heterosexual or gay or lesbian.

Conclusion

Queer pedagogy is more complex than a good lesson plan and an attentive group of students. If it is our responsibility to bring the world into the classroom, then we must confront those ideas and concepts that are known to be off-limits in our culture. Through

TABLE 1 Klein Sexual Orientation Grid

	Past (five years)	*Present (past year)*	*Ideal Future Goal*
Sexual Attraction			
Sexual Behaviors			
Sexual Fantasies			
Emotional Preference			
Social Preference			
Lifestyle			
Sexual Identification			
Totals			

Directions: Consider each of these aspects using the definitions listed below. What are the genders with whom you have shared/will share these elements of your life (1) in the past five years, (2) in the past year, and (3) in the future. Using the numerical rating system below, choose the description for each Klein Scale variable that best fits your experience and put the number for that variable into the corresponding cell.

To rate your self-conception on the Klein Scale, total the past, present, and ideal future goal columns and add your totals together. Take your total and divide it by twenty-one. Refer to the scale below to get your Klein Scale score; you can also use this number to rate yourself on the Kinsey Scale (see Table 2 below).

1 = exclusively with persons of the other gender
2 = mostly with persons of the other gender (incidental same-gender involvement)
3 = somewhat with persons of the other gender (significant same-gender involvement)
4 = approximately equal involvement with persons of both genders
5 = somewhat with persons of your own gender
6 = mostly with persons of your own gender (incidental opposite gender involvement)
7 = exclusively with persons of your own gender

TABLE 2 Kinsey Scale

0	*1*	*2*	*3*	*4*	*5*	*6*
Exclusively heterosexual behavior	Incidental homosexual behavior	More than incidental homosexual behavior	Equal heterosexual/ homosexual behavior	More than incidental heterosexual behavior	Incidental heterosexual behavior	Exclusively homosexual behavior

an exploration of various cultural contexts using multiple perspectives, we as teachers can offer new insights and perspectives into our own communities. A progressive queer pedagogy demonstrates that students are more than empty vessels waiting to be filled with facts. If we are to invoke a passion for learning, then it might be our mission to illustrate the contested terrain of curriculum and pedagogy by entertaining various points of view as different ideas compete for recognition within our educational institutions. As we offer a more dynamic understanding of teaching and learning, students begin to understand that through critical insights, the framework of traditional classification systems can be uncovered and our own prejudices and biases revealed in the process. Standards of complexity require that we resist national and state standards that fail to acknowledge that differences of race, class, gender, sexual orientation, spiritual beliefs, and region shape our cognition.

As we think about the contextual and relational aspects of pedagogy, the role of desire becomes paramount to understanding how we as educators can nurture a love of learning. We must constantly work to expand our understanding of curriculum beyond inclusion to a point where we work to confound the very categories that bind passion to discrete forms of thought. If desire is an integral element of all our lives, then sexual orientation can be fathomed as the outcome of our desire rather than as an essential difference between heterosexually identified people and all other people. From this universal place found in all persons, we can draw on the relational aspects of living and the passion we all experience to make a meaningful and relevant life.

In practice, a queer pedagogy demands that we reformulate how and what we teach. It reconceptualizes civics to be about more than teaching formal government structures and processes and to include an understanding of how civil disobedience works to change conceptions of communities under siege from prejudice and neglect. Through the study of relationships, we can transform curriculums that isolate theory from practice. Students need to be aware of the impact that social forms, such as economics, have on the lives of peoples around the world. Now, more than ever, public education can help counter the intense individualism that exists in our society. Citizens must have a global understanding of culture and politics as they relate to moral behaviors and ethical business practices. A queer pedagogy demands that we acknowledge that all curriculums are political, whether we teach controversial topics or choose to ignore them out of a fear of reproach.

If we want students to engage in high-order cognitive thought, then standards of complexity require that we teach outside of the sanctioned curriculum that exists in our educational institutions. To invoke a love of learning, students must be given the freedom to create new classification systems and collectively work toward a

more just society. A narrow understanding of knowledge will only serve to constrain student learning and possibly create resentment toward education. As educators, our most important role might be that of creating a lifelong thirst for knowledge wed to the desire to act for a better world.

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THE NATURE OF REDUCTIONISM

The Irrationality of Technical Standards

Joe L. Kincheloe

As we learn more about the social and the physical universes, we gain a better understanding of the complexity of all aspects of the world. Ways of seeing and making meaning that don't take this complexity into account offer a misleading and often quite dangerous picture of reality. Social institutions grounded upon this diminished understanding, or reductionism, harm the individuals they serve. Educational institutions built on the philosophical foundations of reductionism miseducate their students. And educational standards constructed on reductionist assumptions distort efforts for educational reform; they subvert the attempt to produce a truly rigorous, inspirational, and inclusive form of schooling. This chapter is important for those who are studying standards, as it outlines the nature of reductionism and the ways it covertly shapes the irrationality of technical standards. If we are to ever move toward the adoption of rigorous educational standards of complexity, we must understand, be able to identify, and move beyond the disabling effects of reductionism.

The Complexity of It All

Over the last few decades, scholars of all stripes and disciplines have come to understand the inadequacy of the positivist, Enlightenment ways of studying both the physical and the social worlds. Einstein's recognition of the physical world's complexity early in the twentieth century slowly filtered into the physical, scientific, social scientific, and humanistic disciplines throughout the subsequent decades. Numerous educators have written and taught about the perils of reductionism in the pedagogical domain. However, the recognition of complexity in everyday school practice in the early twenty-first century is still not common. Educational leaders have often rejected the work of educators, from John Dewey and Alfred North White-

head to Paulo Freire, Maxine Greene, and William Pinar, who have recognized the inherent complexity of the educational act. With the development of school standards in the 1990s, the denial of complexity asserted itself in even more reactionary ways.

It is clear that the intricate web of reality is composed of too many variables to be controlled in all circumstances. In the social, psychological, and educational realms, such an attempt at control would be especially futile. Factors that many people perceive as unimportant, called "noise" in the language of reductionistic research, can exert unpredictable and dramatic effects on human situations—teaching and learning situations in particular. We cannot know the location, interactions, effects, and importance of all the forces in educational venues. In such circumstances, change takes place in unpredictable and disordered ways. Obviously, there is more to the teaching act than meets the eye. Top-down, content-driven, technical standards are not formulated with this reality in mind. Technical standards and their effect on the everyday lives of teachers and students are shaped not by an appreciation for complexity but by reductionism.

If reductionistic assumptions about the educational world were true, if educational activity were constant, ordered, similar in every context, and predictable, teachers could simply follow the dictates of scientific generalizations and teacher educators would know the abilities teachers need in order to produce excellent students. This "education gig" would be an easy job to master. But, of course, it is not. As they operate in the whirlpool of disorder we call the classroom, even veteran teachers struggle to teach their current classes as well as they taught their students five or six years ago. But teachers learn quickly that the techniques and curricula they used a few years ago may no longer work. They must constantly readjust, refit, rethink, throw out, and redevelop their curricula. The decades-long attempt to eliminate the complexity and uncertainty of the teaching act has failed, and if unaltered, the reductionistic standards reforms of the present era will also fail. Educators, parents, citizens, and political leaders must understand the reductionistic dynamics that shape such doomed reforms.

Irrational Rationality: Describing Reductionism

In the name of logic and reason, reductionism dominated educational thinking in Western societies for the last few centuries, but it especially ruled supreme and reached new levels of articulation in the twentieth century. Reductionism asserts that complex phenomena can best be appreciated by reducing them to their constituent parts and then piecing these elements together according to causal laws (Mahoney & Lyddon, 1988). This reductionism coincided with René Descartes's bifurcation of the mind and matter/body. Known as Cartesian dualism, this idea split human experience into two different

spheres: (1) the "in here," an internal world of sensation, and (2) the "out there," an objective world composed of natural phenomena. Drawing on this dualism, scientists asserted that the laws of physical and social systems could be uncovered objectively; the systems operated apart from the "in here" world of human perception, with no connection to the act of perceiving.

Advocates of the complexity principle view this development as an irrational act in the history of Western thought. Ignoring perceivers and the complex forces that shape what they see and how they make sense of it has undermined Western scholarship all the way to the contemporary era. Many Westerners have not understood that the place of the perceiver in the complicated web of reality affects the nature of our knowledge about the world. Einstein understood this in the physical world and numerous analysts recognized it in the social, educational, and psychological worlds. Yet only in the last few decades has a conversation taken place about the meaning of such a concept. One cannot rigorously understand the standards debate without recognizing reductionism's separation of the perceiver from what is perceived.

Forever separate in the reasoning of reductionism, the internal world of perception and the physical world of what is perceived could never be shown to be a form of one another. Reductionist *realism* presumes a singular, stable, external reality that can be perceived by one's senses; reductionist *rationalism* argues that thought is superior to sense and is most important in shaping experience. The complexity principle that undergirds standards of complexity rejects this dualistic way of understanding knowledge, or epistemology, and offers an alternative to reductionistic realism and rationalism (Lavine, 1984; Lowe, 1982; Mahoney & Lyddon, 1988; Denzin & Lincoln, 2000).

Our notion of complexity contends that, contrary to the arguments made by proponents of realism, reality is not external and unchanging. In contrast to rationalism, the complexity principle maintains that human thought cannot be meaningfully separated from human feeling and actions. Knowledge is constrained by the structure and function of the mind and can thus be known only indirectly. Objectivism, the separation of the knower and the known implicit in the reductionist tradition, denies the spatiotemporal location of the knower in the world and thus results in the estrangement of human beings from the natural world (Lowe, 1982; Mahoney & Lyddon, 1988; White, 1978; Kincheloe, Slattery, & Steinberg, 2000).

Alvin Gouldner extends this analysis, arguing that the reductionistic sciences promote a form of cognition suitable for an alienated age and an alienated people. The dominant expressions of the social and behavioral sciences serve to adjust students to sociocultural alienation rather than helping them overcome it (Reinharz, 1979). Descartes argued that knowl-

edge should be empirical, mathematical, and certain, and the orientation toward knowledge work and research that emerged from this idea worked to exploit the forces of nature in a way that destroyed the landscape of the earth. As a result of this objectivist epistemology, we now inhabit a human-made, artificial environment. This modernist tradition produced a behavioral science untroubled by the manipulation of human beings and an educational system that utilized the behavioral sciences to mold students and their consciousness in a way that would foster efficiency and economic productivity, often at the expense of creativity, social justice, democracy, and academic rigor. Modes of analysis emerging from the complexity principle were sacrificed for the memorization of random data and particular prearranged formulas.

Teaching and learning, from the perspective of the reductionists, are developed by following specific procedures, specific measurable psychological processes. The acts are operationally defined and then broken into discrete pieces; we first learn the symbols of chemistry, the place of the elements on the periodic chart, the process of balancing chemical equations, the procedure for conducting a chemical experiment. It would be disorderly and "scientifically inappropriate" to think about where chemistry is used in our everyday lives before these basics are learned, the reductionists argue. Reductionists operating under the banner of the Cartesian scientific tradition utilize content standards, basals, worksheets, and rigid, sequential methods. Such reductionistic methods facilitate the development of materials and the training of teachers—it is far easier to write a content standard based on a fragmented form of knowledge with a list here and an objective test there than it is to develop materials that help connect individual student experience with the concepts of a particular discipline. Indeed, it is far easier to *train* a teacher to follow specific, predefined, never-changing steps than it is to encourage a reflective stance concerning the points of interaction connecting student experience and emancipatory concerns with self-direction and disciplinary data.

Advocates of standards of complexity maintain that teaching and thinking the whole is greater than the reductionistic sum of the individual parts. They reject reductionist task analysis procedures derived from scope and sequence charts. Rejecting measurements of the facts and associations an individual has accumulated, proponents of complexity maintain that there are as many paths to sophisticated thinking as there are sophisticated thinkers. The best way to teach students to achieve a complex-practitioner mode of thinking is to research particular students, observing the social context from which they emerge and the particular ways they undertake the search for meaning. In this process, teachers set up conditions that encourage student self-awareness and reflection, hoping to facilitate further growth through an individual

awareness of the nature of prior growth (Poplin, 1988; Fosnot, 1988).

Many reductionistic teaching strategies emerge from research studies conducted in strictly controlled laboratory settings that have little to do with everyday classrooms. Informed by their own practical knowledge and the practical knowledge of other teachers, scholarly teachers of standards of complexity have questioned the generalizability of laboratory research findings to the natural setting of their own classrooms. These teachers may have suspected the inapplicability of these findings, but the reductionist educational research establishment was not so insightful. The technicist mainstream assumed that laboratory research findings were the source of solutions that could be applied in every classroom setting (Doyle, 1977; Ponzio, 1985). Reductionistic researchers failed to understand that every classroom possesses a complex culture of its own, a culture that defines the rules of discourse in classroom situations.

Thus, opponents of reductionism contend that all classrooms are different, and as a result, the use of standardized techniques and materials, with their obsession with the parts instead of wholes, is misguided. In the unique particularistic classrooms of high-complexity teachers, "form" follows "purpose," as students are protected from premature instruction in precise forms; interest and passion are cardinal virtues, as student rational development is viewed as simply one aspect of thinking; and learning and thinking problems are not viewed simply as the products of aptitude but of complex interactions among personalities, interests, social and cultural contexts, and life experiences (Poplin, 1988). Thus, in recognition of the uniqueness of learners and learning situations, standards of complexity serve as an antidote to the reductionism and irrationality of Cartesian pedagogy (Hinchey, 1998; Kincheloe & Steinberg, 1998).

As we have attempted to illustrate throughout this volume, the reductionism of top-down, technical standards is nothing new. Michael Apple (1999) argues that one of the major problems in educational history has been the inability of those concerned with schooling to deal with ambiguity, to perceive it as a valuable characteristic. Without such an understanding, educational leaders have continually sought naive and simplistic answers to the complex social and cognitive questions that confront education. Indeed, this tendency is grounded on a reductionistic epistemological predisposition to seek certainty in inquiries about human and educational affairs. Standards of complexity attempt to overcome our socially ingrained discomfort with the enigmatic, our desire to have something we can all subscribe to together, and our need for a shared certainty.

Obviously, this does not mean that we can't study the canon of American history or English literature—although I hope we will study other canons as well. Rather, it means that we will not all be expected to derive

the same meaning or cultural significance from such canons. In a reductionistic context, the cult of certainty informs the way we approach all educational problems, forcing us to focus our attention on the trivial—on that which can be easily measured by empirical instruments. Rarely do the most significant questions of human affairs lend themselves to the empirical quantification and the pseudocertainty that often accompanies numbers (Koetting, 1988; Greene, 1988, 1995). Of course, technical content–driven standards fall right into the briar patch of educational reductionism.

Reductionistic certainty cannot withstand the pressure of socially contextualized, complex analysis. Advocates of the complexity principle ridicule the certainty with which reductionistic science constructs "valid" arguments. Such arguments begin with primitive and undefined terms and premises, and to ignore this situation is to seek a fictional security. Meaning, like an eroding hillside, slowly dissolves until language and texts take on a configuration quite different from the original state. A reader in 2102 may derive a very different meaning from this paragraph than what I currently intend. Different social experiences, different circumstances, may alter the codes that give this paragraph meaning in the early twenty-first century. The complexity principle reminds us that the starting place for curriculum development and evaluation procedures is not the "pure" data in itself, but the meaning derived from that data through the individual's frame of reference—meaning that cannot help but reflect the individual's ideology and the social norms of a specific time and place. Unexamined frames of reference lead to claims of scientific certainty that perpetuate privilege for the privileged and oppression for the oppressed (Cherryholmes, 1988). Of course, such a perpetuation of inequality is exactly what is occurring in educational systems shaped by technical, top-down content standards. Contemporary schooling in Texas serves as an excellent example of this process, promoting the idea of educational "excellence" and accountability.

These ideas have important implications for the development of standards and educational reform when they are used to analyze contemporary teaching and teacher education and to help teachers formulate questions about their own cognitive abilities and those of their students. Unlike reductionistic Piagetian formalists, the advocates of complexity do not conceive of thinking as mere problem solving because problems do not unambiguously present themselves. Problems are identified as a result of particular ideologies and social frames, a point missed entirely by the Piagetian formalist predisposition to look at problems as puzzles to be solved (Altrichter & Posch, 1989). Formal thinking does not allow teachers and students to explore the origins of the problems, the assumptions that move us to define some situations as problems and others as "not problems," or the source of authority that guides us

in our formulation of criteria for judging which problems merit our thinking and teaching time.

This is where our complex cognitive notion of postformal thinking helps us understand the complexity of our role as teachers. Employing such a thinking style, we begin to uncover the hidden ways ideology shapes the questions that are asked in our classrooms. Thus, we see far more clearly the shaky foundation on which the reductionistic quest for certainty rests.

Describing Reductionism: Isolating Parts of the World and Holding Them Still

The reductionist faith in the constancy of meaning shapes the lives of contemporary teachers. The meanings that students and teachers attribute to terms such as "reading," "teaching," or "learning" influence the forms that tests and evaluations of teachers, students, and schools take. For example, think about a scholar-teacher seeking to determine whether a complex method of teaching geography produces more learning than a reductionistic method. The teacher begins the inquiry by identifying what learning is and what behaviors should be examined to determine whether learning has or has not taken place. There is nothing objective about such a process; absolute, certain knowledge does not emerge from such a study. The knowledge that does emerge is inherently conditional—dependent on the teacher's acceptance of a variety of assumptions about the goals of geography education, the definition of a good student, the nature of learning, and so on.

From a complex postformal perspective, these teaching issues are not technical questions, they are questions of meaning. Because our perspective on thinking fashions our evaluation strategies, our designation of competent or incompetent teachers or students is contingent on the system of meaning we employ. And an understanding of this process is exactly what is missing in the shallow public conversation about educational standards. How do we make educational decisions? From where do school purposes originate? What does it mean to meet the standards? Is meeting a reductionistic technical standard indicative of a rigorous education? Without this notion of epistemological conditionality, of context, we find that citizens, educators, politicians, and students are easily co-opted into covert, technical, and reductionistic systems of meaning that undermine their understanding of what a rigorous education entails.

Postformal notions of cognition rest on an understanding of the reductionism of Piagetian formalism. Postformalism assumes that the cosmos is far more complex than previously understood and that human perception and knowledge production is characterized by ever-changing, context-specific variables. In formal (procedure-dictated) social research, so-called scientific controls contribute to the isolation of the object of study from its lived world context. Of course, much has been learned from such scientific

work, there is no doubt about that. But in the social, political, cultural, psychological, and educational domains, many of the most important features of human existence may be lost in such studies. Human identity and the consciousness that accompanies it are exceedingly complicated. This is the lesson that reductionists have failed to learn. And the "nonlearning" of formal research has exerted a tremendous impact on the domains of education and cognition.

In formal reductionistic social, psychological, and educational research, attention to circumstances surrounding the object of inquiry must be temporarily suspended. This suspension of attention is based on the assumption that these extraneous circumstances will remain static long enough to allow the study to be validated. Of course, these "extraneous" circumstances never remain static. They are constantly interacting with and shaping each other. To exclude them is to distort reality (Longstreet, 1982). In settings such as schools, student and teacher behavior cannot be understood without careful attention to the setting, to the individuals' relationships to the traditions, norms, roles, and values that are inseparable from the lived world of the institution. The inability of formal reductionistic educational researchers to say very much that is meaningful about school life is due in part to their lack of regard for these often invisible but foundational aspects of organizational life—the context (Eisner, 1984; Wilson, 1977; Steinberg & Kincheloe, 1998).

John Dewey (1916) reflected this idea long ago when he argued that many thinkers regard knowledge as self-contained, as complete in itself. Knowledge, Dewey contended, can never be viewed outside the context of its relationship to other information. We only have to call to mind, Dewey wrote, what passes in our schools as acquisition of knowledge to understand how it is decontextualized and lacks any meaningful connection to the experience of students. Anticipating our notion of postformalism, Dewey concluded that an individual is a sophisticated thinker in the degree to which he or she sees an event not as something isolated "but in its connection with the common experience of mankind" (pp. 342–343). The recognition of such a connection is always an interpretation, and interpretations will change with changing contexts. We can never hold a human-produced interpretation still; it is a product of context. Thus, schools shaped by complexity focus on the process of interpretation as a part of a higher order of cognition.

In the twenty-first century, Western observers have grown so accustomed to the reductionistic fragmentation and decontextualization of formal science and the cognition that accompanies it that we no longer even attend to it. Teachers are acculturated to accept the twenty-minute visit of the supervisor followed by an evaluation of the quality of their teaching. Like all things human, every classroom has a context of its own. Teachers and supervisors who appreciate complexity

understand the absurdity of the twenty-minute observation, knowing that such a snapshot does not allow for an appreciation of contextual features such as previously negotiated codes and conventions that grant meaning and significance to mundane teaching practices. Yet reductionistic empirical researchers or evaluators often make judgments based on fragmented information not viewed in context. The same is true of high-stakes tests in technical standards–driven educational systems. Without a contextual analysis, such tests may at best tell us little or at worst provide us with a misleading picture of what is happening in American schools in the first decade of the twenty-first century.

What do we know about the educational system of states, such as Texas, that report significant increases on test scores because of standards reforms? Is our view of the context in which Texas test scores are reported sufficient to understanding their meaning? Do we know that some of the score increase has resulted from curricula designed to teach to the multiple-choice exit test? Do we know that some of the increase has resulted from the exemption of special education students—a group that scores in the lowest twenty percentile of the test—from taking the examination? When we learn such information about the Texas standards test and other state tests, we understand the relevance of John Dewey's admonition that educational research must always be judged in light of the unique context in which it takes place.

We must always avoid reductionism and confront the idiosyncrasy of each teaching situation. Unless we examine the contextual specifics of educational research or evaluations, we will reductionistically claim to know generalizable cause and effect relationships in the teaching act (Elliott, 1989; Lincoln & Guba, 1985; Denzin & Lincoln, 2000; Clough, 1998). General pedagogical rules cannot be viewed as substitutes for actual experiences. In standards of complexity, appropriate teacher action and the manifestation of good student work is not preordained by fixed, static, intractable, and universal rules. Good teaching and high-quality student work are matters of reasoned personal judgments in particular situations. The fact that everyone can read at a specific grade level takes on a different meaning in a poor, rural Tennessee school district than it does in Scarsdale, New York.

Reductionism and Interconnectedness: The Fragmentation of Reality and Self

When we combine this appreciation of contextual particularity with an understanding of reductionism's tendency to fragment reality, we begin to get a sense of the way our worldview is skewed by formal modes of knowledge production. Cartesian modes of research and analysis interrupt the holism of experience. In the context of complexity we understand that there is something special about the concept of holism—a complex set of circum-

stances and relationships come together in a whole to create a unique entity. Once reductionistic analysis attempts to break it into discrete pieces for the purposes of analysis, the whole is destroyed. The connections and interactions that had come together to create the special holism are torn asunder.

Thus, attempts to view educational situations as mere inputs and outputs, with test scores representing the ultimate expression of quality, are doomed to failure. The recommendations that emerge from reductionistic analysis to improve schooling—most often defining improvement as higher test scores—may actually serve to destroy the scholarly structures that had managed to exist within particular schools. This doesn't mean that we don't engage in school improvement. It does mean that we understand schools in sufficient detail to appreciate what we are undermining when we mandate reductionistic test-driven educational reform.

Most school reforms of the last twenty years, technical standards included, have failed to view human beings, society, and education as interconnected aspects of a broader framework that reveals itself to those who are sensitive to complexity. Cartesian analysts have routinely failed to think in terms of this connectedness and its relationship to human potential. To avoid technical reductionism, standards need to take this interconnectedness into account, as did Einstein in his work on the theories of relativity. The cognitive genesis of his work was to avoid Newton's reductionistic fragmentation of the universe, while at the same time understanding gravity, space, mass, and time as part of a larger relationship.

Advocates of technical standards fail to learn the dramatic, world-changing lesson provided by Einstein because they fall into Newton's trap of compartmentalization. Students may graduate from technical standards–driven high schools never having given a thought to how their various subjects relate or why knowledge is segmented as it is. Although no one is an island, contemporary content standards, through their curricular structure, stipulate that knowledge *is* an island. Removed from its sociohistorical roots and its political impact, the decontextualized, reductionistic knowledge of the modernist school serves to foster surface-level cognitive processes—thinking of a concrete and formal variety that emphasizes categorization and retention processes (Britzman, 1991). To avoid this reductionism in our teaching and our study of cognition, we educators must learn to derive meaning from direct experience. Learning from and extending the knowledge derived from direct experiences, such as the practical knowledge of teachers, we move into the realm of connectedness, where new awarenesses carry us beyond the boundaries of conventional educational thinking. As we confront reductionism, the West may overcome its creative malaise and move toward higher dimensions of human experience.

Marilyn Ferguson (1980) uses the

multicultural image of the Cheyenne wheel of knowledge to conceptualize this higher dimension of human experience, the realm of human becoming. Thinking in terms of the themes we have developed in this volume, the Cheyenne developed a system of meaning to help them make sense of the world and their relationship to it. The Cheyenne and other Native American peoples used the wheel to visually represent the interconnected, circular nature of the cosmos and the knowledge that humans produce about it. The wheel helped them interpret information in relation to both their experiences in the world and their spiritual role in the universe. The epistemological, ontological, and cosmological understandings implicit in the wheel of knowledge is, as one can quickly discern, quite sophisticated.

Thus, in the spirit of the Cheyenne we learn to think in a complex way that allows us to make sense of our place on the planet, our role in the pageant of history, our connection to the quantum world of the subatomic and to the immensity of the universe, and our relationship to birth, death, work, and family. Without an appreciation of complex systems and the way their unfolding affects us, we are lost in the cosmos, incapable of transcending the formal cognition of modernist reductionism. Without our complex wheel of knowledge, we find "being" easier than "becoming." Education in its technical standards–driven form is better equipped to adjusting students to the existing world than to engaging them in imagining higher orders of thinking, new ways of instituting social justice, and more successful modes of democratic citizenship.

As we think about issues of social justice and democratic citizenship in relation to modernist reductionism, it is important to address the complexity of the production of the self, a productive process that is inseparable from the construction of consciousness and the shaping of identity. If education is worth the time, money, and effort it consumes, advocates of standards of complexity argue that it should make us smarter, more ethical, more self-directed individuals who are sensitive to the needs of their communities. If this is not the case, then why bother? If it is the case, then citizens, political leaders, parents, and educators should be concerned with how we become who we are—that is, with self-production. Technicist forms of education basically ignore this process, while standards of complexity view it as the most important aspect of the curriculum and explore its complexity in a variety of contexts.

Self-production is an extremely complex operation, as is its relationship to curriculum development. It is not the result of simple cause-effect relationships. Historically grounded educational analysts understand that it is a far more complex process, ever changing, ever mutating, ever evolving. Indeed, contrary to reductionistic accounts, consciousness is never fixed, never established once and for all; rather, self-definitions change as historical conditions evolve, and historical conditions will change precipi-

tously in the twenty-first century. Essential definitions of Blacks, Hispanics, Native Americans, or Whites do not exist; that is, what it means to be Black or Hispanic or Native American or White is constantly mutating as identities intersect with forces of gender, class, religion, and the terrain of popular culture. Thus, individuals "rewrite" themselves in relation to shifting historical, interpersonal, intrapersonal, political, and educational contexts (De Lauretis, 1986).

For example, a Black female student raised in a poor southern rural setting who is interested in academic work, mathematics in particular, has contradictory forces at work in the construction of her consciousness. Her self-definitions are heterogeneous and often self-contradictory: she identifies with a Pan-Africanism, she rejects the rurality of her parents for its attendant passivity, she is uncomfortable with feminism and its interference with her heterosexual concern about her popularity with the males at school, and she is motivated by her desire for success in mathematics yet fears how such success may estrange her from her peer group. To argue that the young woman's consciousness/identity is simply shaped by her blackness or her class position is to miss the way self-production works and is to be guilty of a crass reductionism. The forces of consciousness construction are complex, interconnected, and inseparable. Historically grounded teacher-scholars must grasp this insight if their pedagogy is to hold any value and meaning for their students (Pinar, 1994; Kincheloe & Pinar, 1991).

The need for standards of complexity and their insistence that teachers be scholars becomes profoundly apparent in this context. To teach students in a manner that produces smarter, more ethical, more self-directed citizens, we must understand who students are as they enter school, what has made them that way, what their relationship is with the school in particular and education in general, and what they might become. Teachers operating in schools driven by standards of complexity who understand these dynamics gain insight into the potential of their students without losing sight of the abilities they already possess. Such teachers understand students' relationship with forces that oppress them and impede their growth, as well as those that inspire them and touch their souls. In contrast, teachers and school leaders caught in the cognitive snare of reductionism do not see these complex, socially interconnected aspects of self-production. Top-down, technical standards ignore them, and all students, whatever their personal tribulations and triumphs, are taught in a one-size-fits-all manner (Ohanian, 1999; Cannella, 1997; Weil, 1998).

Thus, self-production and its relation to rigorous teaching is one of many areas where the complexity principle helps us escape the fragmentation of reductionism. It is only when teachers are able to discern and act upon their recognition of the interconnections between student identity

and the larger sociocultural realm that a higher form of learning—learning that matters—can take place. In such complex educational contexts, teachers are able to get behind the curtain of "the given." Aware of the complexity of self-production, social forces, and education, rigorous teachers expose hidden assumptions; they make the tacit visible. In so doing, teachers conversant with complexity uncover hidden realities that change their own lives and those of their students.

These hidden realities are inseparable from the interconnected orders that can be found at the base of all physical, human, social, and psychological experiences. Reductionist, formal thinking has not been attuned to such interconnections because of its Newtonian interest in things-in-themselves. The socioeducational world is like an onion: as we peel off one layer, we find another beneath. In a technical standards–driven pedagogical context, the outside layer of socioeducational reality is the standardized test performance of a school. The second layer includes the assumptions behind the logic that is utilized in discussing the curriculum. The third layer is the unspoken epistemological assumptions inherent in the content of the standards. A fourth layer is the body of assumptions about learning that teachers and students bring to school. And so on, and so on. (Briggs, 1990; Greene, 1988; Bohm & Peat, 1987; O'Sullivan, 1999).

The fragmented public conversation about educational reform in general and standards in particular does not recognize these complex dynamics. The complexity principle has taught us that nothing is really as it appears to be on the surface. When rigorous educational analysts search for the deep structures that are there to be uncovered in any classroom, they discover a universe of hidden meanings constructed by a variety of sociopolitical forces—meanings that many times have little to do with the intended meanings of the official curriculum. A complex analysis of curriculum is grounded on the recognition that there are unseen constellations of forces that shape what happens in schools—some complimentary, others contradictory, some insight-producing, others repressive. When this complex analysis of deep structures is applied to standards, the implications for reconceptualization are infinite. Imagine the way we might reconceptualize evaluation, supervision, and administration. The reductionism of the technical approach to these areas would be overthrown as we came to understand the assumptions behind technical systems of evaluation, supervision, and administration.

In this context, more rigorous evaluation systems would transcend reductionism by focusing on basic skills, content knowledge, cognitive growth, knowledge work skills, and higher-order abilities; more rigorous supervision would help teachers connect social-contextual understandings with individual student interests, present academic performance, and the attainment of rigorous academic goals; and more rigorous administration would

involve less concern with improving misleading test scores for public relations purposes and more involvement with creating an environment where teachers, students, parents, and community leaders could engage students in the effort to connect higher-order academic skills to their use in the lived world. In this way we would actually be improving our schools and enlarging the positive impact they make on the society, rather than working a public relations scam by devoting the majority of our efforts to the manipulation of meaningless numbers. What a drain of our resources, what a waste of time are these efforts to raise standards-driven test scores!

The Political Dimensions of Reductionism: Regulating People

Reductionism always involves the realm of the political. And contrary to the most common meaning of the term "political," which involves generally the electoral process and the actions of politicians, I am using the term here to signify issues of power and its distribution. In this context it is important to discuss the epistemological reductionism of positivism in order to better understand the political implications of reductionism and its relation to the standards debate. Positivism has traditionally asserted that through the process of reduction, general laws can be reduced to propositions that can then be verified through empirical research. The goal of such knowledge is to predict and control both natural and human phenomena. In education, positivism has attempted to predict the relationship between educational objects (students) and educational events (teaching). Invariably, particular rules of the research act will focus attention on certain aspects of education and away from others—in the case of positivism, our attention is focused on education as a technical act.

When we measure certain portions of education to determine how well school systems, individual schools, or individual teachers are doing, we cannot separate this effort from the political issue of establishing what schools should be doing. Therefore, if positivist researchers can establish, via their research instruments, the criteria that measure how well we are doing in education, they have also established what schools should be doing. Positivism thus becomes a political instrument of social control while its adherents are all the while proclaiming their neutrality, their disinterestedness, their disdain for mixing politics and education. What a wonderful example of what the CIA refers to as "plausible deniability"—the ability to deny what you are actually doing, as covert operators do when they say, for instance, "Me? I'm a TV repairman." In the context of reductionistic technical standards, one can maintain innocence by proclaiming: "I'm not trying to dictate the curriculum, I'm just attempting to set high standards."

Of course, the content we choose to test students on will inevitably drive the curriculum, pushing out every-

thing that doesn't relate directly to the standards test. Since curriculum development is always a political act, determining whose knowledge is worth the most, there will always be winners and losers in the process. When educators and citizens in general are unequipped to see beneath the surface of these claims of neutrality, they are rendered powerless. Teachers are encouraged by the positivists in the name of professionalism to de-skill themselves. They are not encouraged to acquire the wisdom needed to evaluate their own teaching in terms of its relationship to larger visions of educational purpose or social justice. Instead, they are expected to implement scientifically validated, and thus uncontestable, criteria of educational quality. When teachers and students conform to such criteria, positivism accomplishes its insidious social control.

Any positivistic orientation that seeks to control human beings cannot view humans as sacred, as very different from other, nonliving objects of scientific research. Thus, the human is viewed as an entity that can be tailored to fit the proper social order. People are subordinated to a controlled environment where values are seen as nonrational, outside the realm of science. In technicist schools this ideology of social control, this minimization of the human, is seen in practices such as labeling, homogenous grouping, tracking, positive reinforcement, behavioral management, and so on (Dobson, Dobson & Koetting, 1987; Noblit & Eaker, 1987; Porter, 1988; Vanden Berg & Nicholson, 1989; Noblit, 1999).

In all of these practices, complex human processes are reduced to a technical calculation of means and ends, making human intentions virtually unimportant. But humans do not simply respond to the social world. We actively contribute to the creation of the world, we *construct* it (Lincoln & Guba, 1985). We base these constructions on our experiences, but positivism devalues the experience of both the subjects and the objects of research. And when human experience is devalued, social alienation sets in. In other words, educational and social scientists have fashioned their own alienation from the world and from themselves (Yeakey, 1987; Reinharz, 1979; Apple, 1999). As they devalue the complex role of the human in constructing the world of the school, positivist experts who "neutrally" set standards become educational voyeurs, peering at the school through binoculars, never experiencing the situation themselves, never knowing what it really feels like.

In the first decade of the twenty-first century, these voyeurs are often in charge of educational reform. They set the standards from afar, refusing, in the name of "quality education," to take into account the complexity of local conditions, the idiosyncrasy of the individual classroom and its one-of-a-kind students. Our happy model of context-sensitive, justice-concerned standards of complexity, with scholar-teachers researching their practices and the world of the school, does not

fit into the positivistic microcosm of authoritarianism and hierarchy. The culture of positivism fosters the notion that the distant standards devisers are experts—experts anointed by the holiness of science. The cult of the expert succeeds because it is blessed by the "scientific divinity." With such a blessing the positivist experts issue edicts to schools without concern for interpersonal skills. Indeed, such skills may be an impediment to the positivist enterprise, where interpersonal distance is important in the pursuit of objectivity.

Thus, in the name of neutrality, in the name of keeping politics out of education, technical standards makers render important ideological decisions about what knowledge is important and what is not. "It couldn't have been done any other way," they tell us, "we were simply following the objective dictates of science." Of course, women have been disempowered by a male-dominated curriculum; African Americans, Latinos, Asian Americans, and Native Americans are demeaned by the exclusions of a Eurocentric curriculum; and individuals from lower socioeconomic backgrounds are harmed by the standards devisors' decontextualization, their ignorance about the socioeconomic, cultural, and political forces that undermine economically marginalized students' performance in school in general and standardized test scores in particular.

Thus, standards are by nature political, as they shape political dynamics in education by operating in the interests of some groups and against the interests of others. Reductionism traditionally plays itself out educationally by supporting the power interests of the status quo. If those who hold the power set the standards, they will do little to undermine their own political interests. Indeed, one finds little challenge and much support of reductionistic positivism in contemporary technical standards reforms. The traditional conservative-liberal dichotomy in political analysis does not help (it actually impedes) our attempt to analyze and address the power of positivism in the standards debate. Neither conservatives nor liberals have been critical of the culture of positivism. The failure of late-twentieth- and early-twenty-first-century liberalism is directly connected to its inability to understand the underside of scientific hyperrationality (Hinchey, 1998; McLaren, 2000).

Indeed, the cult of the expert has grown in a liberal soil. Social engineering finds some of its most important historical roots in university departments of sociology, with their liberal visions of the good life (Bourricaud, 1979). In the last forty years, this liberal vision has fallen into disrepute around the world. The brief challenge to professional authority in the late 1960s was as much antiliberal as it was anticonservative. One of the keys to understanding the success of right-wing movements of the 1970s, 1980s, and 1990s is the right-wing co-option of the antiauthority rhetoric of the 1960s counterculture, translating it into the antigovernment rhetoric of Reagan, Bush, and Thatcher and the

anti–educational expert rhetoric of William Bennett. These conservatives were able to portray the domain of the expert as a liberal domain. If we are to be successful in our attempt to critique positivism, positivists who hide behind antipositivist labels, and the technical standards they have created, we will have to move beyond liberalism, with its blindness to the various ways that the poor, the nonwhite, and women are dominated and its concurrent blindness to the underside of reductionistic Western forms of analysis.

A recognition of this technical reductionism by scholar-teachers who support standards of complexity is central to the success of the reforms promoted in this volume. Scholar-teachers who are researchers possess the analytical tools to overcome these conservative and liberal biases. Teachers as researchers are able to challenge the culture of positivism. In this context they expose the origins of many of the reductionistic constraints that obstruct their ability to implement educational strategies that respond to the experiences and lived worlds of students from all backgrounds. But even teacher research projects that have been established are not free from the reductionism of contemporary conservatism and liberalism and the culture of positivism.

Many of the conceptions of teacher-researchers are informed by a form of liberalism that supposes that teachers can bring about change without recognizing the historical, social, and epistemological dimensions of educational change (Vanden Berg & Nicholson, 1989; Tripp, 1988). By recognizing this limitation, we can begin to understand that almost any educational innovation or reform, no matter how ambitious, can be rendered impotent by the scourge of reductionism. If we can identify and contain the regulatory features of reductionism, our standards of complexity can help us to see beyond "common sense," to challenge accepted socioeducational definitions, to uncover manifestations of hidden power, to expose the tacit codes that undermine human meaning making, to discern new orders of cognition, and to devise new and more appropriate methods of researching the lived world of schooling.

Exclusively Defining the Norm: The Banishment of the "Unworthy," a.k.a. the Different

In the study of cognition, reductionistic analysis defines the "proper" patterns of human cognitive development. Such an action operates as a powerful act of social control, as those who fall outside the scientifically validated norms of development are deemed unworthy of good grades in school or good jobs in the larger society. Thus, power manifests itself not through some explicit form of oppression but via the implicit reproduction of the self. Thus, advocates of reductionistic forms of cognitive development will operate within the boundaries of developmentalism, with its predetermined definitions of normality; they will teach and learn within its gravitational field. The task of the ad-

vocates of complex critical thinking—those who understand the social contextualization of thinking—is to overthrow these reductionistic views of the way power works. When power affects how we define intelligence, causing us to construct consciousness as some reductionistic cause-effect process, we forfeit our grasp on reality, we lose our connection to the rhythms of social life (De Lauretis, 1986; Walkerdine, 1984). Postformal thinking attempts to transcend the reductionist tendencies within developmentalism, conceiving cognition in a way that couples an appreciation of the complexity of self-production and the role of power with some ideas about what it means to cross the borders of decontextualized Cartesian ways of seeing.

These ideas are central to the debate about standards. Obviously, if teaching and learning are reduced to a one-size-fits-all motif or if developmental norms are unquestioned, then the most marginalized of our students stand to get hurt. Democratic education is subverted when we fail to address the complexity principle's concern with the social construction of mind. When reductionism ignores context, educators and psychologists come to see cognitive development in an essentialized manner, meaning that there is one "correct" mode of human development regardless of cultural and historical differences. The social features (race, class, gender, place) that influence patterns of development and definitions of development are ignored, allowing what are actually social constructions to be seen as natural processes. At this point the *practical* value of our understanding of complexity and reductionism in the context of the standards debate emerges.

Understanding the way reductionism erases the social production of the self, teachers and educational leaders familiar with the complexity principle always take social context into account when devising pedagogy, assessment, and rigorous standards. Knower and known, self and world, learner and subject matter cannot be defined in isolation from one another. Cognitive development, then, is not a static, innate dimension of human beings; it is always interactive with the environment, always in the process of being reshaped and reformed. We are not simply victims of genetically determined cognitive predispositions (Lawler, 1975; Walkerdine, 1984; Kincheloe, Steinberg, & Gresson, 1996; Kincheloe, Steinberg, & Villaverde, 1999). Yet defining these entities in isolation from one another is exactly what reductionism has done. In such a fragmented context, reductionism serves to undermine our effort to appreciate a variety of thinking styles and multiple forms of intelligences. Teachers do not have to look very far to find different thinking styles; if they are looking, they find them in any class and at every "ability level."

When we read Howard Gardner's *Frames of Mind: The Theory of Multiple Intelligences* (1983) and observe students that schools have labeled as unintelligent, we find that the label is misleading, based on low expectation. In these and other actions, we will dis-

cover fascinating, sophisticated, and diverse forms of intelligence. When we avoid the cognitive reductionism found in many technicist schools, we uncover myriad forms of valuable thinking, previously unrecognized. Many of us have observed individuals with little success in formal education who display cognitive abilities that far surpass those of far more "successful" students—and I am not referring here simply to categories of intelligence that are commonly attributed to individuals with little formal education, such as mechanical abilities, kinesthetic talents, or unschooled musical capabilities.

As our standards of complexity embrace these newly recognized forms of intelligence, they challenge the reductionism and mechanism of the quantitative measures of thinking that permeate technical standards. Indeed, our complexity principle rejects the evaluation of students against a single standard of cognition. Threatened by the advocacy of multiple standards of evaluation, the technicist forces of the status quo are agitated. Countering what they frame as a breakdown of standards or the vulgarization of society, they attack complexity itself and the social contextualization that accompanies it. When right-wing advocates of standards argue that an emphasis on cultural diversity undermines traditional academic excellence, they are all expressing an ethnocentric fear of losing control of the discourse, losing their right to define quality.

This high-stakes, highly politicized educational process of defining the norm takes place under the banner of objectivity and neutrality. Such reductionistic protestations of political innocence work beautifully and allow millions of students to be categorized as incapable with no one to argue on behalf of their many abilities. Arguing that "politics should be kept out of education," advocates of technical, top-down, reductionistic standards win the public argument about the direction of educational policy.

In contrast, standards of complexity call for a form of teacher education and education in general where individuals understand politics within the context of power, where they become aware of the hidden politics of so-called neutrality. Education is never neutral—indeed, when we attempt to remain neutral, like many churches in Nazi Germany, we end up supporting the prevailing power structure. Reductionism thus validates a way of seeing that holds pathological social, political, and educational consequences.

The Perils of Reductionism: Undermining Our Understanding of the Complexity of the Classroom

One of the features of reductionism most difficult to discuss in public involves the research it conducts on teaching and classrooms. Proclaiming its findings empirically validated and thus beyond reproach, reductionistic educational policy and the technical standards it advocates bask in the warm glow of scientific authority. Many reductionistic research studies

depend on observation within strictly controlled teaching situations that have little to do with everyday classrooms. What teachers perceive as the irrelevance of such research often relates to a lack of what Lee Shulman (1998) labeled "task validity," that is, the degree to which the environment in a laboratory is similar to the complex environment of the classroom.

Informed by their practical knowledge, teachers have intuitively questioned the generalizability of laboratory research findings to the natural setting of the classroom. However, the reductionistic mainstream assumed that laboratory research findings were the source of solutions that could be applied in every classroom setting (Doyle, 1977; Ponzio, 1985). Reductionistic researchers fail to understand that every classroom possesses a culture of its own—a culture that defines the rules of discourse in classroom situations. Meanings are negotiated around issues like who should talk and what are the consequences of particular behaviors.

Thus, the meanings of specific and complex classroom events depend on a researcher's knowledge of what has happened previously—how classroom meanings, codes, and conventions were negotiated. So it would be unrealistic for a positivistic, reductionistic researcher to simply walk into a class "cold," without understanding the previously negotiated meanings, and expect to make sense of the situation. It would be even more unrealistic for such a researcher to expect that generalizations applicable to other classrooms can be made from this incomplete and often misleading snapshot of a classroom. To understand the complexity of the classroom, alternative research methods must be employed.

This realization has sparked the mushrooming acceptance of qualitative, naturalistic research. Contrary to positivism's attempt to make quick and clean observations devoid of context, this research orientation places a high priority on detailed, long-term observation of behavior in natural settings. Qualitative, naturalistic researchers realize that the space between teaching and learning outcomes is shaped by a cornucopia of variables. Because of this complexity, the attempt to explain divergence in student performance by reference to a few generalizable aspects of teacher action is reductionistic and misleading (Doyle, 1977). Who is better suited to make long-term, detailed, multidimensional observation of classroom behavior than a teacher? Top-down technical standards cannot deal with this degree of local-classroom-level input into the shaping of the teaching act.

This is why technical standards promoters will often attempt to force a teaching situation into a framework that is amenable to the positivistic techniques they are using. Thus, they will reduce the complexity of a classroom in order to make it easier to analyze or to measure the "important" variables. Such manipulations are often not purposeful or even conscious; practitioners are induced to rearrange their teaching in a manner that makes it understandable in a positivistic con-

text. Preestablished objectives still can be met as a result of these manipulations; the problem is that the specific needs of students in the living classroom may have little to do with these goals. Indeed, technical standards ignore the aberrations, the problem students, the rebellious children who do not benefit from the techniques envisioned by the reductionistic theory. The idea of reframing the notion of standards or discarding the prearranged measures of performance does not fit into the paradigm. Complex notions of reflection-in-action value teachers who are empowered to change directions in midstream, teachers who make use of the evidence around them to construct new strategies and even new goals if they deem it proper (Moore, 1989; Clark, 1987; Greene, 1988; Schön, 1983; Steinberg & Kincheloe, 1998).

The difference between complexity and reductionism is well illustrated by John Dewey's (1916) distinction between knowledge and habit. When a learner forms a habit, he or she has gained the ability to use an experience so that effective action can be taken into the future. Dewey argued that this is valuable because everyone is certainly faced with problems again and again. But habit, like a reductionistic generalization, is not enough; it makes no allowance for change of conditions, for novelty. An individual who has learned a habit is not prepared for change and is vulnerable to confusion when faced with a new particularity, a previously unencountered problem. The habituated skill of the mechanic will desert him, Dewey wrote, "when something unexpected occurs in the running of the machine" (p. 335). On the other hand, the person who knows the machine understands the conditions that allow a certain habit to work and is capable of initiating action that will adapt the habit to new conditions. The type of teaching and the type of schools that engender such thinking are very different from technical standards–driven schools that view knowledge as something passed from teacher to student that lends itself to empirical measurability. If we fail to understand reductionism and its effects, we will not understand the dire educational and social consequences of top-down, technical standards.

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TESTING TIMES

A School Case Study

Ivor Goodson and Martha Foote

Picture this: a public urban high school conceived in the late 1960s as an alternative to the traditional education and hierarchical structure of most city schools. This school has not only upheld its unique educational and social vision through its thirty-year history but is deemed successful in terms of its high attendance and college acceptance rates, as well as its low dropout and suspension figures. The 200 students—African-American, White, Latino/a, and Asian-American—choose to enroll there because of this unique vision and high success, and the teachers choose to work there because they know the school affords them the freedom and respect to realize their innovative educational visions. This school is frequently described by teachers, students, and parents alike as a community, a family even, due to its nonhierarchical structures and close, supportive relationships.

Moreover, these judgments of success are not made only by those involved in this school. The city's mayor, Robert Mitchell, recently commented on the school's achievements in a letter to the state education commissioner, noting that the school's "success rate in graduating at-risk students is approximately 20 percent higher than the City School District's average rate." In addition, the school "boasts some of the District's highest attendance rates, highest SAT scores, lowest suspension rates, and lowest dropout rates." The mayor concluded that this school's "non-traditional, yet rigorous process for demanding accountability and assessing knowledge serves its students well" (R. Mitchell, 1999). This, then, is a school that has not only kept its unique vision alive, it has also passed the tests of school success that have been set over its thirty years.

Yet, what happens when this school, an oasis of nontraditional practices, is

confronted in this current era of educational accountability by an entirely different vision of what a successful school should be? A vision embodied in newly mandated state standards and standardized tests? A vision that, in fact, parallels the overstandardized, overtested type of schools that this school's original founders turned their backs on thirty years ago in their search for a successful alternative? Common sense would lead one to expect that any form of governance, state or local, would not change such a "winning team," but in the new forms of governance, educational success does not exempt schools from systematic new forms of interference.

In the new regimes of governance in education, control of education is passing from the trusted coalitions of teachers, students, and community that have been painstakingly developed in schools such as this. In a more general sense, control is passing from internal educational agents and student and parent communities toward external forces representing a different range of interests (Goodson, forthcoming). Lobbying efforts by corporations and industrial interests impinge hugely on the judgments of politicians and state education commissioners. These forces drive educational governance in wholly new directions. New patterns of external and symbolic control typically focus on testing, transparency, and accountability. Although understandable in principle, in reality such methods often collide with the delicately constructed ecology of school life. As such globalization wreaks environmental havoc in the world generally, so too can its specific effects in schools grievously damage the local ecology of an educational environment.

This chapter is a chronicle of the resistance of a particular school, the Durant School, to those global changes that would destroy its local ecology—a school whose fight against the imposition of state standards and mandated tests has been a fight to preserve its integrity, its mission, and its autonomy. In other words, it has been a fight both to survive and to defend a different, many would say more humane, vision of schooling.

Before we examine this school more closely, it is important to step back a moment and briefly contemplate a key argument for the standards movement: that the definition and prescription of higher standards will improve our failing schools. Though many dispute the notion that state-mandated curricula imposed in a top-down fashion and policed through the use of high-stakes, standardized exams will improve schools, we need to ask different questions. What will the standards movement do to our *successful* schools? Why must they comply with decrees and edicts pertaining to the content of their curricula when their graduates have a proven record of success in both college and the workplace? Why must their students submit to a battery of paper-and-pencil exams that supposedly demonstrate academic competency when this competency is already demonstrated by their postgraduation performances,

let alone their classroom achievement? And, we might add, why should the focus be only on strictly academic intelligence when more and more business gurus—the very people often influential in the standards movement—are stressing the crucial importance of social and emotional intelligence?

The reply from standards advocates has been that if a school is already successful, then the standards and their accompanying tests should amount to nothing more than a few hours out of a school's life for the requisite state exams that students will undoubtedly pass if the school is, indeed, of high quality. Such a response starkly exposes the narrow and limited perspective of what many standards advocates believe education is all about: a circumscribed set of skills and myriad facts that can be regurgitated onto a paper-and-pencil exam in a pressurized testing environment. It is this perspective that the nontraditional Durant School has been fighting. This is not surprising, since the school was set up deliberately to alleviate problems generated by a previous era of educational thinking of precisely this kind.

Located in a small, industrial city in the northeast section of the United States, the Durant School first faced the possibility of new state standardized exams in 1996. It was in April that year that the state's commissioner of education announced the adoption of a series of standardized exams in five different content areas to measure the attainment of the state's new higher standards by high school students. The passage of all five exams would be mandatory for graduation, and no public high school student would be exempt. Though the exams would be phased in gradually to give teachers and students time to prepare, the Durant School was acutely aware of the immediate and deleterious impact of these mandates on its program.

Specifically, in order to prepare its students for these exams, the school would have to begin both providing courses that specifically addressed the content of these new state standards and preparing students to take standardized exams. Both these practices are antithetical to the school's philosophy that students should have opportunities for in-depth learning in areas of their own interest, and that this learning is best demonstrated through presentations, portfolios, and long-term projects, or in other words, through performance-based assessments. In an attempt to preserve its integrity, the school needed an exemption from the state mandates.

In the summer of 1997, the Durant School applied for a variance from the state exams, maintaining that it upheld and even surpassed the broad state standards. (It is important to note that there are two sets of standards at play in this struggle—the broad state learning standards that address the development of cognitive skills and the narrow content standards for the different subject areas.) The school asked that instead of the state exams, it be allowed to continue to evaluate the students' attainment of the broad

learning standards through its own performance-based assessments, especially as these very same assessments had recently been publicly commended by the state as a model for high schools to emulate.

To the school's great shock, the state denied the request, maintaining that any alternative assessments to the state exams had to be externally developed; individual schools' assessments could no longer be trusted to ensure high standards. This rejection illustrates just how dramatically the educational and ideological climate has been transformed in the past decade. Performance-based assessments and local control have been knocked from the vanguard, usurped by standardized tests, with their scientific claims of "objective" reliability and validity, delivered by bureaucrats from on-high. However, the Durant School did not surrender its principles so easily; the fight had only just begun.

Throughout the 1997–1998 school year, the principal of the Durant School maintained contact and eventually joined forces with a group of other nontraditional high schools in the state, most of which are located together in another city, nearly 400 miles away. These schools were also fighting the state exam mandates, maintaining that their performance-based assessments not only upheld their missions and programs, but were also valid measures of the broad state standards. This union of schools, which now included the Durant School, decided to apply for a group waiver from the exams. However, rather than rushing forward with the request, they thought it best to take their time and build as strong a case for their alternative assessments as they could.

While this group effort was under way, the Durant School, fearing that the state might turn down the group waiver as well, began to examine other possible strategies to circumvent the testing mandates. Becoming a charter school was one idea, and in the fall of 1998, during their biweekly school-based planning team meetings, staff, students, and parents discussed together this possibility as a way to preserve the Durant School's autonomy. Though the idea was appealing to some, there was also strong philosophical opposition to such a move, especially regarding the siphoning of public school funds for these schools and their use by the religious right. (Later, when it was discovered that charter school students would still be required to pass the state exams to graduate, the idea became moot.) During this same period, there was also talk about granting GEDs in lieu of state diplomas. Again, there were grave concerns, especially that such a move would limit future education and job opportunities for Durant School graduates and be publicly perceived as a retreat from quality learning.

While the development of internal strategies for maintaining the school's autonomy and integrity was crucial, the school realized that these strategies alone were not enough, that a public relations campaign was also essential for a successful fight against

the state standards mandates. Therefore, as the internal strategies were discussed and debated in the weekly staff and biweekly school-based planning team meetings, the Durant School began to pursue several avenues of gaining public support for the school and its request for a variance from the state exams. Heeding the advice of a sympathetic member of the city's board of education, the principal and staff enlisted parents, a.k.a. voters, as lobbyists to advocate for the school. A special meeting was convened in November 1998 for staff to talk with a group of responsive parents about the threat these exams posed to their children's education. These parents in turn offered to organize and attend meetings with members of the board of education and the superintendent of schools to enlist their support. Also, the school's Community Board, a board consisting of staff, parents, students, and community supporters of the Durant School, decided to organize and sponsor a local conference, open to the public, on the effects of the state exams on student learning.

Meanwhile, the school also turned to the media, especially the local daily newspaper, to publicize its plight. The principal's guest editorial on the negative effects of the state exams on the Durant School was published in mid-November, followed by an in-depth article on the school a few days later. When the same newspaper then published its own editorial claiming that the school could both maintain its program *and* prepare its students for the state exams, an English teacher in the school swiftly responded. In his published letter, he chastised the editorial board for its lack of evidence that the school could do both, indicating that it had not adequately researched the issue. The school also turned to a local radio station for public outreach. Soon the principal, a parent, and a psychology professor from a local university (who was also a Durant School Community Board member) appeared together on a talk show to discuss the testing mandates and their effects on learning.

It was also in November 1998 that a Durant math teacher suggested during a school-based planning team meeting that the school contact state legislators in an effort to gain their support. His reasoning was that even though the commissioner of education and his board had set the state exam policy, the legislators were the ones in charge of implementation. Following this suggestion, staff, parents, students, alumni, and Community Board members began to write letters to local state legislators, asking for support of the variance. The school also began to solicit the support of business leaders who, it was hoped, could influence the state politicians and education leaders.

The public relations campaign continued to gain steam through the winter of 1999. The principal devoted several hours each day to drumming up support for the variance request, arranging meetings with political, business, and state education leaders, and seeking public opportunities to

spread the word of the harmful effects of the standards mandates on the school. Two parents in particular consistently worked on these efforts with him; the supportive school board member offered strategic advice; and various staff, students, parents, alumni, and Community Board members also volunteered. Staff and school-based planning meetings were filled with regular discussions on the efforts to secure the variance from the state tests. The fight had gained a preeminent position in the school's day-to-day operations, and though staff experienced much stress as a result, they were unwilling to capitulate to the standards mandates.

In February the Community Board–sponsored conference on the state standards and testing was held. Approximately 100 persons heard Monty Neill, the executive director of the National Center for Fair and Open Testing, give an impassioned keynote address, and lively debate among local and state educators ensued throughout the evening. This event, covered by local television, radio, and newspaper media, was coincidentally followed the next day by a regional hearing on the standards, sponsored by the state education department. Several members of the Durant School community testified, and according to the principal, the students' personal stories of their educational experiences had a profound effect on one member of the commissioner's board, who publicly stated afterwards that she would support a waiver for the school. Buoyed by these small steps, the school pressed on, and more meetings were held with political and educational leaders throughout the spring. Even when support was not secured with these efforts, the principal was pleased that at least the standards and testing mandates had been raised publicly as an issue that merited deep critical consideration, and that the Durant School had put the word out.

By June 1999 significant local support for a variance had been attained. The superintendent of the city schools, assured that the alternative assessments in the group waiver were, in fact, aligned with the broad state learning standards, had quietly signed on. In turn, the board of education passed a resolution of support for the waiver, and even the editorial board of the daily newspaper changed its position and came out in favor of a variance for alternative schools. A number of local legislators had responded to the school's requests for support with letters to the education commissioner, asking him to grant the school a variance as well. There was a greater sense of optimism that a variance really was within reach, and that the school's integrity could be preserved.

It was also in June that the Durant School began to lobby the legislative chairs of the joint state education committee, an association that would prove especially advantageous in the coming months. The principal had always maintained that if the state education department and the education commissioner did not approve a variance, then special legislation was an-

other possibility. Thus, when the joint legislative education committee announced a June hearing in the state capital to examine the impact of the standards mandates and testing on schools, the principal welcomed the opportunity to make the case for the waiver and gain support for the Durant School's plight. After some preliminary strategy meetings in the weeks before the hearing, about a dozen Durant School representatives —students, staff, parents, Community Board members, and alumni—traveled over 200 miles by rented van to testify. Several other representatives from the alliance of schools seeking the group variance testified as well, and by the day's end the committee chairs expressed sympathy for the variance request, especially as the students' testimonies to these schools' positive effects on their lives had been, in the chairs' opinion, so persuasive.

Summer 1999, though slower paced, did see two significant developments in the fight: the mayor wrote a letter to the education commissioner in support of the variance, and a majority of the local legislators signed a provariance petition, also addressed to the commissioner. However, as the new school year commenced in September, the cautious optimism in the school began to wane. A ruling on the group variance, now formally submitted, remained pending, and teachers and students expressed deep feelings of anxiety and frustration as they awaited a decision. The education commissioner, they observed, seemed more intransigent than ever as he adamantly and frequently proclaimed in the media that there would be no retreat from the state standards—an ominous sign, they believed, for the variance.

This apprehension only increased as the missives from the state education department consistently emphasized that the only viable alternative assessments to the state exams would be other externally developed tests. Performance-based assessments, it seemed, were not even considered an option. Despite this pessimism, the Community Board did sponsor another conference at the school on the effects of the standards mandates in an attempt to educate and galvanize the public. However, turnout was poor, and several in the Durant School community interpreted this low attendance as an indication that the standards had already been accepted as a fait accompli. They also despaired of any prospect of a statewide opposition movement. Still, a letter-writing campaign, organized by a parent, was launched to intensify the pressure on political and educational leaders, and the school continued to wait anxiously for an official ruling on the variance.

It was during this bleak period that a group of Durant School students, disgusted by the fact-filled, rote learning of their newly mandated history class, decided to act. Second-year students, they had previously experienced the pleasure of the school's learner-centered classes, and they were outraged by the difference in this class, especially as it was instigated by the state standards. When the school

sent representatives to speak at a regional joint legislative education committee hearing, this time only 100 miles away, about twenty students voluntarily attended, either to testify or show support. Again, the committee was deeply impressed by the students' spirit and pride in their school, and a legislative aide privately predicted that the waiver would be granted. This development, combined with reports that other students from the alliance of nontraditional schools had also made a strong impression at their regional hearing, helped reenergize the fight. In addition, the staff began to work monthly with a volunteer business consultant on ways to focus their energy in fighting the mandates and gaining support for the variance.

In December 1999 the state's official response to the variance request began to take shape as the Assessment Panel of the State Education Department granted the alliance of schools a hearing in which to present their assessments. The alliance, in turn, solicited six nationally known educational leaders, all friends of the alliance schools, to make the presentation. Not only did the alliance believe that these leaders, who also served on the alliance's performance assessment review board, would present a strong and convincing case, but they also believed, according to the Durant School principal, that their prestige would lend political weight to the variance request. The night before the hearing, the six leaders gathered with several representatives from the alliance schools to discuss strategy and outline the presentation. At the two-hour hearing the following day, the six argued the case for the variance, answered questions from the committee, and defended the quality of the alliance's system of assessment. When the hearing concluded, a press conference, arranged by the alliance, was held in which the presenters attested to the urgent need for the variance.

That same day, the state's Assessment Panel issued its recommendation to the education commissioner: only a partial variance be granted, limited to the schools covered by a previous variance from state exams and good for only one year. This limitation excluded the Durant School from the variance. When this recommendation was made known, the Durant School immediately intensified its campaign. The principal and several parents implored the school community to call and write letters to the legislative education committee members, urging them to request a full variance for the school from the commissioner. The community responded with a flurry of activity. The alliance, in turn, scheduled meetings with the education committee chairs to ask them to lobby the commissioner for the full variance as well.

Finally, the day of reckoning arrived at the end of January 2000. The commissioner, following most of the panel's recommendations, issued a partial variance through the 2000–2001 school year, limited to the alliance schools in the previous variance. However, he did approve an extension of the variance to any remaining al-

liance schools that could demonstrate they had met the criteria of the alliance. This extension provision kept the Durant School's hopes alive, as they were certain of having already met all the criteria. By March, after the school had submitted proper documentation, the commissioner ruled that the Durant School was also covered under the temporary waiver. Significantly, the daily newspaper reported the story on the same day as it published an in-depth feature article on the Durant School in its series on the city schools, an article that had been actively solicited by the principal.

As of March 2000, the partial variance was only a partial victory. Keeping in mind that the five exams are being gradually phased in, seniors in 2000 were exempt from their only required exam, English Language Arts. Juniors, however, were required to take and pass the English Language Arts exam to graduate, though they were exempt from the requisite state math exam, the second exam to be phased in. Sophomores and freshmen have no exemptions; they must pass four and five exams, respectively, in English language arts, math, world history, American history, and science, as all five mandated exams will be required of the class of 2003.

Despite the commissioner's ruling, the fight is not over. The Durant School, both alone and with the alliance, continues to devise strategy, lobby for supporters, and struggle to attain a full and complete variance. The activist spirit in which this school was created is alive and well, and it still offers hope thirty years later. In particular, it offers a model of how a sociopolitical process of advocacy and campaigning can turn the juggernaut of external forces in ways that benefit the educational endeavor. For, contrary to the position of the standards movement proponents, educational success, as epitomized by this school, is indeed attainable through the efforts of internal agents—coalitions of teachers, students, and parents. These are the only agents who can truly know a particular school and thus possess the insight to determine what makes it "succeed" in the most profound sense of the word, not as a simplistic reduction to a standardized test score.

Note

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WE SET OUR OWN BAR, OR DO WE?

Developing and Complying with Accreditation Standards for School Improvement

Carol A. Mullen and Leah Stover

Introducing a Case Study of School Accreditation

We approach this chapter not as a report or an overview of the middle school accreditation process. Instead, we focus on some of the critical contradictions or tensions that became evident to us in the process of both developing and meeting standards through an accredited agency that oversees the school improvement planning of schools. A theme that permeates this chapter is the issue of social justice and exclusivity of teachers, who are proactively changing their schools, using the standards debate. From this perspective, our text raises questions about educational purpose, school reform, and policy standards using the story of a school's accreditation process as its leverage for discussing the "intensifying need for savvy knowledge workers" in the early years of the new millennium (Kincheloe, Introduction, p. 2). More attention needs to be focused on the places and people intimately involved in the standards movement, and on how standards specifically shape the professional work of teachers and the school culture.

We are a researcher in educational leadership (Carol Mullen) and lead teacher (Leah Stover) who have collaborated in order to depict the efforts of one middle school in Alabama to obtain accreditation through compliance with national-level standards. The teacher-researcher (coauthor) of this study has defined "accreditation" as a specific educational standard underscoring a process of quality control that is expected by state-level departments of education and regional educational services. Further, she thinks

of accreditation as a stamp of approval for our school indicating that certain minimum standards have been met in regard to class size, support personnel, numbers of books in the library, and so forth. But there also needs to be sufficient evidence that the school is functioning, through a process of self-study, as a reflective learning organization.

However, as this case study will reveal, the association with standards in this school is not only a rigorous means through which a "reflective learning organization" is created, but also a means to create a bureaucracy that has the potential to stifle any real change, thus reducing accreditation to a technical standard only. The accreditation activity that continues at this middle school is compulsory, not voluntary. The state of Alabama had been in the business of accrediting schools until about five years ago. When the state stopped accrediting schools, a deadline was set for institutions to seek their own accreditation through an outside agency. Many schools and systems in Alabama were already accredited by outside agencies like the Southern Association of Colleges and Schools (SACS), but the county in which this school is located was one of the last "holdouts." In the end, because some type of accreditation is compulsory for schools in the U.S., this school's district chose SACS as its accrediting agency.

During our probing conversations with each other, a number of intriguing contradictions arose that forced us to rethink the direction of this piece. The tensions that emerged demanded our attention, and so we interrupted our plan to offer a neutral overview of a school's process of engagement in the standards and policies that guide self-study research. This text provides a provocative look at a school improvement process as part of the larger theme of standards in education. The fact that school ownership is both a journey of professional development and the product of a corporate culture is a core contradiction of the school improvement framework.

This school study unravels a number of key tensions that we hope will expose the reader to core contradictions in the accrediting process that are integrally connected to the issue of educational standards. Also, the contradictions we have identified raise "social questions concerning inclusivity and justice in a high-standards educational system" (Kincheloe, Introduction, p. 1) not only for minority and disenfranchised students (Becker, 1998), but also for teachers whose (dis)empowerment constitutes the focus of this study.

Typically, studies of school evaluation are released into the world subsequent to their final assessment by an accredited institution, but this chapter was prepared at the end of 1999 prior to the final stage of the self-study collaborative process, which focuses on the school's action plan and has since become documented (see Mullen with Stover & Corley, 2001). The university researcher conducted this reflective analysis and writing with her teacher-participant several months be-

fore the final outcome of the whole-school evaluation for two reasons. First, to develop a reflection on the self-study school process that would capture Leah's thinking before the final decision had been made by the accrediting agency. Studies on autobiographical memory functioning (e.g., Linton, 1986) indicate that details of events dim over time, and that they can even be influenced by the outcome of a major decision. And second, to give as much value as possible to the experiential knowledge of the lead teacher without compromising her voice through the final determination of the accrediting body. Therefore, the outcome of this school improvement plan as determined by the decision of the accrediting body is not relevant to this analysis.

Background: School and Policy Context

The 1998–1999 year constituted the initial accreditation of a rural-industrial middle school in the state of Alabama in the United States. The National Study of School Evaluation (NSSE) is an organization that has worked in consultation with regional-level accreditation commissions to produce required guidelines for school improvement. Schools are being held accountable at the district, state, and national levels to meet the standards for improvement planning in order to be accredited (Oliva, 1997).

As project director for NSSE, Fitzpatrick (1997) has described this evaluative process in NSSE's guidelines called *School Improvement: Focusing on Student Performance*. She claims the schools that engage in the accreditation process are invited to build a self-study school improvement plan. This plan focuses on student performance, and instructional and organizational effectiveness, using "a research-based framework and a series of design questions to help guide the journey, not prescribe the path" (Introduction). This statement is controversial, as our case study will demonstrate.

The school district oversees the selection of SACS as the accrediting body that governs the regional evaluation of its schools. SACS accredits more than 12,000 public and private educational institutions at both the school and university level in 11 states of the southeastern United States and in Latin America. It is one of six regional accrediting organizations in the country recognized by the U.S. Department of Education (http://www.sacs.org.abtSacs.htm). Like the National Study of School Evaluation, the International Council of School Accreditation Commissions (of which SACS is a subdivision) is a nonprofit body (*Nonprofit Yellow Pages*, http://www.npyp.net/nonprofitsearch). We will inductively describe how NSSE and SACS function with corporate control as part of our self-study narrative of one school.

The middle school of this study is a public, rural institution with 586 students and 37 teachers; it educates grades 5 through 8. The SACS facilitator recommended that the narrative of the school's history be dropped

from their report. However, certain aspects of its history and current status are noteworthy and so they will be highlighted here. The students live in a rural community but not an agricultural one; most parents work in the surrounding cities. The 1998 household survey that was distributed to the parents affiliated with this school indicates that the majority of the children are either in traditional households headed by a mother and father or in family units headed by a parent and stepparent. Many of the male guardians work as mechanics and in the construction trades and production occupations. Most of the female guardians work in administrative and specialist occupations as well as sales occupations; many are also homemakers. As another point of interest, the school was constructed in 1952 to serve the African-American population in its county. The school's ethnic composition in 1999 was 72.8 percent white, 26 percent black, and 1.2 percent other; like its student population, the teachers are predominately white.

Another characteristic of the school is that the students are performing above the normal aptitude indicated by the Sanford Achievement Test, Ninth Edition (SAT-9). This is the primary national and state standard by which a school's overall academic achievement is measured. Another feature of this school is that it is "student centered" and supportive of a "whole-community concept." The emphasis on community is evidenced by the school's extensive support of cocurricular activities such as art, a technology student association, and a student-run bank, in addition to the basic academics. Moreover, this is a Professional Development School (PDS) affiliated with a major research university in Alabama (*Middle School Improvement Report*, *Part One*, April 1999). The school-university relationship offers this school resources and research and teaching support.

It is important to recognize, as the informant in this study testifies, that the instructional staff at her school focus on authentic types of testing. For Leah, the statement "Standards and testing go hand in hand" (Gergen, 1997, p. 80) that appeared in *U.S. News & World Report* is controversial and even disturbing, unless by "testing" the phrase "authentic testing" is meant. As Leah explained, "Teacher-directed testing is more criterion focused, whereas standardized testing is more random or arbitrary." She described how for the social sciences, her teaching subject, students are tested on the SAT-9 beyond her curriculum into areas (e.g., world history) that do not fall within the scope of the social sciences field for middle school learners. From this perspective, the national testing in her subject area feels arbitrary. Another educator, Schrag (1998), has written that most short-answer tests like the SAT "don't measure what they pretend to measure and therefore are inherently unfair and distort teaching and curricula" (p. 73).

The students at Leah's school find the national standardized tests very frustrating and unrewarding. Leah agrees with Schrag's (1998) provoca-

tive statement that "The longest distance in the world is between an official state curriculum policy paper and what goes on in a child's mind" (p. 73). Asked what message she would like to communicate to the nation about standardized testing, Leah made this clear proclamation:

> Teachers and administration do not appreciate the way that our state approaches the standardized testing program. The state takes our scores and uses them to give the school a grade, comparing the schools within the state to one another. This grade does not reflect what is going on in the schools; instead, it simplifies and even distorts the complexity of school life and gives far too much weight to a single variable. When parents read the daily newspaper, they draw premature conclusions about the worth of schools based on the grades they've received.

During the researcher's reflective conversations with Leah and others about the accreditation process, standardized testing was rarely mentioned. Carol wondered why this was. Leah later explained that the teachers had "consciously made a decision at the outset of the accreditation process to not let the issue of test scores become the driving force behind our improved standards that the self-study program meant to us." The faculty team, then, had essentially empowered itself to focus on authentic types of testing because this was their chosen modus operandi for engaging their student body and itself in meaningful learning. Also, the SAT-9 and other test scores had turned out to be more than acceptable for this school anyway, so the national hype about standardized testing was a background issue only for the experienced teachers. According to Leah, the instructional staff persisted with the accreditation process because it had validated and even encouraged the school's team approach to authentic testing: "We were allowed to continue on the same road that we had been traveling."

Now we turn to the major tensions that arose for the university researcher during her conversations with the lead teacher about the accreditation process. The tensions have been exposed and explored, not resolved, in this chapter. We do not argue for any one perspective over another, although we do provide a suggestive critique of certain aspects of the accreditation process and of the standards movement itself where teachers have not been made partners in the decision-making process. The reader's interpretation plays a central role in this text and it could be used to extend, modify, or debate each of the tensions and overall analysis.

Tension 1: Ownership and Control of the Process

The School Takes Ownership

We begin with the topic of school ownership, as this seems to be the crux of the issue for all three participating bodies—the school team, SACS, and NSSE. "One good thing about SACS,"

commented the lead teacher of the school team, "we set our own bar." Leah explained that the school faculty team is supposed to take ownership of their own school improvement process and that there are countless ways to accomplish this task. For example, her school team created the list of standards that would help them to measure their school improvement planning. One such important standard revolved around the question, "What results for student learning does our own population need?" Leah also shared the fact that the school team sets the standards for the action plan, which is part five of the mandatory NSSE guidelines.

SACS supports the concept of school ownership/accountability in relation to the effort of member institutions to plan comprehensive self-evaluations that assist them in achieving their goals (http://www.sacs.org.abt Sacs.htm). This means that the responsibility for devising and meeting standards for school improvement should belong to the schools themselves. The process of planning for increased student learning and organizational effectiveness through regulated continuous improvement is intended to give ownership to the faculty (teachers and staff) so that they will guide the vision and work of school improvement. The idea of school ownership of the accreditation process is supported by the fact that administrators are not central to the process even though as school stakeholders they obviously have an interest.

How is the accreditation process organized in the K-12 environment? Each part of the SACS process involves the work of a separate committee of faculty, staff, and parents; in total, six committees are required. This idea was explained at the orientation that the school team underwent in 1998, the initial step in setting up the process for SACS accreditation.

The school team was encouraged by SACS to designate chairs for each of the six committees, including a faculty member to head the steering committee. The school chose two steering committee chairs to make the overall workload more manageable for the individuals involved. (Leah and her cochair split the stipend that the school district, not SACS, pays.) The work is time intensive and many errands need to be handled on a regular basis.

The cochairs are two experienced female practitioners in their 30s. Leah, the coauthor of this publication, is in her ninth year of teaching; she has been at this school for four years. She teaches history to eighth graders. Leah holds a B.S. and M.Ed. and is pursuing a doctorate. Leah's cochair is in her eighth year at the school; she teaches creative writing to seventh graders. Each of the major parts of the NSSE school improvement-planning framework that Fitzpatrick (1997) describes has a corresponding committee leader at the school (see Table 2). Leah and her steering committee cochair orchestrate the work, documentation, and progress of all of the committees. They are accountable to the school faculty, administrators, par-

ents, and the SACS facilitator. The school faculty and the committee chairs are accountable to Leah and her cochair.

SACS Takes Ownership

The position that the school has control over the school improvement process is just one position that one can take. Now we offer another interpretation that runs counter to the ideology of school and faculty ownership that NSSE and SACS espouse and that schools probably want to believe. The position that SACS supports the school improvement process (in the same way that is understood when one thinks of positive collegiality in the workplace) is controversial and provocative. The tone of the checklist that SACS distributes (Commission on Elementary and Middle Schools, Southern Association of Colleges and Schools, 1998–1999) is transparent in its top-down, legal control of schools that undergo accreditation. One such statement from this official checklist follows:

> The decision to seek accreditation and membership in the Association shall be based on a clear understanding of the standards and a commitment that the school will be in compliance with said standards. All new schools shall meet all standards at the time of initial self-study and corresponding team visit. (p. 7)

The terms "deficiency" and "violation" as well as "probation" and ostracization ("dropped from membership") are used throughout the checklist. The document outlines legalistic consequences for noncompliant schools. This section, which precedes the actual statement of standards and policies for middle school accreditation, could serve as a disturbing "welcoming" for the initiating school team. Moreover, the description of a regional hearing procedure for schools placed on probation and dropped for violation of standards is highlighted. The strong implication is that middle schools that fail to conform to the standards will be perceived and handled differently from compliant schools, a consequence that could easily produce paranoia for some faculty/staff teams.

Given the nature of the SACS checklist, it is hard to imagine a school faculty that would feel unconditionally empowered to make its own decisions or to pursue its school improvement plan without the threat of negative legal outcomes. It would require a great act of collective and individual will to reconstruct the legal spirit of this document using the optimistic words of the journey that NSSE, the partner of SACS, has printed.

Within the top-down bureaucratic context just depicted, consider as an example the position SACS takes regarding the use of survey instruments. Part 1 of NSSE's planning framework, called "developing the profile," mandates that four different surveys be administered. The school's outside facilitator required that these surveys be purchased from SACS. In a positive

light, it can be argued that the SACS surveys provide a necessary service to schools and at a reasonable cost. In a problematic light, the independent capacity of some schools to fend for themselves when it comes to human and material resources is being overlooked. Or, a stronger possibility is that the ability of some schools to create their own surveys and to tally the results would be considered biased and subjective, even though the SACS facilitator could be used to assure trustworthiness in the process.

Consider the school that is our focus—it is a PDS school affiliated with a university whose human and financial resources could have been used for the SACS project. Undergraduate majors in education could have scored the statistics that were gathered through the surveys; they could even have designed the survey instruments, which would have eliminated two sets of costs that SACS requires—the purchasing of the many surveys and the scoring of them through their regional office. Given both sides of the issue, the negative (cost) outweighs the positive (value) for this school because of the many resources it has ready access to. The same situation would be true to varying degrees for many other PDS schools.

We ask what is for us an unresolved, ambivalent question, "We set our own bar, or do we?" It appears that while the school controls aspects of the school improvement/accreditation process, so does the regional accrediting body, the school district, and NSSE. Although the goal is to create a location-specific school profile, there are multiple stakeholders and layers of decision making involved in this complex process and its outcome. Paradoxically, it appears that the ownership of the process for the school is defined by its successful compliance with external standards, which are very general to the point of being vague. One such example of a SACS standard reads: "The beliefs, mission, and programs of the school shall reflect the needs of the community" (p. 12), which makes us wonder what the difference is between an actual standard and a general principle.

Tension 2: Meeting Standards through Self-Study Collaboration

When building a plan, the school is exposed to many elements that are required in order to meet the standards of self-study school improvement: the creation of a focus team, the collection and analysis of data, self-assessment, and evaluation by a group of peers (volunteers from other schools) who assess the school's plan. On the one hand, the school faculty guide the self-study collaborative process; on the other hand, the team is exposed to a step-by-step process involving standards that must be met in order to achieve success.

At the orientation seminar in 1998, teachers and school administrators from this middle school worked with consultants who had successfully completed the SACS accreditation process. Over the span of one weekend,

the consultants gave advice. The school's representatives were told about obstacles, how to avoid and navigate them, and how to go through a self-study collaborative process. It was explained to Leah and her team that they needed to be positive with their faculty, because failure to enlist their assistance would create a serious obstacle. A lack of teamwork, confidence, or solidarity would, they were told, result in an invalid instrument. The reason why validity is such an issue here is that the instrument is supposed to be something that everyone contributes to: feedback needs to be elicited from all stakeholder groups (teachers, staff, parents, students, and administrators), as it was by this school.

The faculty team at Leah's school elicited feedback from all of its stakeholder groups. It also approached the self-study portion of the accreditation process by enlisting the collaboration of the school. Under the direction of the beliefs and mission committee of the school, the faculty/staff team met in small groups to work on defining the school's belief statements and to gather ideas on how to incorporate currently held beliefs into a revised mission statement. In order to build consensus concerning school beliefs, each group member was asked to complete the NSSE Schools Beliefs Inventory and to make suggestions concerning beliefs that may not have been addressed in the inventory. Once the group members completed the inventory, the groups met to determine which ten of the twenty beliefs listed should receive top priority. These groups then examined the school's existing mission statement and made suggestions on how to revise this statement so that it would more accurately correlate with the beliefs they had listed as priorities. The proposed belief and mission statements were distributed to staff members and other stakeholders, and the beliefs and mission committee considered changes.

The final mission statement targeted student learning as the primary focus of the school. It also featured the proposition that instructional practices must promote excellence in student performance through a variety of learning activities that accommodate differences in student learning styles. The belief statements that were produced reiterate these points and include others. One overarching idea the team documented was to develop new expectations of itself as a cohesive community that is invested in both school performance and lifelong learning of its students.

The documents that SACS provides are general, targeting what the school should improve and how to go about it. SACS standards indicate that the focus is to be on students and their academic performance. SACS guidelines also emphasize the key importance of stakeholders (faculty, staff, parents, and administrators) and the gains they will make as a result of this process. Leah and her faculty team found some of the SACS documents helpful for assisting them in the planning stages for school improvement.

Leah thinks it is very useful to identify those student skills that are neces-

sary for future academic and social success, to closely examine indicators, and to develop a holistic way of looking at outcomes. In this school, the student skills that have been identified include the ability to use technology, develop critical thinking techniques, and make cross-curriculum connections. She claims it proved challenging to not only have to articulate how teachers knew what skills and objectives they were teaching, but also to provide evidence proving that these were being mastered in each classroom. One way the school went about collecting this evidence was through the development of grade-level portfolios. Each grade level was asked to review a checklist of skills deemed important and to compile student work samples and teacher assignments as proof of exposure to a variety of objectives.

Leah pointed out that the way the parts (as outlined in the NSSE guide) build on one another is helpful. The idea is to use the information developed in each of the sections for the subsequent sections (see Table 1).

For example, before the school's mission and beliefs can be established, a profile of the community and its expectations must be gathered. Then, when the mission and beliefs are codified, the team can begin to establish the "desired results for student learning" (part three). Then, based on these desired student outcomes, the faculty must evaluate how it manages resources, time, and curriculum concerns in the "instructional and organizational effectiveness" portion of the plan (part four). In early 2000 Leah was using the instructional and organizational effectiveness survey that SACS provided and the results that were generated, in conjunction with the established desired results for student learning, to develop an action plan for the school.

TABLE 1
The Cyclical Planning Process of NSSE (National Study of School Evaluation)

Part 1	Developing the profile
Part 2	Defining the school's beliefs and mission
Part 3	Defining desired results for student learning: Focusing on the quality of the work of students
Part 4	Analyzing instructional and organizational effectiveness: Focusing on the quality of the work of the school
Part 5	Developing the action plan
Part 6	Implementing the school improvement plan and documenting results

Tension 3: Authenticity at Odds with Commercialization

One implication of school ownership is that it should be focused on the collaborative learning and decision making of practitioners. But corporate culture is a major force that is driving the process of evaluation for school accreditation. Because NSSE and SACS are nonprofit organizations, it is easy to imagine that the accreditation process each school experiences under their auspices must be fash-

ioned according to the individual design (e.g., goals, processes, and resources) of the schools themselves. However, many nonoptional, structural elements are involved in the school improvement project and they cost money.

Steinberg and Kincheloe (1997), among other critical theorists, discuss how corporate power has expanded over the last few decades and, along with this, the influence of profound political forces of manipulation in schools and in children's lives. Corporate control can affect the accreditation process and its power hierarchy, the attempt at school ownership, and the choices schools are forced to make. It can also encourage profiteering from school improvement associations. As Kaufman (1999), a college administrator in Alabama, reports, "Very few schools fail accreditation and almost all seem to muddle through but remember that to fail your first visit means your cost for accreditation doubles anywhere from $50,000 to $500,000 for a second time" (p. 9).

While accreditation for the purpose of self-improvement can be embraced as an authentic ideal for schools and teachers, the middle school accreditation process has glaring commercial elements. This is not surprising when one witnesses how pedagogy in schools has merged with the forces of capitalism. McLaren (1999) aptly writes, "It is impossible to examine educational reform in the United States without taking into account continuing forces of globalization and the progressive diversion of capital into . . . financial . . . channels—what some have called 'fat cat capitalism'" (p. 277).

Our criticism of the NSSE surveys and their nonnegotiable use and expense has already been highlighted. The school team was also required to purchase all of the NSSE materials that the SACS facilitator wanted them to use. The school was instructed to purchase planning manuals for each committee chair and both steering committee chairs as well as a research database to use in sections three and four. SACS charges a fee to score the surveys and the school's facilitator frowned upon the use of an alternative scoring service. But the school empowered itself to use an alternative anyway—a professor's undergraduate class—through its university or PDS connection.

Commercialization of the school accreditation process involves not just required expenses but also enforced image management. For example, image control became conspicuous when the school was told to delete the criticism of SACS in the report that was produced by the undergraduate class that, as an exercise only, was given the survey items to score. The university students took it upon themselves to critique the SACS instrument that ranks the school in a variety of areas related to curriculum, assessment, and community building. The students concluded that the survey items were too convoluted because they contain multiple variables in each question that describe different phenomena;

they recommended that each question be broken down into several questions. The school team agreed with this position.

A statement on the SACS assessment survey concerning the maintenance of a safe, efficient, and effective learning environment provides an example of multiple variables. A single statement was designed to assess whether a safe, efficient, and effective learning environment is being maintained; this is a good example of a multivariable assessment item. In another item, classroom management, organizational strategies, basic knowledge, and skills, as well as the use of higher-order thinking activities, are to be measured with one rating! The mandatory use of confusing survey instruments is arguably an ethical issue that needs to be examined in the school improvement process. Another problem is that the steering committee at the school does not know what variables each faculty member focused on as they were rating these ambiguous items, which makes it tricky to establish the strengths and weaknesses of the school.

As another example of externally imposed image management, the school system plans to finance a dinner for the peer reviewers (teacher-evaluators) from another school system in mid-2000 that will resemble a tea party. In these lean monetary times for rural school systems, one cannot help but question how this reserve could be better spent. Table 2 provides this expense along with the costs (e.g., outside facilitator and site facilitator, annual dues, assessment surveys) that this school has accumulated as part of the process of being accredited by SACS.

Tension 4: Choice between Integrity and Deception

Carol asked Leah, "Can a self-study accreditation process be faked by a school?" to which she replied, "No, well maybe yes."

The Process Cannot Be Faked

Leah believes that such a process cannot be easily counterfeited because a data bank needs to be generated. This means that evidence and proof must be provided for all claims made by the school team. The actual supporting evidence or raw materials, such as the surveys, all need to be included in the final SACS report. In fact, anything that is listed as evidence must be located in a file that evaluators have access to. This includes minutes that are taken at relevant meetings as well as the attendance sheets that include signatures. Also, the steering committee chair needs to produce documents or portions of them for the five committee chairs who require assistance in their individual areas of the self-study project, especially where a holistic view of it is required. (In total there are six parts to the final SACS report, but one is to be completed two years after accreditation; the school did not have a committee appointed for section six as of late 1999.) Leah and her cochair revised the documents that

TABLE 2
Estimated Accreditation Expenses for One Middle School

Estimated District Cost per School	
Outside Facilitator and Site Facilitator Stipends	$4000.00
Outside Facilitator ($300.00/day not to exceed $1800.00)	$1800.00
Site Facilitator Stipend	$1500.00
Estimated Total Cost per School	$7300.00
Accrued Costs to Date	
Annual Dues (1998–1999/1999–2000)	$1000.00
School Improvement: Focusing on Student Performance (program guide)	
One per committee chair for a total of 7 at $30.00 each	$210.00
Section One Opinion Inventories (total of 350 surveys)	$220.00
Scoring of Section One Opinion Inventories	
295 at $.40 each + $ 240.00	$358.00
Schoolwide Indicators of Quality (research text for sections 1–3)	$40.00
Survey for Section Four—Survey of Instructional and	
Organizational Effectiveness (30 Surveys)	$90.00
Total Spent as of January 2000	$1998.80
ANTICIPATED COSTS REMAINING	
Report Publishing	$200.00
Visiting Team Chairperson Stipend	$500.00
Visiting Team Travel and Hotel	$500.00
Visiting Team Reception	$400.00
School Celebration	$500.00
Total Remaining Costs (estimated)	$2100.00

these committees generated and they also produced entire documents themselves. The program cochairs have created informal surveys and checklists, gathered evidence to back up each section report, and at times have completely rewritten committee reports upon the request of the SACS facilitator.

Leah and her cochair see themselves as "servant leaders" who provide guidance at every meeting and during and outside school hours—they offer timely feedback, suggestions for improvement, and more. Their approach to leadership stresses efficiency and sensitivity to the group process. For example, Leah or her cochair attend and facilitate all of the committee meetings for the five sections, each of which has an individual chair. Leah says that because she and her cochair have a more thorough understanding of the overall school study and accreditation process, they provide the section chairs with an itiner-

ary but the section chairs actually run the meetings themselves. They pulled together the information they needed through the work of the committee members and themselves. Leah and the cochair are an integral part of the "real" work. They do not believe in using their position to simply delegate responsibility to the faculty, staff, and parents, nor could they. The process is incremental and multidimensional, to the point that these steering committee chairs could not separate themselves from any part of the process.

Moreover, the process is hard to fake because even at the outset the accrediting body makes recommendations. As one example, this school was required to hire a library aide to meet one of the SACS standards because they were, operationally speaking, short qualified school personnel. By hiring this individual and by engaging as authentically as possible in the entire process, the school team has made the exercise of internal reform "real."

The Process Can Be Faked

Leah shared that the process of self-study improvement for the purpose of accreditation can be faked, either in part or even in whole. She knows of one such situation in which a principal and the assistant principal concocted the entire report just before it was due. They did include the minimal data (surveys) but Leah did not know whether the data on these research instruments was "real" or faked.

Leah also commented on the one extreme case in her own school in which a faculty member avoided doing the work that he was responsible for—the first part of the report. He had requested information on demographics from a higher authority outside the school instead of doing the work himself. The key players reprimanded him for this move because they felt it would have compromised both the integrity of their school and the integrity of the improvement process. The problem of potential "fakery" was therefore corrected in this early stage.

Leah and her colleagues pride themselves on the authenticity of their teamwork and of their data-driven research process. They do not tolerate the illusion of project development and collaboration because such a stance will only serve to undercut the good that can come out of this challenging process. Leah and her cochair determined at the outset that school improvement planning was far too detailed and time-consuming to be placed on a shelf once it was completed until it was time for re-accreditation. They want the improvement-planning report to be a useful tool in increasing and documenting student outcomes as well as in expanding professional development and accountability for teachers.

The Process Needs to Be Real

Leah claims that "the school improvement report needs to have been an authentic undertaking so that student learning and outcomes can be improved." This is not to suggest that curriculum evaluation is a completely

transparent, truth-identifying process, though. Like most curriculum development programs, processes for evaluating school improvement are partly based on perceived judgment of success, faculty and administrative assertions, participants' feelings about and investment in the school, public relations, and perceived leadership (Oliva, 1997).

Leah is focused on identifying real issues that require her team's attention, such as the apathy they believe their community feels toward the students' academic performance. The parents and other stakeholders are not apathetic toward the children's cocurricular activities, especially athletics—in fact they are highly supportive. As is typical of many schools in this rural area, the community lacks a focus on academics, an attitude that gets channeled through the students. The fact that students at this school do well on the Stanford Achievement Test is a testimony to what can be accomplished within the school day. Students are highly engaged in skills-directed activities within school hours, only to be left on their own after the dismissal bell rings without supervision on their homework.

Evidence of community apathy at this school is apparent in poor attendance at its academic open house events where about 25 percent of parents and students are seen. Another indicator is poor performance on homework. Only 60 percent of eighth-grade students at the school regularly turn in completed homework. Despite the apathy of the majority, the Parent-Teacher Organization (PTO) has pulled in parents to work on the individual SACS committees in the school. Parents have assisted by providing data even when their schedules have conflicted with the times of the meetings.

Tension 5: Evaluation of Self and SACS

The researcher asked, "What proved most challenging about the school improvement process for you and your team?" Leah responded that there were many challenges but they were typically of an organizational and interpersonal nature rather than of an intellectual one. However, some of the documents proved challenging to put together, especially the ones that require an explanation of how the faculty team plans to improve its school. The peer leaders need to secure a great deal of support from faculty.

Carol also asked, "What if your faculty team does not have a successful final outcome in the eyes of SACS?" This is not a major concern for Leah because "the SACS accreditation process is not a very strenuous type of evaluation. The key to the success of this process at my school is the collaborative effort at developing and meeting the standards." Kaufman (1999) has calculated that the SACS accreditation of a college costs an immeasurable amount in terms of psychological strain on those directly involved. Moreover, he emphasizes that there is a high cost in producing a professional workforce if it has no previous experi-

ence with the accreditation process through institutions of higher education, the school system, or school-university arrangements. As a PDS representative at the university level, Carol initiated this study with Leah partly in the attempt to accommodate this need within the profession.

One interpersonal challenge at this school has been that the stakeholders (faculty, staff, and parents) voiced different opinions that had to be negotiated. For instance, for the "school and community profile" in section one, several parents wanted the community to be referred to as the "school's community" rather than the "larger geographic area." The committee members of section one had to make the decision about what wording would be used. When this portion of the document was released, faculty and stakeholders accepted the original wording using the name of the larger community (not identified in this publication) without further question.

Unexpectedly, it was relatively minor issues such as wording that seemed to cause the most tension. As another example, during the development of the school's mission and beliefs, there was considerable debate over the use of the words "among" or "between" or "among and between" in this statement: "A student's self-esteem is enhanced by positive relationships and mutual respect among and between students and staff." The school team negotiated and finally agreed that the use of both words covered what was intended.

When the school faculty gathered to vote on each section, they were asked whether they could accept the committee report under question. A vote of 80 percent is required to claim consensus in order to proceed with the work. It was difficult to get school faculty to take time out of their busy schedules for the improvement project. Leah offered this insight: "Some teachers and staff perceived the experience as jumping through hoops instead of looking at it in a methodological way." Consequently, tensions were experienced while trying to pull together the faculty who had only functioned as "warm bodies" throughout the process. The opportunity for professional development and collective growth that this school improvement project provided was not pursued by all of the faculty and staff.

Another challenge was that some of the designated committees worked better together than others. Leah speculated that the most successful committees had made themselves more available for the work; they seemed to have a greater investment in the goal of beneficial outcomes for all stakeholder groups, especially the students. Individual and team integrity gradually developed as people became, to varying degrees, "invested."

The committee that worked best, in Leah's view, was the faculty that worked on section four, which analyzed instructional and organizational effectiveness. This was the most diverse group in its range of program areas and faculty perspectives. In the NSSE guide (Fitzpatrick, 1997) section four is built up as the most diffi-

cult part of the process, and the faculty responded to this perceived challenge by working together to pull their weight. In hindsight Leah believes that this section did not prove to be any more difficult than the others, just more time consuming.

In early 2000 the school team faces the task of creating the action plan (part five); this work will make them accountable for getting their school improvement plan done. For this section, they will synthesize previous research that has been compiled. The goal will be to align teacher and administrator instructional and organizational practices with student outcomes. The team has already established what they want the students to know and how outcomes are already being accomplished. Within section three, the desired results for student learning, the ability to use technology as a meaningful learning tool as well as the demonstration of effective problem-solving and critical-thinking skills were identified as important outcomes through a stakeholder survey. This section committee developed a portfolio of evidence showing that many of these objectives were being planned for via curricular lessons developed to produce desired outcomes.

For section five, the school team will use the results of section four in which areas of instructional and organizational strength and weakness were identified. The team determined that variables such as community relationships and the alignment of learning activities with goals and expectations were strong. They also found that overall school resource management and inter-faculty communication needed to be improved. Now the school team needs to figure out how it can use its strengths to boost student outcomes and how it can implement programs and accountability measures to improve upon weak areas. Areas currently being explored include an expanded technology curriculum, greater professional development offerings, and provisions for a wider variety of basic skill assessments. If support for the middle school's technology goals does not materialize, a significant lag in its development will probably occur. The teachers have themselves identified the need for technological progress at the school, having assigned it the status of being the major conduit for improving student learning through instructional delivery. Currently, however, there is only one computer in each of the teacher's classrooms and seventy computers in the entire school.

Without the resources needed for satisfying their technological goals, the teachers fear that the school will fail to meet current educational standards for computer-assisted learning. Should a school's accredited status be officially withdrawn, its improved image as a "high-performing" school will falter. Hopkins and Levin (2000) warn that caution is needed when innovative school programs cannot be supported to improve student achievement. One policy implication is that governments should only sponsor programs with built-in implementation strategies, including funding

sources. Without a "framework for implementation," it is questionable on managerial and even ethical grounds to encourage higher standards that will lead to "changes in practice" (Hopkins & Levin, 2000, p. 20). Like many other schools, the middle school of this study is struggling to respond to the increased demands of a new "culture of information" and the challenge this presents "to represent itself as challenging and rigorous" (Kincheloe, Introduction, p. 2).

As noted previously, the SACS review team, which consists of peer evaluators from accredited schools, will arrive at the school mid-2000. Leah is not worried about any deficiencies that it might find because "the emphasis is on the positive and any correction will only be minor." This is the "tea party" alluded to earlier. Based on testimonies from colleagues and the fact that she has served on a SACS visiting team herself, Leah is confident that the review will not be a rigorous or demanding process. The review team will write a report for SACS and the school will get a copy. The school will then make suggested revisions and proceed with the implementation of the school improvement plan. Like other schools, this one is required to reapply for candidacy each year and to complete the basic standards checklist. Within two years, the school will submit a progress report with documented evidence that the plan is in place and progress is occurring. A new school improvement plan will be compiled and the process will begin again five years from the initial accreditation date.

Leah's confidence in the outcome of the final evaluation stems, in part, from the reports produced by other schools, which have all been straightforward. This opportunity to see what other schools have presented "taught us not to stress out about SACS and to understand that the improvement plan can be approached in a variety of ways—it's what you make of it that matters, much like a student's experience of taking courses, by way of analogy. We are trying to create a usable document at this school."

Facilitator Interferes with the Process

Another multipronged tension is that the school was appointed a SACS facilitator after it made a selection from a list of outsiders' names. Once this coordinator is appointed, the person cannot be replaced. The facilitator performs the audit, or objective external review, of the records that the school produces for its curriculum evaluation. The concept of a "management audit" has been adapted to the concept of "curriculum evaluation" (Oliva, 1997), which raises the issue of district control in the schoolwide assessment process of SACS and NSSE. The role of the SACS facilitator is contractual and it requires that the individual "provide guidance and assistance in the school improvement process, serving as principal resource person and aiding in securing such other resources as needed" (Memorandum of Agreement between the school, district, and SACS facilitator, 1998–1999). An important role of the

facilitator is to provide corrective feedback on the SACS draft and to make certain that the major parts in the NSSE guidebook have been covered; the school must provide a standardized document. The facilitator then forwards the school's final report to SACS.

One problem with the external management of the school's report is that the facilitator holds the key as to whether approval is to be extended or withheld on each major part. Without that approval, the school is stuck and completion becomes delayed. This school has received minimal corrective feedback on their draft report from the SACS facilitator; this development was an unanticipated stumbling block.

The "high-stakes" relationship with this accrediting professional has many uncertain and even emotional elements. It has already cost the school in terms of its pace of self-improvement and anticipated endpoint (part five, the action plan, should have been completed in December 1999). One reading of this situation is that the facilitator has faced personal family problems that have prevented her from giving feedback; another possibility is that she is simply not prepared to do the work. She has read what the school has produced at what feels like to them an extremely slow pace.

Moreover, the facilitator does not probe, yet finds fault. The faculty team has not been asked relevant questions to elicit explanations of what kind of research they have done and why. For example, she could have probed to find out how data was collected or whether the data was collected in a manner considered to be valid and reliable. Instead, her emphasis was on making certain the school's research procedures followed the method approved by SACS. For example, she required the use of SACS surveys and frowned upon the use of an outside scorer. In addition, the facilitator required the removal of any criticisms of the survey instrument from the scoring results. Of course this added layer of gatekeeping makes one wonder how much ownership the school actually exerted over its own self-study process. Some forms of required supervisory evaluation can feel more akin to hindrance than guidance.

In four years the school will again need to apply for accreditation. The school will evaluate its plan and revisit the mission and demographics it has reported. At the beginning of each school year the school team will also need to submit its standards compliance checklist; this will ascertain that they possess the minimum number of books in the library, have a working mission statement, have manageable average class sizes, and so forth. The facilitator required that the steering committee of this school write a paragraph citing evidence for each checklist item (listed in the report by the Commission on Elementary and Middle Schools). It's worth noting that there are about eighty items in total. Leah and her cochair have decided that each faculty member will write several of the paragraphs in order to make the task more manageable.

These "yes" or "no" standards provide a basis for the plan. They essentially determine readiness and whether the school is maintaining basic accreditation requirements. This narrative is to be kept in the school's data bank and it will be available to the visiting team.

Carol asked Leah what she would keep the same if she could redo the whole school improvement process. She replied that, first and foremost, she would keep a positive attitude when dealing with the faculty. Based on the informal feedback that she received from the faculty and from her own observations, she attributes much of the good in the process to the positive attitude of the steering committee. Meetings proved worthwhile and when each part of the report was concluded the faculty had arrived at consensus on all decisions, and the reviews of the materials for each section had gone well. When asked what she would do differently if she were to repeat the experience, Leah would have "hounded the facilitator for information." She and her program cochair decided lately to call the facilitator twice weekly to get the feedback and approval that they need in order to both improve and move their school study along.

Tension 6: School Practitioner in the Researcher's Driving Seat

In a study like this whereby the school "steers its own ship," the university researcher will most likely take a back seat. In this scenario, the school practitioner assumes the role as researcher and a reversal takes place in the more traditional relationship with the university researcher. This emerging role of the practitioner as researcher could help to blur the line or even close the gap between school and university practitioners (Mullen & Lick, 1999; Mullen & Patrick, 2000).

For this study, the university researcher participated in some of the meetings, taped and analyzed the sessions, and provided input on some of the documentation. However, Carol did not perceive her role to be essential or substantial to the actual improvement effort per se but rather to the documentation of it for the professional academic field, an outcome that she had tried to achieve by requesting more involvement in related activities. She shifted her expectations during the research process and came to accept a less central role. This practitioner-based ownership of the school reform process can liberate a school team. As the university partner who was affiliated with this school in its PDS relationship, Carol had been the one to seek out inclusion in this action study. By participating, she was able to learn how one school tackled the framework of the self-study collaborative process for developing and meeting standards for student performance.

Carol's main contribution to the school study was realized through this publication, which is based on her research and interviews with Leah, the lead teacher who is the steering committee cochair. Carol found Leah's story to be rich in information and contradiction, especially with regard

to the tension between school and corporate ownership and the struggle inherent in transforming an external process of control into a project steeped in possibility.

Carol asked Leah whether the process of doing this article has helped with the preparation for the final phase of the project. Leah replied that the opportunity to articulate her experiences to a supportive outsider helped her to see the school improvement process more holistically. These conversations served to clarify the frustrations and triumphs that had become hazy over the fifteen months prior to writing this report. Through this writing, Leah has been able to move away from the grind of the daily process to identify programs that the school needed to include in the final plan. Leah wants to include these elements in the action plan: improved interfaculty communication, an enhanced student technology curriculum, and continued improvements in community-school relations. She hopes that the entire school community will realize the benefits of this undertaking through the turning out of better-prepared teachers and students.

Implications of This School Improvement Study

One major implication of this study is that while the accreditation process can be experienced as an opportunity for school development, it is inescapably structured within a corporate-produced, organizational culture. Educators, policy makers, and the public all need to be aware that practitioner-led investigations like those of Leah's school have been riddled with compromise, and take place in the context of mixed messages and influential politics. Assessments of the entire process of school accreditation are needed. Notably, teachers are not sufficiently included in the process of shaping educational reform in their perceived status as nonexperts, an exclusionary practice that makes them cynical about and resistant to change (Kincheloe and Weil, 2001). The voices of various stakeholders, including teachers and university researchers, consequently need to be heard in response to such questions as the following:

- What norms do accrediting bodies reinforce?
- How do external evaluation systems reinforce corporate control over schools?
- How can capitalistic influences be diminished?
- How can schools be empowered to take responsibility for reform initiatives and outcomes?
- How can the national and regional standards for accreditation be reconstructed to support the important goal of school ownership?
- How can universities champion the leadership of schools?

Kohl (1999) suggests that leadership has yet to come from universities and schools and that it has originated in the community. Concerning the role of universities in the area of

school leadership, this is a disconcerting thought. There have been many "fellow travelers" in the schools and PDS systems, myself included, who have joined movements of equity and justice, and even those of increased standards for performance that are democratically driven. But consider the Deep South, for example, where this document was produced—the desegregation of schools was led not by the school and university leaders but by African-American community activists. University researchers should champion school and teacher development as empathetic collaborators and work with school stakeholders to monitor the complex policy processes governing standards that shape schools and society today.

As a leader in the accreditation process, Leah's experiences and insights informed the play of ideas in this writing. Through listening to her story and probing it, Carol became aware of several provocative contradictions at work in Leah's picture. Leah also experienced a breakthrough in coming to see her story in this way. We hope the contradictions that have been identified will provoke a more in-depth discussion of the role of standards in the school reform movement. The school improvement process has proven to be riddled with many unresolved tensions that need further probing.

Teachers like Leah work toward whole-school reform to promote internal accountability through a better relationship with their students and community stakeholders. Such critical workers act as synergists, creating teams and making decisions reached through consensus, researching their environments, and advocating for informed changes that uphold "standards of complexity" (Kincheloe, Introduction). As this case study shows, teachers who are involved in collaborative self-study programs probably develop a course of action that is informed by their inquiry into such complex issues as the needs of students combined with the desired results for student learning. Through this conceptually demanding work, critical teachers produce and uphold rigorous standards for learning that defy a "view of practitioners as information deliverers, as deskilled messengers who uncritically pass along a canned curriculum" (Kincheloe, Introduction, p. 23). Leah has, like other teachers, used the process and goal of accreditation as a potentially viable route to the production of rigorous standards for significantly improving her school environment. Despite the drawbacks to the accreditation process, Leah and her school team do want to persevere with it as this opportunity has provided the occasion for whole-school change and growth.

Probing Issues of Accountability and Educational Policy

Olson (1999) describes the current climate of the country as a "quick-fix" view of accountability: "It's a very American set of ideas: Take responsibility for your actions. Focus on results. And reap—or rue—the consequences. And these days, it can all be

summed up in one word: accountability" (p. 1). The emphasis in the discourse on accountability, probably the most heated area in the school reform movement, is on student and school performance within and across school districts, states, and nations. Teachers, students, and schools are being ranked for their achievement through the homogenized lens of standardized testing and accreditation processes. The text we have prepared focuses more on teacher and school empowerment and the need for teachers to find legitimacy in a world where "policymakers are moving to reward success and punish failure in an effort to ensure that children are getting a good education and that tax dollars aren't being wasted" (Olson, p. 1).

The contradictions in the self-improvement process experienced by one middle school in rural Alabama underscore the hierarchical and commercial aspects of the standards movement.

McMullen (cited in Olson, 1999), project director of the Tools for Accountability Project at the Annenberg Institute for School Reform, asserts that accountability needs to be the "business" of not just the schools and teachers but also of the states and the state legislatures. Sizer (cited in Olson, 1999) also attests that accountability is being far too narrowly defined in the debate and in the lived practice of it. Everyone is responsible, especially the policy makers who have the power to decide who and what gets spotlighted.

Education Week has provided many such perspectives on the issue of accountability. In the various studies on accountability that it reports, it has been found that a split exists between the public, which supports high-stakes measures to increase school accountability, and teachers, who reject the belief that standardized test scores should guide students' learning. Teachers also protest the use of test scores as determinants in rewarding and sanctioning schools. Wise (cited in Pinar, Reynolds, Slattery, & Taubman, 1996) and Elmore and Sykes (same as previous citation) concur that this policy increasingly regulates classroom learning, constraining the options of teachers. They all use the word "hyperrationalization" to describe how unrealistic expectations that fail to address the complexity and art of teaching have been placed on teachers. More studies are needed of the teacher perspective on issues of educational policy and accountability. This case study is intended to create movement in this direction by contributing the narrative of one teacher whose voice embodies many others.

Our account resonates with Elmore's finding (cited in Olson, 1999) that a school's internal conception of accountability is relevant to the discussion on standards. Our look at one school's collaborative self-study process has shown that this school team has a fairly strong, collective sense of responsibility that has grown through its interpretation of the SACS accreditation process. Leah, the program cochair, does not feel isolated in the task or solely accountable for the

teamwork of the school. Nor is she blind to the contradictions, both illusory and real, that surround issues of state control and school ownership at the local level of school improvement.

The political landscape of the United States is rapidly changing. A 1995 education reform law has mandated that Alabama's "failed schools" will be taken over by the state and that the accountability process is the major factor in making this determination. If we are to accept the dichotomy of failed and successful schools as part of the language of technical standards, then the idea of a failed school and failed professional (the teacher) necessarily summons up the idea of a failed state. Unless state policy makers are committed to building the capacity of schools and of teachers, then they will probably punish, not mentor those who desperately need their support. We hope that our study of middle school standards will benefit politicians, educational leaders, teachers, parents, students, and concerned citizens who are or who could become social justice workers to "respect teachers enough to engage them in a conversation about [the value of] specific standards recommendations . . . in their professional activities" (Kincheloe, Introduction, p. 65).

Further, the voice of teachers should be encouraged in the development of standards that both involve and empower this vital educational worker in the larger public dialogue about this issue. Teachers are in the position of being able to evaluate the impact, validity, and significance of standards through their hands-on experiences, notably accreditation as the example pursued herein, in the local arena of schools and communities. Joined with other activists, the teacher needs to become a partner in school improvement efforts and in the wider knowledge-building community. Educators and policy makers have much to gain from learning about the impact of policy on schools through teachers like those featured in this paper. Such teacher-researchers represent a "critical system of meaning" with their willingness to undertake an analysis of the change process, a goal toward which this case study takes a step (Kincheloe & Steinberg, 1995, p. 6).

Postscript of University Researcher (Carol Mullen)

More universities could usefully become involved with practitioner-directed school studies that create a reversal in the traditional roles of practitioner as support system and researcher as project coordinator. Research has shown that "collaboration between friendly outsiders and those inside schools is important in school improvement" (Erickson & Christman, 1996, p. 156; see also Mullen & Lick, 1999). For this article, Leah, the lead teacher, engaged in important conversation about the self-study process at many different levels; she also provided the school documentation and gave clarifying input on the text along with salient examples.

Rather than simply being acknowledged for her vital contributions, Leah was extended coauthorship as one benefit and outcome of this school study. Research participants need to be turned into coresearchers and coauthors in studies to which they make worthwhile contributions (Mullen, 1999). This project has alerted me to how the topic of "standards" could serve as a useful lens for rethinking university-based research ethics. Researcher accountability to participants who contribute understanding to educational/social topics could be treated as a more serious ethical issue.

Postscript of Lead Teacher (Leah Stover)

I would like to thank Carol Mullen for being a part of my school's study, for providing an alternative perspective, and for initiating and writing this paper. Because of her research commitment, the school improvement process was critically evaluated at my school and our story was responsibly told in published form. I would also like to thank my steering committee cochair, Beverly Corley, who served as my "sounding board" as this work took shape. She and I look forward to fleshing out the final SACS product. It is important to note that this work respects the anonymity of my school, its location, and the school district. Though many at my school share my views, I have not established the opinions of all of my colleagues and others within the district.

Authors' Notes

For the outcome (formative assessment) of this school's accreditation process, kindly contact Carol Mullen for the Mullen with Stover and Corley (2001) manuscript.

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TO STANDARDIZE, OR *TOO* STANDARDIZED?

What Becomes of Our Curriculum?

David Pushkin

This chapter seeks to raise questions about the purpose and meaning of science curriculum standards. By no means do I intend a definitive conclusion either supporting or opposing standards. However, the use of a standardized curriculum does pose troubling issues for us to debate.

Allow me to share a story. What purpose do stories serve in academic discourse? Not only is storytelling a form of presenting qualitative research, where a narrative approach can present a moral (e.g., Coffey & Atkinson, 1996), it is also a means of conversational analysis, where conversations or dialogs represent data (e.g., Coulter, 1999; Ollerenshaw, 1999; ten Have, 1999). The method of *Currere*, a writing style forever linked to Bill Pinar, personalizes one's research. Sharing one's perspective of self, a researcher not only presents growth within an area of knowledge, but growth within those who study it (Pinar, 1994). Storytelling potentially helps us understand the human condition, and teaches people something about life, social dynamics, and discourse. The stories we tell enable us to understand phenomena and theory/practice issues through the experiences of others (e.g., Valdés, 1998; Zuckerman, 1999).

When I was a high school teacher in Florida slightly more than a decade ago, we were given prescribed state performance standards for our subject areas (in my case, chemistry, physics, and honors physics). The explicit messages given were: cover the standards *and* document them in your lesson plans. Being a native New Yorker and a veteran of Regents examinations, I hardly considered this monumental, and actually viewed those standards as rather weak and minimal. Even the state's standards for excellence (versus standards for performance) seemed ordinary and trivial.

Why was that? What troubled me about those standards? Why was I unimpressed? After all, standards were indeed the theme of the 1980s, the decade of *A Nation at Risk*, the decade of *Science for All Americans*, the decade of curriculum reform, the decade of the Scope, Sequence, and Coordination Project, and the decade of initiating Project 2061. With all these noble efforts, why were the standards still uninspiring?

While planning my lessons, I would gloss through our textbooks' tables of contents and check them against the standards. In my school we were required to submit lesson plans noting the topics we taught, the corresponding state standards, and the corresponding textbook chapters and pages. Furthermore, if we assigned end-of-chapter exercises or problems, we were required to note those too.

Strangely enough, the more I glossed, checked, and documented, the more I realized each standard related to a specific section in our state-adopted textbooks. In fact, each standard of excellence corresponded to an enrichment or optional topic. Which came first, the books or the standards? Were the standards merely reflecting tables of contents, or was this coincidental? Was there a more meaningful purpose for those standards?

In retrospect, those standards were pretty explicit and deliberate. Practically every standard began the same way:

- The student will be able to solve. . .
- The student will be able to define. . .
- The student will be able to calculate. . .
- The student will be able to determine. . .
- The student will be able to recognize. . .
- The student will be able to identify. . .
- The student will be able to quantitatively. . .
- The student will be able to demonstrate knowledge. . .
- The student will be able to name. . .
- The student will be able to classify. . .
- The student will be able to list. . .

Pretty numbing perhaps, but early in my career I was admittedly a naïve chump, a dupe willing to meet the state's expectations. Every standard related to a principle, which somehow reinforced problem solving, a rather dominant aspect of introductory chemistry and physics (e.g., Pushkin, 1998a). Being a former scientist, I had no qualms with problem solving, but eventually wondered, is this all there is? Had chemistry and physics been fundamentally reduced to mole conversions, vocabulary lists, vector analyses, and algebra exercises?

> According to the objectives model, rational curriculum planning begins with a specification of educational aims and then proceeds to break them down into behavioural objectives–statements of

> intended learning outcomes which are sufficiently precise and unambiguous to enable measurement. A programme of curriculum content, and learning tasks related to it, could then be rationally organized in the light of these statements, and criterion-referenced tests developed for assessing the extent to which the intended learning was achieved. (Elliott, 1998, p. 26)

Of all the standards, perhaps the most intriguing and troubling for me was the final one on the list: "The student will be able to describe how [chemistry or physics] interacts with society and technology." For example, in chemistry, students were expected to

1. Classify hazardous substances (pollutants, carcinogens, radioactive materials, and mutagens)
2. Describe various energy sources and list advantages and disadvantages of each
3. Describe the causes and effects of acid rain
4. Describe career opportunities resulting from the study of science, mathematics, and technology
5. Use the science process skills to obtain and analyze information from the public media

In physics (or honors physics), the standard was more intriguing. Students were expected to

1. Describe career opportunities resulting from the study of physics
2. Describe the interdependence of science, technology, and the economy in terms of processes, growth, and development
3. Describe and analyze advantages and disadvantages of various energy technologies
4. Appraise ways in which technological advances affect the individual and society

Fair enough, lots of current events are worth utilizing in my classroom. After all, this was the late 1980s, the decade of AIDS, the Exxon Valdez spill, the Chernobyl accident, the Union Carbide accident in Bhopal, India, and the space shuttle *Challenger* explosion. Not only were we in the nuclear and space age, but we were exploring alcohol-based automobile fuels, solar power, electric-powered automobiles, superconductors, and fiber-optic communications. Lots of interesting and exciting technological developments, yet nary a clue as to how to discuss the economic implications with high school students.

However, when I recall the 1980s, I also remember a national budget deficit growing out of control, more and more homeless people, and families who could not feed their children properly on government subsidies. I also remember President Reagan's Strategic Defense Initiative, or SDI. "Star Wars," his critics scoffed; a necessity against an "Evil Empire," our president asserted.

Teaching in Florida during the 1980s, the space program was a big deal. Many a physics student dreamed of working for NASA as an aerospace

engineer. To them, shuttle launches and SDI were sexy and exotic. But what was the price tag for sexy and exotic technology? Who paid that price tag?

I asked my aspiring "NASAneers," how much worth did SDI and similar technology have when we had homeless people, terminally ill people, malnourished children, poverty, and crime? It created an interesting debate, as it not only encouraged students (many already reaching voting age) to consider how tax money was or was not spent in our national budget, but also touched on their sense of civic and moral obligations as empathic humans.

Apparently one student was displeased by the debate and reported me to my school administration for discussing anti-American issues during physics class. Naturally I was reprimanded, hardly the first or last time; I was, after all, a "danger" to education.

> I chose to be different, daring students to think and to give a damn about themselves as learners. Many students despised this approach; they were accustomed to the administratively mandated apathy practiced at our school. They, and their parents, complained; Mr. Bob did not like to hear complaints, and was intent on letting me know this on numerous occasions. With each reprimand I received, I was reminded of how dangerous I was for education; I was an enigma: intelligent, with a bad attitude. (Pushkin, 1998b, p. 190)

During this particular reprimand, my assistant principal (a former social studies teacher) pointedly asked, "What does [sic] SDI and homeless people have to do with physics?" When I brought his attention to that final standard of science, technology, and society, he admonished, "You don't use the curriculum to criticize a great man like President Reagan—just do your job and teach them how to solve those word problems!"

> The stances to knowledge marked down in curricula either invite teachers to express and extend their powers of understanding in the ways they represent knowledge to children, or they imprison teachers as transmission devices which represent knowledge as inert information. (Elliott, 1998, p. 22)

I never really "learned" my lesson from this experience. Throughout my career as a science educator, chemistry professor, and physics professor, I have continued to "push the envelope" with my syllabi and teaching, be it in a methods course, general chemistry course, or physics and society course (e.g., Pushkin, 1995, 1998a–d, 2000). Granted, as Druger (1999) notes:

> College science teaching seems to be a highly individualistic endeavor. Each faculty member basically decides what his/her students should know and be able to do as a result of the learning experiences in that class. Should we attempt to establish national standards for college science teaching, particularly at the introductory college level? This may be a worthwhile endeavor. . . .

> However, advantages and disadvantages of uniform college-level standards must be considered. Developing higher standards does not, by itself, raise the level of achievement. Raising the bar does not necessarily make the student jump higher. (p. 154)

However, should syllabi or curricula merely reflect dispassionate fact-oriented content, or should we find interesting and motivating ways to present science, especially since the majority of science students do not aspire to careers in science (e.g., Palmer, 1999)? What if some of these students are aspiring elementary school teachers (e.g., McDevitt, et al., 1999; McLoughlin & Dana, 1999; Schibeci & Murcia, 1999)? After all, are not new teachers likely to teach as they were most commonly taught, emulating pedagogical approaches most familiar to them (e.g., Caprio, 1999; Coppola & Paerson, 1998; Crawford, 1999; McLoughlin & Dana, 1999; Pushkin, 2000)?

> The "facts" of the curriculum appear to be value free, devoid of any underlying set of assumptions; after all, they are "just the facts" as Sergeant Joe Friday once put it. For the positivists research appears to be liberated from any theoretical pre-assumptions. This appearance of theory freedom renders positivism the great deceiver, wrapping itself in the cloak of objectivity while often unconsciously promoting specific values, worldviews, and assumptions about what constitutes an educated person. (Kincheloe, 1991, p. 54)

Perhaps the ultimate question we can take from this introductory section is one reflective of agenda, as in: What are the competing agendas related to this gradual shift toward standardized K-12 and introductory college science curricula? Are prescribed tests (e.g., MCAT, CBAT, and GRE) pressuring science educators, or are professional societies (e.g., National Science Teachers Association [NSTA] and American Chemistry Society [ACS]) bloating curricula for the purpose of degree accreditation (e.g., Caprio, 1999; Druger, 1999; Pushkin, 1998c)?

Can we discuss acid rain, global warming, and geo/socioeconomic issues when students need to master Lewis Electron-Dot Structures and molecular geometry for subsequent chemistry courses? Can we discuss the historical aspects of the nuclear age when students need to master electromagnetic field algorithms for subsequent physics courses? Do we deny aspiring scientists these broad learning experiences for the potential threat to "real" and "necessary" knowledge? Do we designate such topics only for those not seeking a science-oriented career? Will the typical scientist willingly teach such courses, or will they fight to preserve the sacred cows of their precious content (e.g., Pushkin, 1995)? Is one form of knowledge superior to another (Goodson, 1993; Young, 1971)? Is curriculum forever an appendage of university syllabi (Goodson, 1993)?

What if some knowledge is viewed as a threat to a community's well-

being? Have we not recently witnessed the state of Kansas wipe evolution from its school curriculum? How many more states may follow suit, pressured by political and religious lobbies?

Bruner (1986) and Elliott (1998) both argue learners' growth of understanding is indicated not by an increasing capacity to master the uncontaminated language of fact and objectivity, but by how they shift in stance toward adopting the course content. This is quite synonymous with Perry's stages of adult cognition (1970), where growth is reflected by an evolution from dualism to relativism. Teachers need to foster such positive development, very much akin to what Vygotsky referred to as "mediation" and "scaffolding" (e.g., Driscoll, 1994; Moll, 1990). The educational process, according to Bruner (1986) and Elliott (1998), must express stance and invite counter stance, leaving opportunity for reflection and metacognition. How can this take place when counter stance is legislatively or administratively forbidden?

> Only if the school curriculum permits students to reach . . . higher ground . . . will they be able to take responsibility as adults for developing the culture which shapes their lives. The implementation of a national curriculum constructed through an objectives model representing knowledge as nonproblematic, as an individual rather than social achievement, and as something acquired by progressively moving through higher and higher levels of abstraction, will suppress rather than enhance the intellectual development of the majority of children in our schools. As a vision of what is involved in providing the mass of the citizenry with equality of educational opportunity it is seriously flawed. (Elliott, 1998, p. 31)

So why do we have standards? According to Texly and Wild (1996), the original motivation for recent reforms was to address an education system that produced scientifically illiterate citizens. Just like Sputnik three decades earlier, *A Nation at Risk* raised the flag of panic regarding United States supremacy. How our students compared intellectually with the world's competition played a significant role in curriculum reform and the move toward content standards.

> Traditionally, the way that performance against some standard has been interpreted has been by comparing the performance of an individual or a group against some other group of individuals. . . . This kind of *norm-referenced* interpretation is similar to the kinds of "benchmarking" activity undertaken by commercial organisations in comparing their performance with that of their competitors. The trouble with such an approach is that all it requires is that we are able to put individuals in a rank order, and it is very easy to put people in a rank order, without having any clear idea what they are in rank order *of*. Norm-referenced interpretations, like benchmarks, are frequently used when we have no clear idea of what level of performance is actually required. A

> good example of this is countries that measure the success of their education systems by where they rank in terms of international comparisons, rather than by whether the system actually does what the country wants or needs it to do (in this context, it should be noted that the evidence for a link between industrial competitiveness and levels of achievement in national education systems is actually quite sparse). (Wiliam, 2000, p. 355)

However, unlike our motivations of three decades earlier, the recent reform movement did not primarily seek to produce a new collection of great scientific minds.

The recent reform movement sought to address the content that *all* students needed to learn and understand. What was the minimal scientific literacy our citizens needed to function in our growing technological and global society? Did this necessarily translate to scientific excellence and accomplishment?

> Its goal was to revolutionize the teaching of science . . . as a subject for *all* students, not just those who were college bound. . . . The need to set *voluntary* national standards for what all students should know and be able to do at various grade levels in the subjects addressed by the goals soon became apparent. . . . The Science Standards provide a vision, *not* a curriculum, for science education. They are descriptive, *not* prescriptive. One of the strongest principles underlying the Standards is that science is for *all* students in all grades. (Texly & Wild, 1996, pp. 171–172)

Did this recent reform movement suggest post-Sputnik reforms were elitist and neglectful? If the standards are a vision of something voluntary, then what true impact do they have? Are the standards for the sake of American-perceived supremacy? Are they for the theoretical sanctification of bloated curriculum content? Are they for the sake of improved test scores? Are they for the sake of validating textbook companies? Are they for the sake of "leveling the playing field" for all science classrooms? Are they for promoting intellectual and technological excellence, or are they for consensus on homogenized mediocrity?

If standards are merely visions and voluntary, where is the incentive to make them reality and compulsory? Can they truly be considered standards? Can we take them seriously? Will they remain stable or change at whim? Why should we volunteer to accept one commission's vision over others?

> Indeed, perhaps the only uniform trend . . . has been the swinging back and forth of the curriculum pendulum between the "hard" and "soft," between "back-to-the-basics education" and "progressive education," between "meritocratic" and "democratic" notions of educational "excellence" and "equity." Notwithstanding the more specific, substantive concerns of these competing curricular visions, the pen-

> dulum appears to be driven largely by political/ideological constellations of values, beliefs, and human interests. (Sirotnik, 1988, p. 57)
>
> How, for example, can schools behave constructively and proactively in a society governed by those who would, on one hand, issue commission reports (like *A Nation at Risk*) suggesting that we are caught in a web of educational mediocrity while, on the other hand, decrease funded support for public school improvement and advocate subsidies for private schooling? (Sirotnik, 1988, p. 64)

The Upside of the Standards

The term "upside" is common in baseball; it describes the positive potential for growth and success in a young player. We can view national science standards in similar fashion; metaphorically there is considerable upside.

How do these standards offer potential to make science learning richer and more meaningful? I identify eight potential upside factors:

- The standards are fewer and broader than prior prescriptions
- The standards are more interdisciplinary than compartmentalized
- The standards are more cognitively developmental to reflect entire K-12 learning
- The standards specifically focus on the process of science and relevant thinking skills
- The standards reflect more of a spiral-type curriculum than a linear one
- The standards allow for flexibility in coverage
- The standards encourage thematic lessons and cross-disciplinary teaching
- The standards potentially eliminate dependence on textbooks

Consider the first upside. For example, the New Jersey Core Curriculum Standards for Science Content, adopted from the National Science Education Standards, list twelve very general standards:

1. All students will learn to identify systems of interacting components and understand how their interactions combine to produce the overall behavior of the system
2. All students will develop problem-solving, decision-making, and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results
3. All students will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology
4. All students will develop an understanding of technology as an application of scientific principles

5. All students will integrate mathematics as a tool for problem solving in science, and as a means of expressing and/or modeling scientific theories
6. All students will gain an understanding of the structure, characteristics, and basic needs of organisms
7. All students will investigate the diversity of life
8. All students will gain an understanding of structure and behavior of matter
9. All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations
10. All students will gain an understanding of the structure, dynamics, and geophysical systems of earth
11. All students will gain an understanding of the origin, evolution, and structure of the universe.
12. All students will develop an understanding of the environment as a system of interdependent components affected by human activity and natural phenomena

First, these are significantly fewer than the standards I experienced in Florida during the 1980s. For comparison, although our chemistry standards for performance only numbered fifteen, we had twenty-one standards for physics and twenty-four for the honors course.

The fundamental reason for the difference between these numbers of standards relates to their nature. As mentioned earlier in this chapter, each Florida standard of performance related to a specific topic listed in a textbook for a single discipline. On the other hand, each core standard relates to a general theme, a broad array of science encompassing various concepts and disciplines.

Examining the first core standard, a system can be interpreted quite broadly and applied to several science disciplines. According to the core standards' descriptive statement, the natural world and the world built by humans both provide examples of systems where interacting parts work together as a whole. This standard asks students to analyze, understand, and design systems of integrating parts.

Could one interpret this from a biological perspective? Certainly the multiple systems of an organism (e.g., digestive, circulatory, reproductive) could illustrate this standard. Could one interpret this from a chemical perspective? Certainly a chemical reaction or laboratory apparatus could illustrate this standard. Could we apply this to physics? Certainly an electrical circuit is a good example. Could we apply this to the earth sciences? The solar system is another excellent example.

The first core standard is broad enough that teachers of any science discipline at any level can illustrate it purposefully and meaningfully. Teachers are not handcuffed by a restrictive standard forcing it to be a biology concept, or a chemistry concept, or a physics concept, or an earth science

concept. In fact, this first standard is also a wonderful illustration of the second and sixth upsides. This standard offers potential for interdisciplinary teaching, and allows for more flexible teaching of science content.

Looking at the third upside, these standards are more cognitively developmental to reflect entire K-12 learning. There are three reasons for this. First, these standards were designed with a scope, sequence, and coordination vision in mind (e.g., Aldridge, 1996), where learning should be cumulative. Second, there are benchmarks for learning, known as "cumulative progress indicators," that correspond to the culmination of elementary, middle, and secondary school (grades 4, 8, and 12); many assessment tests correspond to these stages in a child's education. Third, these standards practice what is preached; if science is to be for *all* students, the standards should reflect this.

A case in point would be the fifth standard regarding the integration of mathematics. While the role of mathematics may be obvious to physical scientists, it is not so clear how to incorporate mathematics into learning activities for children who only understand basic arithmetic, or children who are first becoming exposed to algebra. My personal perception of standards is mixed, primarily due to a vision of scientists recommending the watering down of an introductory college syllabus for science majors; the proper level of dilution was deemed a standard for precollege children. Aldridge (1992) described a wonderful pendulum-like progression for elementary, middle, and secondary level students, where the same apparatus was generally used, but the level of analysis was not.

For example, it is considered acceptable for fourth graders to understand the longer a pendulum string, the slower it will swing. It is also acceptable for these children to understand that the mass of the object on the pendulum does not affect the time it takes to swing (Aldridge, 1992). Perhaps when children reach the eighth grade, they should understand how to graph data and determine a more substantial relationship between the length of the pendulum string and its period (Aldridge, 1992). Eventually, by twelfth grade, students should understand that the period (T) of a simple pendulum (accelerating due to gravity) is a function of its length (l) according to an equation, or a law of physics (Aldridge, 1992): $T = \pi\sqrt{(l/g)}$.

This activity can be accomplished with students at all grade levels, and yet, each learning experience might build new learning (as opposed to redundancy). Not only does this illustrate the third upside; it illustrates the fourth and fifth upsides as well. Scope, Sequence, and Coordination in essence, mirror a spiral-type curriculum model. Furthermore, it focuses on the process of learning scientific principles, rather than the mere principles themselves.

Consider the cumulative progress indicators for the fifth standard:

By the end of grade 4, students:

- Judge whether estimates, measurements, and computations of quantities are reasonable
- Use a variety of measuring instruments, emphasizing appropriate units
- Use mathematical skills and concepts in ordering, counting, identifying, measuring, and describing
- Use tables and graphs to represent data

Building upon knowledge and skills gained in preceding grades, by the end of grade 8, students:

- Recognize and comprehend the orders of magnitude associated with large and small physical quantities
- Express experimental data in several equivalent forms such as integers, fractions, decimals, and percents
- Infer mathematical relationships among variables using graphs, tables, and charts
- Express the output units of the calculation in terms of the input units
- Select appropriate measuring instruments based on the degree of precision needed
- Find the mean and median of a set of experimental data

Building upon knowledge and skills gained in preceding grades, by the end of grade 12, students:

- Express the results of mathematical operations based on the degree of precision of the input data
- Use computer spreadsheets, graphing, and database programs to assist in quantitative analysis
- Evaluate the possible effects of measurement errors on calculations
- Express physical relationships in terms of mathematical equations derived from collected data
- Use mathematical models to predict physical phenomena

With such broadness and flexibility to these standards, the opportunities for teachers to utilize their creative imaginations are limitless. If teachers can illustrate these standards for multiple disciplines with different examples, no current textbook can effectively serve them. In fact, textbooks would be highly constrictive of creative inquiry-based teaching, and might be best used minimally or not at all (e.g., Pate, Homestead, & McGinnis, 1997; Pushkin, 1997).

Additionally, the flexibility of these standards, as intended, should encourage teachers to create thematic or cross-discipline units (Czerniak, Lumpe, & Haney, 1999). At the elementary school level, this might be widely prevalent, as teachers can effectively integrate multiple subjects within their self-contained classrooms. At the middle and secondary levels, where classrooms are rarely self-contained, the ease of cross-disciplinary teaching might be less, but the

opportunity is still fertile. These standards not only provide excellent opportunities for traditional collaboration between science and mathematics departments; standards, such as the third and twelfth, offer opportunities for collaboration between science and social studies departments. Many high school social studies departments teach history and economics; thematic units on the Second World War and the modern physics revolution, or on the economic impact of the Three Mile Island or Love Canal crises of the 1970s, could be very intriguing.

Consider the third core standard regarding the potential impact of different people and cultures on science and technology. I find the nineteenth and twentieth centuries fascinating for world and scientific history. I enjoy discussing the contributions of, for example, Michael Faraday, Lord Kelvin, Rudolph Clausius, Marie Curie, Ernest Rutherford, Niels Bohr, and Albert Einstein. I also enjoy discussing the unpleasant episodes of the First and Second World Wars. I remember an organic chemistry professor telling me during my master's studies: "If you're not a good student of history, you likely won't be a good student of science . . . you'll never appreciate where knowledge came from."

Imagine the enormous potential for this standard as part of thematic teaching. The modern physics revolution, World War II, and the Holocaust. The Civil Rights movement, school desegregation, and the life of Dr. Charles Drew. Galileo and the church-dominated middle European culture. Microelectronics and the founders of the SONY Corporation in Japan. One could even adapt this approach to the final core standard and discuss the relationship of the geography of polar regions to the ecosystem. Imagine children learning about polar bears, snow wolves, longitude and latitude, Eskimos, and famous expeditions all in the same lesson? Imagine assessment involving storytelling, picture drawing, and essays, rather than mere traditional tests and worksheets?

> Prior to our quest for coherent curriculum, we had focused on instructional strategies such as lecture and discussion and classroom activities such as worksheets and peer tutoring that we thought would help our students learn subject-specific facts and skills. We attempted to determine how much "factual knowledge" our students remembered by administering traditional classroom assessments. In our quest for coherent curriculum, the scope and sequences, textbooks, and separate-subject curriculum guides would not be the central organizers for our units of study. We were determined to put the needs and concerns of our students first. Our aim was to develop *with our students* units of study that were personally meaningful, mentally challenging, and connected as much as possible to the world outside of the classroom (i.e., authentic). We wanted to help prepare our students for a changing and increasingly changing world. (Pate, Homestead, & McGinnis, 1997, p. 33)

Perhaps the greatest upside to these standards is the opportunity for students to finally see the "big picture" about science, beyond the mere definitions of terms, symbolic representations, word problems, and lab activities. Yes, the call for standards often invokes the images of accountability, statewide and national testing, graduation criteria, and admissions criteria for higher education. But can we truly have one genuine curricular equalizer?

> Not all players begin with the same advantages; some carry handicaps throughout, and some more than others are able to take advantage of the accidents of circumstance in order to determine the winners and losers. Not only do teachers enter into the struggle for curriculum from an unequal standpoint institutionally and on unequal footing discursively, they enter into an historical juncture that is already populated with definitions of what counts as high status knowledge. (McLaren, forward in: Goodson, 1993, p. x)

Will a teenager from Kansas potentially suffer during an out-of-state college education, simply for not learning about evolution? What about a teenager in Los Angeles unschooled about life on the frozen tundra of northernmost Canada? What about children who do not learn about the Franklin kite experiment? Must children in Florida learn about earthquakes more than hurricanes? Must children in Chicago learn about tropical rain forests? It is not certain whether all these specific content items are any more vital than other items.

If the purpose of standards is to create an exhaustive list of factual knowledge for teachers to teach and students to study for exams, the meaning is lost and potentially wasted. It is unrealistic to cover every possible content item in our expanding world of exploding knowledge. The odds of students effectively retaining or comprehending such content for success in college are poor. Perhaps broader standards, which can accommodate a variety of science courses and school settings, potentially lay a better foundation for the future. Perhaps the post-Sputnik concept of "precollege" curricula fails to work as we enter a new millennium. Perhaps K-12 science education should focus on core ideas and themes, building for global literacy and "big picture" thought process development. Perhaps specific and voluminous knowledge comprehension should be left to higher education. Perhaps these standards provide the vision for K-12 education being a segue to adulthood, and higher education as something beyond "postsecondary."

> It is the middle of January and Ms. Smith's eighth-grade American History class is about to begin their chapter. . . . As she asks the students to open their textbooks, a girl from the back of the class raises her hand and asks, "Why do we have to learn this stuff? What does this have to do with me?" Ms. Smith

> sighs and says, "You know why we have to study this. Spring testing is just around the corner, and this will be on the test." The irony is lost on Ms. Smith. (Pate, Homestead, & McGinnis, 1997, p. 15)

The Downside of the Standards

Staying with baseball colloquialisms, I use the term "downside" to describe the negative potential relevant to limited growth and success, as if the proverbial glass ceiling is closer to someone's head than we think. Unfortunately, we can also view national science standards in similar fashion; metaphorically there is considerable downside.

> Certainly not all teachers object to external curriculum mandates or to the rigid structures of schooling that develop around them. Some welcome both, perhaps because rules and regulations give an air of authority to the teacher or because the difficult work of teaching is made a bit easier if others decide what should be taught and how. (Beane, forward in: Pate, Homestead, & McGinnis, 1997, p. ix)

A recent article in *USA TODAY* (Henry, 2000) offers rankings regarding each state's quality and accountability with curriculum standards. According to the Thomas B. Fordham Foundation, only five of our fifty states (Alabama, California, North Carolina, South Carolina, and Texas) are considered to have "strong accountability and solid standards." Three other states (Arizona, Massachusetts, and South Dakota) are recognized for "great academic standards" which unfortunately "do not count for much" (p. 14). The remaining forty-two states are said to have school-based accountability built on weak, mediocre standards, bad standards, zero accountability, or zero standards. It is personally sad to note that the states in which I have either been educated or served as an educator all rank among these forty-two states; each state I've resided in receives the harshest evaluation. Granted, critics such as the Council of Chief State School Officers question the validity of the Fordham Foundation's findings; however, such media articles reinforce my frustration from prior experiences with standards-based curricula.

Again, we return to a very fundamental question: What are the purpose and meaning of curriculum standards? If Henry's (2000) article tells the truth, we have far too many states with standards that are either completely ineffective or meaningless. Are standards merely an administrative recipe for teachers who cannot conceptualize content and pedagogy?

Henry's (2000) article is hardly unique. In the past year or so, I have personally clipped many articles and editorials from *USA TODAY*, the *New York Times*, *New York Daily News*, and *Philadelphia Inquirer*; the themes range from illiteracy among students and teachers, weak standards, unrealistically difficult standards, racial discrimination by tests, constitutionality of

tests, administratively orchestrated cheating on standardized tests, revised testing, and abandoned testing. School boards and school chancellors have been dismissed. School systems have been taken over by city and state agencies. The media feeds on this, furthering the frenzy.

In this era of standardized tests, educators express genuine concern regarding the lack of specificity these national standards offer. Testing often serves the purpose for comparisons between many students at many schools. How do we rank students? How do we determine qualifications for admissions for higher education? What criteria do we ultimately use to determine a good job of teaching?

> I find it curious that the National Science Education Standards is an atheoretical document. Throughout the document there appears to be a deliberate effort to avoid connecting science education with scientific theory. There are at least three aspects of this atheoretical nature: (1) the failure to prescribe any specific scientific theories, other than evolution, worth knowing; (2) the failure to define the role of scientific theories in scientific literacy; and (3) the failure to describe any specific theoretical framework to implement research studies on the inquiry approach. (Shiland, 1998, p. 615)

Shiland's (1998) comments strike at the heart of the standardized curriculum debate. On one hand, we seek a curriculum broad enough to serve all students in a variety of learning contexts, and yet on the other hand, we seek a curriculum detailed and specific enough to enable teachers and students to cover the "right" material. Shiland (1998) does happen to teach in a state driven by standardized testing, which may contextualize his concerns. However, it is additional concerns raised by Shiland that pose trouble.

> Throughout the document there is an extraordinary confidence in the ability of the student to construct logical explanations that are consistent with the evidence with respect to any natural phenomena. In other words, students are to spend much of their time to invent 200 years of scientific knowledge in the span of a K-12 education. The irony is that the NSES assumes students are sophisticated enough to develop their own models of scientific knowledge, but are apparently incapable of understanding specific and accepted scientific theories. Just as science students do not have the time to invent 200 years worth of scientific theories, classroom teachers do not have the time to invent theoretical frameworks worth testing. They need to be provided with an explicit framework of propositions regarding particular theories. . . . As students, they need to become fluent in the current theories of science education. (Shiland, 1998, p. 616)

What does Shiland (1998) mean by "theories of science education"? Is he referring to pedagogical or curricular theories, or does he refer to scientific

content theories? Does Shiland see "science education" and "science content" as equivalent terms? Is this where we are since the post-Sputnik, "teacher-proof" and "student-proof" curricula of the 1960s? Is this how far we have come since the table of contents approach to standards of the 1980s? Must we presume teachers and students are intellectual ninnies, requiring everything predigested and nauseatingly spelled out? Are teachers merely "de-skilled dupes" (Kincheloe, 1993, p. 3)? Are we still battling against "cognitive illness" in our schools (Kincheloe, Steinberg, & Tippins, 1992)?

> The first response to a new paradigm is usually to find holes in the theory (i.e., where is the exception?). To offer students and teachers the freedom to choose their own methods of solving problems, to make them aware of options and the value in alternatives, one might think that these poor souls were just sentenced to an eternity in purgatory. *Choices?! Please don't give me any . . . what if I make the wrong one?!* (Pushkin, 1998b, p. 191)

Kincheloe (1993) poses three interesting thoughts: "Students of modernism's one-truth epistemology are treated like one-trick ponies, rewarded only for short-term retention of certified truths" (p. 3). "When behavioral psychology was added to the pedagogical recipe, teachers began to be seen more and more as entities to be controlled and manipulated" (p. 7). "Teaching is a technology with an identifiable outcome lending itself to short-term teaching goals" (p. 18).

Why must science education content and pedagogy be formulated and mechanical (Pushkin, 2000)? Why must learning be driven by the almighty multiple-choice test? Why do we continue to view learning so myopically? Do we genuinely know any better? Do we have so little confidence in ourselves and our students that standards warrant a minimalist, play-it-safe perspective in order to ensure the highest passing rate? Do we desperately need convenient evidence of mastery (Pushkin, 1998c)? Is science education really as Shiland (1998) sees it? Is science education ultimately the practice of confirming the right answers, the static, the bottom line, the obvious, the known (e.g., Pushkin, 1997)? The following is perceived by many:

> Teachers are wimps—passive creatures who do what they are told, who feverishly avoid any challenge to mainstream values or perceived injustice. Attempts to teach higher levels of thinking, new ways of seeing, more sophisticated consciousness are repudiated by reformers fearful of any form of experimentation . . . creative pedagogy has been rendered evil. . . . Education cannot be reformed by decree. (Kincheloe, 1992, p. 230)

Perhaps one of the greatest upsides to the core standards is one of its greatest downsides. The vision of interdisciplinary holistic science education through each grade serves as

blessing and curse. Science should be interdisciplinary; understanding should be cumulative.

However, this is not the way our schools are structured. If not by middle school, certainly by high school, students do not experience broad general science courses. Courses are compartmentalized, discipline driven, linear sequential, and prerequisite dominated. Students take biology, chemistry, and physics courses in some prescribed sequence, typically in conjunction with their math courses. Although each science course serves as a prerequisite for the others, rarely do syllabi, textbooks, or learning activities offer connections. Is chemistry inherently incapable of exploring diffusion from a biological perspective, or ideal gas laws in terms of the respiratory system (Pushkin, 2000)? Is physics precluded from analogizing electric circuits with neurons? Must biology be devoid of meaningful chemistry and physics concepts solely on the basis of course sequences? Must biology be biology, chemistry be chemistry, and physics be physics, never to overlap or meet? Must the interdisciplinary fields of biochemistry, biophysics, geochemistry, geophysics, and chemical physics perpetually be relegated to academic misfit status? Must we view science curricularly in terms of square pegs and round holes, or can we finally see science as a cohesive, all-encompassing entity?

> The dominance of the academic subject tradition was confirmed not only by ideology but by the organisational structure. . . . When an interdisciplinary syllabus combining academic, utilitarian and pedagogic intentions is appraised by such committees only in terms of the academic content of existing disciplines the judgment is merely self-fulfilling and serves to duplicate the traditional academic content of existing disciplines within the new subjects. . . . Since "irrelevant topics" have to be removed so that the main (academic) topics can be covered in single subject "depth," it follows that the effect is "to reveal how close the resulting syllabus would be to existing syllabuses." (Goodson, 1993, p. 179)

If indeed the core standards are a vision for science education, they appear incompatible with the vision long established in K-12 science teaching. Perhaps this is why the core standards are "voluntary" (Texly & Wild, 1996). Envisioning a broad interdisciplinary curriculum for each grade seems quite ambitious; this vision is significantly, possibly radically, different than the status quo. Perhaps the authors sadly knew the reception these core standards would receive by the entrenched and inertial establishment, mandate or recommendation notwithstanding.

> There has been something of a tendency to see resistance to change as so many exhibitions of irrationality and self-interest, to be swept away by the use of rationality and power. The repeated failures of this technical-rational view of the change process have led to reappraisals of how change happens and of what happens to the

> change itself in the process of change. (Brown & Knight, 1994, p. 128)

Another blessing and curse of the core standards seems to relate to the process of science and the development of thinking skills. The potential impact of the nature of science on science content comprehension is well debated (e.g., Alters, 1997a-b; Eflin, Glennan, & Reisch, 1999; Schibeci & Murcia, 1999; Smith, et al., 1997; Smith & Scharmann, 1999). Theoretically, the stronger our understanding and appreciation for the nature of science, and how knowledge evolves, the potentially stronger our understanding of science content. Unfortunately, upon reflection of Shiland's (1998) insights, understanding and appreciation of the nature of science appear too time consuming and pedagogically inefficient (e.g., Pushkin, 2000) and detract from the perceived purpose of science education: to learn a body of information for the sake of correct test answers. In fact, from a cynical perspective, might we wonder if Shiland's (1998) definition of science education is fundamentally a means to elicit correct answers by students to teachers' questions?

> Student knowledge is based on the notion of replication rather than interpretation, as students are deemed "to know" only when they can display a fragment of data at a teacher's bidding. Schools reflect positivist assumptions when they affirm that the most significant aspects of school can be measured. If their positivist tunnel-vision objective tests deny students a chance to transcend the reductionism of measurability, they cannot in this context respond creatively, develop a relationship between their lived experience and the information, or learn intrapersonally by establishing a personal position on the issue. Such an approach encourages a stimulus-response reflex, erasing the totality of the person from the learning process. In the positivistically defined school, student subjectivity is viewed with suspicion if not hostility. (Kincheloe, 1991, pp. 64–65)

Are teachers hopelessly conditioned to "teach to the test"? Is this preventable? Is it rectifiable? How will students view the learning process if standardized test scores are the ultimate mode of assessment? Will the true value of science standards depend on how well they match test items? Will "good" or "meaningful" science translate to "right" or "testable" science? Will this ultimately set the criteria for what constitutes real or legitimate knowledge (e.g., Goodson, 1993)? Is science sadly a collection of facts, lacking nature or essence? Are we too naïve to have not realized this?

What if we make the standards more specific? What if the standards present a prescribed list of definite concepts for coverage (e.g., MCAT "hit-lists," or table-of-contents-like performance standards)? What do we sacrifice, in terms of broad understanding of science and scientific literacy? Will there be more or less pres-

sure on K-12 and college educators to cover their curricula? If we stray from the list, or possibly supplement it, will students rebel or dismiss us for teaching irrelevant material?

> If any form of assessment is used too frequently, students can learn to respond automatically. Consequently the assessment might no longer measure quite what you want it to. Its validity lessens. People appreciate that this is so for well-known forms such as multiple choice tests. (White & Gunstone, 1992, p. 180)

So what ultimately is the downside to the core standards? Are they too general? Are they too abstract for a perhaps anally retentive, concrete-minded teaching profession? Do they offer too much "wiggle room" for teachers to avoid teaching substantial content, or specific content at all? Do they take for granted cognitive sophistication of students and pedagogical enlightenment of teachers? Do they possibly expose teachers' lack of content knowledge mastery, or misconception of teaching content (e.g., Bryan & Abell, 1999; McLoughlin & Dana, 1999)?

Perhaps these are all valid concerns. However, the ultimate downside to the core standards lies within their epistemological and ontological foundation. The foundation itself is not wrong; its overwhelming contradiction with the epistemological and ontological status quo does raise concerns. As with any reform movement, if the profession is not epistemologically or ontologically ready for the reform, that reform will likely die a painful death. The authors of the core standards are to be applauded. However, they forgot to address a fundamental paradigm issue first. The core standards do not have a downside in their conception or purpose. The downside relates to their intended target; a presumption was made regarding the willingness for a paradigmatic shift.

Conclusions

Is there a conclusion to draw? That remains to be seen; certainly one cannot definitively conclude whether the core standards are good or bad for science education. We can at least identify primary upsides and downsides to them. The primary upside of the core standards relates to a progressive view of science. The primary downside relates to a regressive view still pervasive in our schools and colleges.

Changing curricula and pedagogical practices requires a radical change in epistemological and ontological views. How we view knowledge, how we view teaching, how we view learning all require serious reevaluation. While the core standards reflect Shulman's (1986) pedagogical content knowledge, as well as inquiry-based learning (e.g., Crawford, 1999) and social constructivism (e.g., Moll, 1990; Pushkin, 1997), are science educators on the same page? If Shiland (1998) is representative of the science educa-

tion community, all indications point towards considerable disagreement and resistance. Meaningful reform is doomed in the hands of an inertial establishment.

Are the core standards strong enough? Some critics will argue yes, and others will argue no. Those arguing yes will likely point to broadness and potential for interdisciplinary "big picture" thinking that the core standards envision and encourage. Those arguing no will likely point to lack of specificity and factual substance. However, both arguments reflect the contrasting image of teachers and learners. If our view of teachers and learners is one of empowered critical and creative thinkers, we will likely endorse the core standards, building our curricula from broad ideas and our own epistemological and ontological views. If our view is one of intellectually stunted robots incapable of independent thought, we will likely condemn the core standards, and demand curricula served to us by arbiters of power.

The underlying premise of the core standards was to enable all citizens to be scientifically literate. What defines "scientific literacy" is a subject of debate (e.g., Hurd, 1998; Longbottom & Butler, 1999; McGinn & Roth, 1999). However, until we can come to a firmer understanding of what defines "science," and what the purpose of teaching and learning science is, we will never fully come to terms with "scientific literacy." That said, we will never know whether the core standards are a good thing for science education or not. The two most prevalent curriculum movements of the twentieth century failed to resolve these issues.

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SOCIAL STUDIES STANDARDS

Diversity, Conformity, Complexity

Yusef J. Prögler

If the goal of human history is a uniform type of man, reproducing at a uniform rate, in a uniform environment, kept at a constant temperature, pressure, and humidity, living a uniformly lifeless existence, with his uniform physical needs satisfied by uniform goods, all inner waywardness brought into conformity by hypnotics and sedatives, or by surgical extirpations, a creature under constant mechanical pressure from incubator to incinerator, most of the problems of human development would disappear. Only one problem would remain: Why should anyone, even a machine, bother to keep this kind of creature alive?

Lewis Mumford,
The Transformations of Man

What exactly is a "student teacher"? As I understand it, a student teacher is a person of student age who is far enough along in his education to be doing some teaching. But a "student teacher" could also be someone who simply teaches students, a student *teacher. Which is what all teachers are. Or a student teacher might be a student studying to become a teacher. Not yet a teacher, still a "student teacher." Such a student, studying to be a teacher, could also be called a "teaching student," which is, after all, what our original "student teacher" was: a teaching student. Sometimes teachers, later in their careers, go back to school for further education, and once again they become students, while still remaining teachers. Well, if a younger student who is doing some teaching is a "student teacher," then wouldn't an older teacher who goes back to school logically be a "teacher student"? Or I guess you could call her a "student teacher," couldn't you? So far, that's three different kinds of student teachers. Now, these teachers who go back to school obviously have to be taught by "teacher teachers." And if one of these teacher teachers were also taking a few courses on the side, that would make her a "student teacher teacher." And if she were just beginning that process, just learning to be a "student teacher teacher" wouldn't that make her a "student teacher teacher student"? I think it would.*

George Carlin, ***Brain Droppings***

Standards of Diversity: Reflecting on Teacher Identities

As a counterpart to the numbing conformity of the bureaucratic and conservative culture of public education,

we can look at the incredible diversity of the students that the system is actually supposed to serve in a place like New York City. This is evident throughout most teacher education programs, especially in public institutions. In order to illustrate the possibilities for standards of diversity, let me describe briefly a typical semester of my social studies methods seminar, which I teach concurrently with the student teaching field experience. During our first two meetings, we introduce ourselves, speak about our backgrounds and identities, share some expectations for the course, and reflect upon and name the qualities we associate with the worst and best teachers. A few important issues and themes usually emerge from these shared experiences, and before getting to a more formal "course description," I usually like to take a little more class time and reflect upon the implications of these first two open meetings for the rest of the semester.

In terms of racial, ethnic, and ideological identity, we are quite a diverse group: Black, White, Hispanic, American, European, Italian, Anglo, Irish, Caribbean, Moroccan, Slavic, Israeli, Jewish, Christian, Muslim, atheist, anarchist, Socialist, Nationalist, Luddite, and Libertarian. In addition to English in all its varieties, we speak many languages: Spanish, Haitian Creole, Russian, Serbo-Croatian, French, German, Berber, Hebrew, and Arabic. Some of us have traveled the world and lived outside the U.S. in places like Africa, the Mideast, and Central America; others have never left the neighborhoods in which we were born. We are also quite varied in terms of gender, class, age, and life experiences: some are the sons and daughters of civil servants, while others are from professional or highly educated parents. We have people in their early twenties not yet out of college alongside grown women and men returning to college in the midst of a career change. Some of us have raised children, others are barely out of adolescence. Many of us hold jobs, and a few of us are already working full time as what the city now calls "pre-certified" teachers; others are full-time students and have had no teaching experiences. It's a dizzying array of identities, the surface of which I am sure I have only begun to scratch, and each semester always reveals new facets.

In speaking of our expectations for the course, we generate an equally diverse set of responses. Initially, our expectations most often seem to me to be of three general types: (1) getting a handle on content (e.g., the full sweep of global history), (2) learning some effective methods and materials (e.g., lesson plans and classroom management), (3) figuring out how to plot a course of professional development (e.g., navigating the mazes of certification, licensing, and standardized testing). Many seminar participants speak of wanting to find a balance between content and method, or of wanting to clarify issues of curriculum and standardized testing. Some have their eyes on a broad vision of the future, while others just want to get through tomorrow. More specific concerns range

from the mundane to the profound: concerns with getting a paycheck, controlling group behavior, and writing standard lesson plans reside right alongside calls for liberatory education and reformulating American citizenship. How to deal with fear, the clock, and the bureaucracy rank high on the list of some of our personal concerns. Some of us desire nothing more than anecdotal sharing and informal networking experiences, while others seem to need a highly structured how-to experience. Literacy is a hot topic, given the constant influx of new immigrants. In short, as with our identities, the diversity of expectations is astounding.

When we generate a list of qualities based on collective recollections of our worst teachers, the chalkboard quickly fills with terms and phrases like: boring; arrogant; talks too much; lies to students; is disrespectful, authoritarian, regimented, time bound; screams too much; has poor hygiene; acts stupid, lazy, racist, biased, sexist; doesn't listen; and appears detached from reality (to name just a few). After constructing this nightmarish composite of our own worst teachers (Franken-teacher?), we proceed to negate each quality, generating a list that includes terms like: empathy, sincerity, honesty, listens to students, respectful, balanced, objective, shows kindness, flexibility, self-criticism, and knows material (again, to name only a few). This list is usually met with murmurs, ranging from "you'll get eaten alive" to "where've you been all my life." While some of us appear to want the negated list to be a magical recipe for being a good teacher, most seem to realize that we are simply negating our own recollections. Interestingly, the best-teacher list seemed to need some elements from the worst-teacher list, depending on the context (i.e., institutional, personal, academic). From this reflective exercise, it seems quite clear that our perceptions of our own worst and best teachers are complex and intertwined.

Someone once said, "Complex problems have simple solutions and they are always wrong." Taken together, our teacher identities, course expectations, and recollections of past experiences constitute what appears to me to be a complex problem of how to proceed with the methods course. To approach this complexity with a simple cookbook of teaching techniques would do an injustice to many of our concerns. Likewise, treating the experience solely with a "touchy-feely" humanism would leave unattended other major issues. Purely practical or totally theoretical approaches will not solve many of the complex problems we raise. What seems necessary is a combination of technical, theoretical, humanistic, philosophical, and practical approaches, which is what we end up constructing along the way.

Standards of Dysfunction: Reforming Teacher Education

Before delving any deeper into revising secondary teacher education programs with a new emphasis on "the

field" and "excellence," it seems to me that colleges of education need to clarify a few fundamental points: (1) What will be the relationship between the various methods courses and the field experiences? (2) What exactly is a "capstone course"? (3) What do we mean by "action research"? (4) Beyond political expediency and accommodation, what meaningful role will the academic disciplines play in a revised secondary program? (5) Are the "foundations" courses, as presently conceived and implemented, still relevant in proposed restructured programs? (6) How will newly conceived programs rectify or avoid some of the major dysfunctions of the present programs? (7) Beyond expediting registration numbers, to what degree are generic education courses still relevant? Without taking time to articulate thoughtful responses to such fundamental concerns, colleges of education risk reproducing old programs in new guises, which begs the question, "why bother at all?" Assuming that we need to change an existing teacher education program, and that we wish to construct a more meaningful program in its place, it seems necessary to keep these basic issues in the forefront. With that in mind, let me briefly discuss some of the preceding questions.

For any restructuring to be meaningful, we will need to rectify some dysfunctions in present programs. A major dysfunction is in the Kafkaesque process by which graduate applications are evaluated. It is patently unfair for students to have to wait months for news, and for them to be unable to even know who has their application. It's also silly for applications to be evaluated by folks in the disciplines, for purely political reasons, when there are perfectly competent people in-house for most of the major academic areas. Adding to this is the absurd practice of overriding, preempting, or circumventing each other by finagling various backdoor or under-the-table arrangements. Why bother to construct another vast bureaucratic edifice of standards, prerequisites, and entrance requirements if what really matters is who you know? But these are almost beside the point, since under the present system of entrance criteria, the evaluation of applications should take only a few minutes for a machine to compute: minimum grade point average and prerequisite course numbers. Even though we may think otherwise, the relevance of prior work in the social sciences is of little importance (e.g., virtually anybody with clearance from the board of education on *x* number of broadly defined "social studies" credits can qualify under the present system). While it seems necessary that we support any program of providing opportunities for people to retool their lives, we also need to have some kind of minimal consistency or sense of fairness between the myriad agencies and bodies that read applications.

Another clear dysfunction, at least from the perspective of social studies, is the irrelevance of most graduate social science courses to teaching secondary social studies in a place like New York City. In many colleges of

education, there are perfectly competent people in-house who know both education and the social sciences, in method and content, even if we are not taking advantage of their expertise. If folks in the departments learned something about teaching social studies in a place like New York City, then we'd at least have common ground for cooperation and discussion. A variation on this is already being proposed by various professional historical organizations, and if colleges of education don't get with the program, they may find their entire secondary education programs hijacked by academic departments that hire a few "methods" professors. Many present programs are watered-down versions of a disciplinary MA anyway, with very little sense of how education and the social sciences interrelate. Let's face it: many students declare "social studies teacher" as their graduate major only because it's seen as easier than an MA in any of the disciplines. But this is a self-fulfilling prophecy, in that people who sign up for a dumbed-down program are often treated as if they really are dumb, and then we all wonder and complain about "no standards" and all the "dummies" teaching in public schools. There are other problems, but these are the worst. In short, what is the point of going through the prolix hassle of restructuring colleges of education and reforming teacher education programs if we do not address present dysfunctions?

In many colleges of education, students take a "methods" course concurrently with their "field experience." But prior to that final semester, they have had no experience with upper grade level social studies curriculum, teaching, and assessment. Despite wishes to the contrary, most "middle school" courses provide very little in the way of secondary methods for the social studies. This is not surprising, nor is it really anybody's fault, because such courses speak to middle school concerns, which by definition are interdisciplinary. But secondary standards pushed by the state agencies are requiring more focused and disciplined inquiry, even in elementary schools, and public school administrators are now asking for people with a strong background in history and who have taken methods courses prior to student teaching. It's clear that, at least from the perspective of social studies, we need a preservice course that surveys methods and curriculum for social studies, and which will begin to look at the ways the various social science disciplines inform teaching and research.

This course can have some field observation, and even some "action research," but it needs to address some fundamental points: (1) What are the various kinds of standards presently in place (e.g., content, process, performance, or outcomes-based) and how do they fit together? (2) What exactly is a "teaching method," and how does it differ from a technique? (3) How do the various social science disciplines inform teaching methods? (4) Why do the social studies still maintain a central position in many secondary graduation standards? (5) What is the current definition of social studies, and

does it still encompass the traditional array of five or six social science disciplines? (6) What are the various local, regional, and national debates and controversies around social studies? After some rigorous work on these issues, students can do the student teaching, which would run concurrently with a less rigorous, perhaps field-based, course that will address the myriad day-to-day methodological and technical concerns of new teachers. Putting the field and methods together in the same semester, in the absence of prior work, is counterproductive, since students either give in to the daily grind, disregarding the larger questions, or they focus on the larger questions and exit unprepared for the daily grind. A meaningful secondary social studies teacher education program can meet multiple sets of standards, but time and credit hours will have to be allocated for course work before, during, and after the field experience, and this course work needs some discipline specificity within social studies, along with more relevant articulation between education and the social sciences.

When we speak of a "capstone" course, this usually implies that it will top off a coherent and carefully constructed sequence of courses and experiences. Is this what we have in mind? Certainly many programs as they stand now are far from coherent, so putting any sort of stone on them may be more like sealing a grave, burying students under dumbed-down irrelevancies and our own political expediencies. It seems to me that before we think about capping off our programs, we ought to more clearly define them, and then decide whether or not they need a cap, and what form that cap might take, and how heavy it ought to be. Regarding "action research," this term has become faddish, and it means different things to different people. What do we mean by it? Do we take it to mean research into teaching and learning that derives questions from ongoing fieldwork? Is it a form of participant observation? Will methods courses talk about doing action research, or will the time be spent more or less in the field with minimal class meetings and lots of what might be called "thesis guidance." Is it going to proceed from the norms of a generic education course, or will there be discipline-specific or theme-oriented or age-graded versions of the research? If some sort of action research project is to be a significant part of the capstone course, then this seems to imply a thesis. Will we assume that students can read and write on a functionally graduate level, and that they'll know how to do relevant research, action or otherwise? Or do we need some prerequisites or basic academic competencies first? Can faculty be given adequate teaching time for thesis guidance and field supervision, as is the norm in most other academic programs, or will we eschew the thesis completely, devising some kind of standardized examination in its place? Many of these questions will likely begin to find answers during the

process of addressing the present dysfunctions in colleges of education.

At present, there are few connections between social science departments and schools of education, at least if we use the present graduate level programs as any guide. Students take a few very specific courses in the social sciences and a few generic education courses, but there is no place to articulate the relations between the two. This always struck me as odd, until I realized that people are more concerned with turf wars and full time equivalent enrollments (FTEs) than they are with quality and meaning. If we are going to maintain the tit for tat, you take the *x* credits and we'll get the *y*, those are "your" students but these are "mine," then we at least ought to be up-front and honest with each other and our students about this as a political compromise at the expense of meaning and relevance. But if we are really serious about revisions that involve such articulation, then we ought to rethink the courses on both sides. This can entail reviewing the offerings for relevance to teaching social studies, which should also involve considering course work grouped around the primary teaching needs, such as American history or world history. Anything less may only standardize present dysfunctions, leaving students adrift in a schizoid hodgepodge of random course work.

Maybe the time has come to rethink our notion of "foundations." Some professors of education have already noted that it may be more relevant to cover the usual foundational content after having done some fieldwork and teaching, while others of us are committed to a "foundations first" approach. In any case, very few of us teach with both in mind. Perhaps sending students out into schools, museums, neighborhoods, and other sites while learning the foundations would be more desirable. Such an approach could move foundations closer to "action research" and may link up with the inclinations to make things more field oriented, only with a broader definition of the field. And we'll also need to consider exactly who will be in these foundations courses, however they might be conceived, and to what extent the registration will reflect early childhood, elementary, middle level, and secondary concerns (beyond the present concerns of expediting staffing and enrollment) or be limited only to students in colleges of education. The idea of a "self, school, society" type course early on, cross-listed in the academic departments or even as a general education course, seems appealing. Similarly, a course on urban education seems necessary in places like New York City. However, there's less agreement about the traditionally generic child development or philosophy of education course offerings, at least those that reflect stagnant discourses or that have not considered a solid generation of new scholarship and critical commentary. Much of what we teach in such courses is irrelevant in light of emerging paradigm shifts in philosophy and the social sci-

ences, and especially in psychology. Our students deserve so much more.

Standards of Conformity: Entering School Culture

Conformity in a large bureaucracy is infectious. Each year, I begin my student teacher orientations by warning applicants that the student-teaching experience will be very demanding of their time. Beginning in early February and ending in June, they follow the board of education's academic calendar in their cooperating school. Some schools will require that they attend orientations during January and help out with standardized examinations in June. In any case, the minimum time spent on-site in the cooperating school is three or four hours a day, five days a week; most schools require longer hours. The State of New York has recently doubled its minimum number of field experience hours from 150 to 300 in order to certify teachers, but even before that mandate many students easily did 300 hours in a single semester at a school that made demands on their labor above and beyond the minimum requirements as a contingency for accepting student teachers in the first place. Because of such great demands on time, the single most challenging factor in student teaching—and the issue that has led to the most dismissals in the past—is unrealistic time management and planning. I warn them that they should realistically plan to spend many, many more hours in student teaching than what is implied by the number of credit hours they get for the course. It is in many cases like a full-time job, depending on the field site in which students are placed, and their prior preparation, and I find myself having to frequently remind them that they ought to plan their semester schedules accordingly, more as a matter of practical survival than as an ideological commitment.

The high schools in which we place our students, mostly in Brooklyn and Manhattan, are typical of New York City and tend to be fairly conservative places, despite the liberal veneers. In such a context, I try to impress upon students that they should think of themselves as professionals, which is also sometimes useful for making the broader point that in the field they need to think of themselves more as teachers and less as students. This means looking and acting the part, dressing like they would for a job interview, since they'll probably be looked over from day one as prospective employees. "No hats, sneakers, shorts, T-tops, or jeans," I intone, "Your hair should be neat and clean, and men should either shave daily or keep facial hair trimmed." The conservative school culture demands that they be polite and courteous in their dealings with principals, teachers, and parents, despite the teachers that we all recall who had frizzy hair and wore tennis shoes. I remind them, "Please don't slouch, don't use street slang, and look folks in the eye when speaking to them." Promptness is a key attribute of the conservative school culture, and I remind my students that if they are go-

ing to be late or absent it is their responsibility to call ahead, and to perhaps arrange for a substitute; the worst thing a student teacher could probably ever do is to not show up. This point often calls for an important adjustment in how many students relate to their education; in the business-driven world of standardization, college feels more and more like another job. I usually round out their orientations by emphasizing that they should never, ever "fraternize inappropriately" with their students, that they should not gossip in the teacher's lounge, or anywhere else, and, only half jokingly, that they "avoid screaming and too much coffee." This presentation occasionally orients a few students out of the program, but most of them show up next week for another round.

In secondary programs, college academic majors usually only nominally prepare student teachers for the kinds of things they will be called upon to teach in the public schools. Public school teachers have traditionally been generalists; academic departments are oriented toward training specialists. In most schools, despite the new discipline-based content standards, secondary social studies teachers can at any given time be called upon to teach the entire scope of American history, world history, government, or economics. On occasion, a few teachers may be asked to do a humanities, law, or sociology class. Due to a number of factors, student teachers rarely get a feel for what it would be like to teach a complete course. In some contexts, largely in cases where student teaching happens only during one semester, they may find themselves observing and teaching only the former or latter half of a full-year course. For those assigned to student teach in the spring, in New York this means that history courses may be focusing on the modern era; many will cut short their studies to begin preparing students for Regents exams, depending upon how heavy-handed the system is at any given moment, what the pass/fail numbers show in recent years, and who's accountable. So given all these overlapping expediencies, I tell my students that the best thing to do is get a jump on preparation and do some serious reading during intercession, especially in those areas for which they are least prepared; otherwise, they'll be overwhelmed come February. Although in colleges of education we try not to limit ourselves to things like teaching from the textbooks or to the standardized tests, I remind students that it is usually a good idea to borrow a few textbooks from a local high school, and buy the standardized examination preparation books, since those tests do reign supreme. I learned this from one smug assistant principal who answered my query into how he deals with state standards by simply stating, "The exams are my only standards."

A standard student teaching experience involves some teaching, some observing, some planning, and some clerical work. In addition, and depending on the school, many student teachers will be asked to participate in meetings, parent-teacher conferences,

class trips, and other extracurricular activities; some schools require more extracurricular participation than others. I ask them to be flexible and accept as many offers as they can, in the interest of collegiality. But most time for student teachers is spent in planning and preparation, something that many are unable to fathom until their experiences are under way. Student teaching involves many hours of planning and grading, most of which is done at night, on weekends, or during vacations; student teachers can usually expect at least two to three hours of such preparatory work each and every day of the year. Some cooperating teachers require them to write daily lesson plans. The best way to prevent headaches and grief is to begin preparing some advance lesson plans before the experience, and then to beg, borrow, or steal as many as possible once in the field. Unfortunately, in some departments one finds a lone cowboy attitude where there is not much true and honest sharing and so most student teachers get into the bad habit of writing plans the night before they plan to use them. This is especially difficult for those students who are trying to complete their degrees in the same semester as student teaching by taking their other courses concurrently, along with standardized exams, or for folks who are holding down jobs and raising their families.

Since the state requires a certain number of hours in the field to grant certification, student teachers must keep a time log of all the hours they spend in their cooperating school. The requirements used to be somewhat flexible, but the standards bureaus are increasingly stipulating specific kinds of hours and making distinctions between "observation" and "teaching" hours. In some cases, one can find a requirement for a certain number of days, not hours, but this usually just leads to redundancies like converting days into hours and back again. Once accumulated, the cooperating teacher, assistant principal, and professor must sign the time log, and most of these are configured in terms of hours. Where a form of portfolio assessment is in place, the time log is sometimes necessary for the certification portfolio; in any case, communication with teachers and supervisors is essential with respect to hours or days accumulated. I warn my students that it's not like college, where they can blow off a class when they're tired or too busy, and then weasel out of it at the end. Public school teaching is relentless. If they don't show up once in a while or if they disappear without warning, the conservative teacher culture will label them "unreliable" or "not a team player," and they may have difficulty getting a decent job referral or letters of recommendation. This applies as much to the required hours as it does to all those unrequired hours. The job market for social studies teachers is generally very tight, and officials will pick and choose among the best candidates. Student teaching is often the key to a job, and the impressions made will likely follow them, especially if they decide to stay in New York City.

Many student teachers don't know it, but when they sign up for the field experience and take those first steps toward employment they are preparing to enter into a Kafkaesque bureaucracy of standards, certification, and professional development that could last up to five years or more before they are really settled into a steady and relatively secure teaching position. Even this is tentative, since talks are currently underway in many places to trade off tenure for salary hikes. In New York City, which suffered a "fiscal crisis" (i.e., the city went bankrupt in the 1970s), salaries are stunted so there's a real incentive to make this trade. The principals' union recently made the trade, accepting a $10,000 pay hike in exchange for switching to three-year renewable contracts, which seem to be gaining ground where unions are weak, ossified, or complacent. But there will be jobs of one sort or another, especially in years of high retirement and contract buyouts, so running the gauntlet of certification and licensing seems necessary. "The best thing to do is to remain calm," I say, "and be systematic, and keep abreast of all the city and state requirements and deadlines." "If you have not gotten fingerprinted yet," I find myself telling them, "*Do it now*. If you can't do it today, do it tomorrow, if not tomorrow, the next day" (they get the point). Last time I checked, fingerprinting through the board of education costs eighty dollars (postal money order only, and only in the *exact* amount currently specified by the board of education) and takes at least ten weeks to process (often more). Students cannot get a teaching license without fingerprints, and the FBI runs them for felonies and selected other offenses.

In the best of worlds, most colleges of education will help students save some time and money by submitting their applications for certification to the state, and there are usually information sessions to help prepare applications. However, it is the student's responsibility to obtain and fill out the requisite paperwork, and submit it all on time. While there are currently several standardized exams required to become a teacher, initially they need to worry about the Liberal Arts and Sciences Test (LAST), and the Assessment of Teaching Skills-Writing (ATS-W). Students need to take the LAST first, but if they paid reasonable attention in liberal arts core courses, most should be able to pass it. Many will take the ATS-W after or near the end of student teaching, since they'll be able to draw on classroom experiences for most questions. However, if they qualify for "accelerated certification," they need to take the ATS-W as soon as possible. For students who are unsure whether they can pass such standardized tests, there are several review guides available, in a growing industry responding to the standardization movement, but most of these are alarmist and unreliable. The state maintains a list of "outcomes" on its Web site, but these are too general to be useful. It's ironic that on the one hand the state foists off standardized tests on students of all levels, but on the other hand frowns upon "teaching

to the test," which is still the proven method of getting through the bureaucracy. From past experience, the best strategy is talking to people who have already taken these tests, to get a sense for the kinds of questions that are asked.

Standards of Confusion: Teaching Anachronism and Hyperbole

In my daily travels around New York City visiting my secondary social studies student teachers, I have come to recognize certain generic tendencies in teaching that illustrate the epistemological confusion of social studies teaching. Let me illustrate by describing a lesson that I've seen taught a number of times by different people in different places. The topic is Japan in the nineteenth century, and the "aim" is usually something like "should Japan have opened trade relations with America?" The teacher begins by "motivating" students with a student produced drawing of Commodore Perry's infamous nineteenth-century landing in the Japanese harbor. Students briefly study the picture for clues as to what is going on. One remark that the people look "Oriental" because they have "yellow skin" brings howls of laughter. The teacher is clearly in control, overly so, perhaps. Eventually, the students deduce the context and provide the aim question, and the teacher has successfully "elicited the aim," which is related to whether or not the Japanese (who the students later become via role playing) should open trade with the U.S. according to the terms set out in two documents, a letter from President Fillmore and another letter from Perry. Students read the letters, and the teacher questions them on their content. He knows the answers in advance to all the questions he asks, and the students ask no questions. The class tosses around opinions on the proposal, and the teacher writes a "yes and no" chart on the board with reasons for each. He hands out a third document, from some sort of advisor to the emperor (at this point it is clear that the students are assuming the role of the emperor, though that is never really discussed or made explicit). Glancing at the clock, he then abruptly announces, "OK, it's time to make a decision." The class votes by a show of hands and the decision is predictably split. The teacher concludes the lesson by asking a few students about how they voted and why, the passing bell rings and everyone shuffles out.

On the surface, this seems like an "effective lesson." The teacher is at ease with his control of the class, moves smoothly from task to task, involves students in behavioral schemes, basically fulfilling all the current items on a standardized rubric used to evaluate teachers. Beyond the things we could say about the behavioral cooptation of constructivism, there are other serious contradictions with such a lesson, and I'd like to discuss briefly why I think this kind of lesson suggests a standard of confusion in the teaching and learning of secondary so-

cial studies. First of all, for the students to assume the role of the emperor is anachronistic, which is particularly clear once a vote is taken, since the emperor is a party of one, and even if he consulted others it is much more likely that no votes were taken in the Japanese imperial court. If we forgive that oversight, a crucial question to make a reasonable decision, since using hindsight is the norm, would be, "What was the U.S. track record in similar cases?" No such questions are asked. Students are simply well trained in the standard lesson format, waiting for the teacher to ask questions, redirect them when necessary, and construct the board outline.

What else are these students learning? Reading, perhaps, and being able to deduce clues from documents. This seems to fall under the rubric of "critical thinking" and analysis, and may help in preparing for the dreaded document-based questions (DBQs) on the latest round of state standardized tests. But I think they are also learning that decision making for an emperor is done democratically. (Similarly, one could also ask whether or not the decision "back home" to offer Japan a Faustian bargain were made democratically.) In other words, there seems to be a hidden civics lesson lurking in here somewhere, though anachronistically detached from the lesson content, and with nineteenth-century Japan as a proxy. With vague notions of these yellow Orientals pondering their future (which we already know), the ups and downs of "modernization" and "progress" juxtapose nicely with the implicit notion of Western supremacy and the inevitability of colonization and assimilation. This exchanges present student feelings of what is right and wrong with those of emperors and an admiral, about whom they know very little. The end result is variety of epistemological confusion. I use a video of this type of lesson in my methods courses, and we usually need to watch it again in order make some useful distinctions between form and content.

Sometimes, while reviewing parts of the video, I ask students to fill out a standard lesson plan template, including the "do now," the "motivation," and the instructional objectives. We fine-tune it a bit in class, and then complete it at home, adding two questions: What other possible ways might there be to wrap up such a lesson? What would you do differently? In the next session, we watch the entire video again. On the surface, it is really a picture perfect lesson, technically, no doubt getting high marks by evaluators, many of us note. Then we talk about ways to summarize and apply the lesson, and devise a homework or follow-up assignment. Some students suggest homework assignments that would involve reading the historical record somehow (in textbooks?) and then consider how student answers to the "aim question" might be right or wrong vis-à-vis the historical record. This was thought necessary, since the teacher asked the class to take a vote and justify their positions, with half the class coming down on either side of the yes or no divide. But other stu-

dents become concerned about the repercussions of telling students, after all those thoughtful deliberations on the documents, that their answer was "wrong."

A few more students begin trying to link the exercise of deliberating on primary documents with some kind of current events, where the outcome is not yet known, or where it has not been as thoroughly entered into the historical record as Perry's imperial moves. I sometimes interject at this point, writing "anachronism" on the board, and asking if anyone knows its meaning (all the while joking about my proclivity toward "big words," having used "ubiquitous" earlier, and taking a jab at standardized examination vocabulary reviews). Some students confuse it with "acronym," but eventually we get to the point where they seem able to grasp how the present can shade the ways in which we look at the past (I also introduce them to "hyperbole," briefly, as the second cardinal sin of historians). A few students pick up on anachronisms right away, citing their field observations and noting how a lesson that begins with present-day examples to motivate learning can become anachronistic. I relate a story of the classroom bookbag dispute and the decision to use the atom bomb, and all of us laugh and many remember a similar "motivation" from our own experiences.

So, we are then faced with the question, "What is this Japan lesson about?" Is it about process or content? Many of us see the benefits of learning to work with documents and deliberating over our decisions, especially in light of the new state standards that require students to master Japanese-type required student exams. But others are more concerned with what "really happened." Given the case of this lesson (which is admittedly a bit hyperbolic!) the answers seem difficult, but my point here is that these are the kinds of questions we ought to take into consideration when designing a teaching and learning activity for student teachers. What is the relationship between process and content? Why use a process lesson to deliberate a moral question ("Should Japan have . . . ") or practice our civic duties ("Let's take a vote . . . "), instead of using a current event, the logical culmination of which could be to then act in some way. Or, is it best, for training purposes, to use the past with its foregone conclusions to understand a method of inquiry? Sure, the past is subject to interpretation in the present, but this lesson doesn't draw any attention to those kinds of issues. The teacher never asked questions about the questions he was posing. And, by using the first person plural, saying, "What should we do?" (i.e., the Japanese shoguns or emperor, or whoever was in charge then—he never mentioned), the present "we" of those in the class at that time deliberating past imperial questions becomes lost, invisible, unimportant. In other words, the lesson is that "we" and "they" are none other than one and the same, across cultures and over time. At this point, I am usually stomping about, ranting and jumping back and forth about how

absurd it is to imagine that a sixteen-year-old high school student in 1990s Queens could begin to think and deliberate in the way a nineteenth-century Shogun may have, or even Commodore Perry, for that matter.

In light of this, students in secondary social studies classrooms learn a standardized lesson about civics: all problems are individual problems. This is evident in the pervasive metaphorical and analogical linkages between major world events and individual behavior. In a behaviorist teaching style still largely advocated by educational officialdom, teachers begin lessons with a short "motivation." Conventional wisdom holds that this activity ought to relate the topic of the day to students' direct daily experiences. Thus, one finds classes about Truman's decision to use the atomic bomb "motivated" by examples of one student retaliating against another for a personal indiscretion, or lessons on the causes of the Civil War motivated by a discussion of a street fight, or the Treaty of Versailles with three cousins disagreeing on how to divide up an eight-slice pizza with two toppings. While such motivational practices are problematic in many ways, an emerging culture of hyper-reality only exacerbates the inherent individualism in much of social studies education. Educational technocrats, in their discussions of cyber-utopias and hyper-info highways, often evoke the Internet and World Wide Web, but the image of gleeful students sitting in front of their computer screens solving world problems in electronic simulations or surfing the Web in pursuit of liberatory information, seems incompatible with the concept of civics as a collective and negotiated responsibility, based on social participation and political action. In order to reverse the damages already done by individualism, civics in an age of hyper-reality will have to find new ways to emphasize collectivities and social participation, and the past is not the best means to do this.

Current practice in high school social studies classrooms dictates a practice know as "the motivation." Enshrined in lesson plan formats, and reified from concept to object, "the motivation," at bottom, impairs thought. Drawing upon my work with student teachers in New York City public high schools, I have come to realize how this practice severely circumscribes thought. Though not legally binding on teachers, the behavioral lesson plan format has a remarkable number of adherents. "The motivation" (along with the "do now," to which I turn in a moment) is an essential component of the standard daily lesson plan, and it is usually a short activity designed to motivate students for the day's lesson. As a concept, motivating students makes sense; it's an activity, a suggestion for action; it's embedded in daily practice. But this is different from "the motivation," solidified into a noun, an object. Similar forms of reification are evident when a teacher begins a lesson by saying, "OK class, please *do the do now* that is written on the chalkboard" (I always laugh when I hear this, as if the "do

now" is some sort of new dance). These only indicate further that "master teacher" practices can impair thought and grossly simplify or distort complex events. Here are some tragic examples I've encountered: the slaves should have fought back (teen machismo); the Jews deserved the ovens, because they passively walked right in; Palestinians lost their land, and finders are keepers (schoolyard law). This is thought impairment, since it reduces complex and often horrific mega-events to simple instances of interpersonal relations. In such a world, the decision to drop the atomic bomb can be "motivated" by a simplistic "get even" example, like "How would you feel if someone crumpled up your homework?" And no one ever bats an eye. In a world driven by what we can call "content jamming," where student receptacles need to be filled with facts to spew forth on standardized tests, one wonders what is really being learned.

Standards of Complexity: Recovering Meaning in Education

Most peoples of the world have traditions and beliefs that emphasize the interconnectedness of all life and land and the meaningfulness of all thought and action within a complex interwoven ecology. Indigenous peoples, such as the Australian Aborigines, view every tree, insect, plant, animal, and stone as meaningful and interrelated. They believe that pulling apart this web of creation will have severe consequences, and cite the growing environmental crisis as evidence. In the Islamic tradition, the Qur'an emphasizes that all creation—past, present, and future—is meaningful and purposeful. Muslims know this as part of a belief in *tawhid*—the transcendent Oneness of Allah resulting in the ecological unity of everything other-than-Allah. Rejecting these sorts of broad ecological beliefs leads unavoidably to a rejection of most moral and ethical imperatives. Rejection can also lead to spiritual emptiness and a world devoid of meaning. Islamic scholar and translator of the Qur'an, Muhammad Asad (n. d.), suggests in his commentary on the Qur'anic verse, "We have not created heaven and earth and all that is between them without meaning and purpose" (Surah 38, Ayah 27); that "everything in the universe—whether existent or potential, concrete or abstract—is meaningful; and nothing is accidental." Or, as the Australian Aborigines prefer to describe it, "Nothing is nothing" (as cited in George, 1992, p. 20).

Western civilization has gone far astray of this timeless imperative. In its place is a belief that the world consists of infinitely separable and isolatable objects with little or no meaningful connections between them. The social corollary of this belief is rampant individualism, compartmentalization of thought, work, and knowledge, and the proverbial mind/body split. In education, this belief affects the way we teach. The growing numbers of what we might call "holistic educators" are convinced that educa-

tion in the United States has gone hopelessly astray from all natural and historical norms of meaning. They are not alone, as many mainstream educators in the West have begun to come to the same conclusions. Most agree that what is needed is to recover a worldview that emphasizes meaning, purpose, and interconnectedness of all life, land, and human experiences.

The holistic education movement in the United States envisions a radical paradigm shift in the fundamentals of education. Holistic educators seek to

> apply the holistic cultural analysis to problems of contemporary education. If this analysis is correct, then surely the educational reform movements of the past few years are woefully shortsighted and inadequate. Our nation is not "at risk" because the schools are failing; schools are failing because our nation, and our culture, have entered a period of serious decline. If the holistic analysis is correct, then educating our youth for the sake of national economic superiority is a profoundly self-destructive mistake! To put it bluntly, educating our youth with the assumptions and methods of the industrial age is, at this crucial point in history, dangerously obsolete. (Miller, 1992, p. 6)

Holistic and indigenous educators are also asking basic questions about education, centering around three foundational questions: (1) Who are we? (2) What is knowledge? (3) How do we learn? Ontology, epistemology, methodology: Western educational systems generally answer such questions by saying that human nature is essentially evil and needs to be controlled, that the purpose of knowledge is to provide for economic and military expediency, and that schools are places where these two beliefs are put into practice. But looking within various cultural and religious traditions around the planet, one could very easily come up with answers to these questions that offer alternatives to the outmoded Western answers. For example, in the Islamic tradition the question of epistemology can be answered in the following saying of the Prophet Muhammad, upon whom be peace:

> The messenger of Allah once entered a mosque where there was a group of people sitting around a man. "What is this?" inquired the Prophet. He was told, "He is a very learned man." "What is a very learned man?" asked the Prophet. They told him, "He is the most learned of people regarding Arab genealogies and their past episodes, the days of the pre-Islamic times, and Arabic poetry." The Prophet said, "That is the ignorance of which is no harm and the knowing of which is no benefit." Then the Prophet, may Allah's benedictions be upon him, declared, "Knowledge consists of these three: the firm sign, or the just duty, or the established praxis. All else is superfluous." (adapted from a citation in al-Khumayni, 1991, p. 37)

Muslim scholars have worked with teachings like this, and such ideas have

guided Islamic education for generations. Like many spiritual traditions, the Islamic teachings encourage deep reflection on fundamental issues, always in a quest for meaning.

With these points in mind, I want to conclude with some reflections on my own teaching experiences in New York City, which have grown out of a series of notes to myself, related to teaching social studies. I also generated a version of this list with a group of Muslim teachers I worked with in Palestine, who were preparing to teach in a new school for children of repatriate families, so some of the reflections are geared toward them as well. The way these comments are organized is loosely based on *The Gutenberg Galaxy*, in which Marshall McLuhan "develops a mosaic or field approach to its problems," a method he chooses over presenting a series of fixed relationships. This "galaxy or constellation of events . . . is itself a mosaic of perpetually interacting forms that have undergone kaleidoscopic transformation" (1962). I hope that these can inspire some further discussions on understanding and responding to the mechanistic encroachments of standardization.

Some parts of the following constellation suggest ways to think and act about education with an eye toward beginning to reintegrate holistic methodologies. Besides different forms of indigenous knowledge, as noted above, I have also drawn many ideas from Gatto (1992), Loewen (1995), Kozol (1991), Churchill (1982), and DeLoria (1982), by negating some of the pathologies they eloquently describe. While compiling and commenting upon these steps, as we might call them, I relate many to one or another of the standard problems in Western, and in particular, American education. So in addition to drawing upon my own teaching experiences, I have discussed these ideas in numerous cross-cultural and intercultural conversations with concerned colleagues. The parts of the mosaic are not in any particular order and should not be viewed as a linear progression toward some final goal or outcome. Rather, they can be seen in many ways and in various combinations. Nor is the mosaic complete. But I hope that teachers who read this will feel free to use any facets, add others, or modify them according to individual needs.

Meet with students in circles as often as possible. This facilitates open discussion and group involvement, especially when the teacher sits in the circle with the students, with everyone face to face with everyone else. Circles eliminate the problem of some students sitting in front ("smart kids" and/or "teacher's pets") and others in the back ("dumb kids" and/or "trouble makers"). With mature students, teachers can use the "rotating chair" system of class discussion, in which class discussions are conducted in a democratic manner and the last speaker calls on the next in turn, including the teacher. Many books on discipline now recommend forming circles to discuss disciplinary problems, but it is also quite effective as a

daily routine. Most of the high school students I work with say they rarely meet in circles, and for the ones that do, the teacher remains in the middle, thus missing the full benefit of circles.

Bring outside guests into the classroom and organize class trips. Guests and trips should be scheduled as often as possible, and should not be limited to academics or academic institutions. Students can be encouraged to meet and interact with people of various ages, social classes, and professions. Least effective are guests who are just like the teacher—university educated, middle class, and so on. Nor should this be colonized by business interests obsessed with acclimating students to an outmoded climate of corporate 8–5 time management. Bring in farmers and laborers, or weavers and other artisans; sponsor visits to farms, workshops, collectives, and cooperative societies. Diversity in these experiences will encourage students to respect people outside of the prevailing Western model of the successful technocrat. This may even help break down the rigid class structure of Western education, in which the only role models are people with money or who have been validated by official academic and business institutions.

Encourage older students to teach younger students. This is always empowering and helps older students feel confident of their abilities and also to enjoy the rewards of teaching. Younger students will grow up having consistent contact with older students, as things are in life. This helps break down the rigid age segregation of most Western schooling, now recognized by many concerned educators and parents the world over as a recent and destructive, mechanistic aberration in human history. Life is simply not as segregated and rationally stratified as such schooling implies. In most of the rest of the "real world," people of all ages mix in families, communities, towns, and villages. It makes no sense to force children to spend twelve or more years confined with other children of exactly the same age.

Insist on frequent faculty meetings. This helps teachers to communicate with each other about students and classes, while also encouraging shared experiences, and providing a regular opportunity to arrange joint activities and parallel lessons. Search together for every opportunity to relate one class to another, both within and across disciplines, and utilize those opportunities daily. This takes a bit more time than minding your own business, but the rewards are well worth it. Some schools, in conjunction with teacher unions where possible, are restructuring the school day to build in more time for collegial communication. Students will often see more coherence in their education if they can move from one subject to the next with even the smallest semblance of continuity and interconnection.

Implement a concept-based integrated curriculum. This type of curriculum works best with long-term planning.

In the early grades, students are introduced to concepts such as justice, technology, equality, power, language, politics; teachers can make their own list collectively with other teachers, as well as with administrators and parents, which can reflect the concepts that will be meaningful in particular cultural contexts. Early on, concepts can be introduced in isolation and with simple definitions and concrete examples. They can even be introduced as part of the regular "daily lesson," or draw on life experiences. As students progress, concepts are repeated and reintegrated in a spiraling structure, with ever more sophisticated applications. In more advanced classes, students will have the tools to understand how one concept relates to another, as in, for example, how justice relates to equality, or science to technology, or the individual to society, or how power informs language and politics. An integrated and spiraling curriculum has the benefit of introducing both individual concepts and also showing how nothing happens in isolation, that everything is potentially interconnected and meaningful.

Teach students that all studies are social studies. It is a fallacy of the modern world to consider "society" as somehow separable from science, art, language, and politics. It even sounds trite to say that practically everything takes place in a social context, continuously informing and being informed by that context. But most people still have a hard time understanding, for example, that something like science is not neutral and value free, or that scientists are products of their societies, and social norms determine what is acceptable as good science as well as the kinds of questions scientists ask and are able to answer. Likewise, science informs society in many ways, useful as well as damaging. This also reminds students again of how things relate, helping them to recognize the social benefit and harm of various individual and collective human endeavors.

Encourage continuity and frequent completions. The structure of a typical school day allows for little sense of continuity and completion. Students often find themselves in the middle of a math lesson when the bell rings, telling them to drop math and pick up English. This kind of schooling was developed by the British in the nineteenth century, and it served two purposes: to control the masses of ordinary people (thus protecting the elite from rebellion) and to incorporate the colonies into the British Empire. Originally known as the "Lancaster system," or industrial schooling, it often still prevails today in the West and especially in its former or indirect colonies. The result is that, day in and day out, week after week, and month after month, teachers drill one simple, though perhaps unrecognized or even unintended lesson: nothing is worth finishing. This breeds, as Gatto (1992) puts it, "indifference." In a standards-driven setting, teachers need to be careful to design lesson plans that construct each day as a small completion, each week a larger completion,

and so on. Students need more than an occasional completion offered by midterms or unit quizzes. This can provide continuity and a sense of purposefulness on a daily basis.

Foster self-evaluation. Too many young people come out of school totally dependent on others. This is another unintended lesson that they acquire from us when we constantly dictate to them when to do this, when not to do that, when they are doing well, and when they are not. No wonder so many young Americans are emotional basket cases. Self-evaluation is a basic principle of just about every spiritual and indigenous tradition of the world, and neglecting this is one of the great tragedies of modernity. We need to encourage this as much as possible, as self-evaluation is an important step toward becoming a self-teacher. This is one of the most valuable gifts you can ever give to a student. You can also foster self-evaluation by encouraging critical thinking and writing, and by giving students opportunities for orations and debate. Let them grade themselves once in a while, and implement mastery learning or portfolios instead of standardized exams. We all too often underestimate students, and this is one of the most severe restrictions we place on them and on ourselves. Loewen (1995) describes one possible reason for this:

> Many adults fear children and worry that respect for authority is all that keeps them from running amok. So they teach them to respect authorities who adults themselves do not respect. . . . Some adults simply do not trust children to think. For several decades sociologists have documented America's distrust of the next generation. Parents may feel undermined when children get tools of information and inquiry not available to adults and use them in ways that seem to threaten adult-held values. (p. 289)

Students are often much smarter than many teachers and business leaders are ever able to see, and they often just need to be given the right opportunity to show how smart they really are.

Help students create their own knowledge. In American-style schooling, students are spoon-fed standardized and ready-made knowledge for upwards of twelve years, but rarely have the opportunity to create their own. But all knowledge comes from somewhere, and students can create their own in several ways. This helps fight intellectual dependency. An easy method is to have students keep a clippings file from several major newspapers and magazines. Clippings can be contextualized in whatever ways are meaningful for a given class, and this can be done rather easily by using a class-constructed Web site. This works equally well for science as well as history courses. Another way to create knowledge is to undertake an oral history project. Textbooks usually dwell on great people and major discoveries, but ignore the lives of ordinary people. Since most of the world consists

of ordinary people doing ordinary things, this amounts to an extreme bias in social studies textbooks, and by extension, the standardized exams based upon them. Although one would never know by observing secondary schooling, it seems obvious that ordinary people make history just as much as presidents and generals, sometimes more. Oral history projects can illustrate this by utilizing family members as well as community members. Students learn how to talk to people, ask questions, draw conclusions, and listen to various opinions. They learn the technical aspects of recording and transcribing interviews, and evaluating and presenting data. Completed projects can be entered into the school library or kept on Web sites for use by others. After a while, a school can build its own oral history archive, and generations of students will take pride in having produced their own knowledge. Video and Web-based projects can be integrated in this program, too. For the sciences, holistic teaching implies observational rather than experimental methods, and there are numerous possibilities for students to make their own knowledge by observing nature and ecological patterns.

Respect student privacy. Schools are not very private places, increasingly so with the Benthamesque calls coming out of corporate boardrooms for more "transparency" (though the boardroom doors still remain tightly locked). Like prisoners in oddly kindred institutions, students in most schools are constantly watched, by teachers and administrators, and also by each other, and sometimes by machines. At home, surveillance continues by way of homework and grade reports to parents, and extends by way of monitoring technology use. Breaks between classes, often timed to the second, provide no privacy. Cafeterias are noisy and busy. Even libraries offer little privacy. Students deprived of this essential human need will take it in their own ways. A privacy-deprived student will steal a few moments in the bathroom, or sneak a smoke outside, or pass a note to a classmate, or become defiant and confrontational toward teachers and other students. Be sympathetic to privacy needs and you will greatly reduce many disciplinary problems.

Show students that education is about more than just getting a job. Gatto (1992) sums this up nicely:

> For one hundred and fifty years institutional education has seen fit to offer as its main purpose the preparation for economic success. Good education = good job, good money, good things. This has become the universal educational banner, hoisted by the Harvards as well as the high schools. This prescription makes both parent and student easier to regulate and intimidate as long as the connection goes unchallenged either for its veracity or in its philosophical truth. . . . The absurdity of defining education as an economic good becomes clear if we ask ourselves what is gained by perceiving education

> as a way to enhance even further the runaway consumption that threatens the earth, the air, and the water of our planet? Should we continue to teach people that they can buy happiness in the face of a tidal wave of evidence that we cannot? Shall we ignore the evidence that drug addiction, alcoholism, teenage suicide, divorce, and other despairs are pathologies of the prosperous much more than they are of the poor? (p. 23)

In this regard, it is useful to keep in mind some oft-cited statistics. While the United States is one of the leaders of all industrialized states in terms of gross national product, the United Nations consistently reports it as a leader in murder, rape, violent crime, military expenditures, and incarceration (1 out of every 250 Americans is a convict, and Texas has a higher rate of incarceration than garrison states like Israel and South Africa during apartheid). Americans make up only 5 percent of the world population but consume one-third of all resources and produce half of all nonorganic garbage. Three percent of Americans control 90 percent of gross wealth; the top 20 percent of Americans earn 50 percent of all income, while the bottom 20 percent earn barely 5 percent. The leading causes of death for teenage American males are gunshot wounds and alcohol-related car accidents. Clearly something is amiss in the land of the free and the home of the brave. The blame for all this cannot be laid at the doorstep of schools or entertainment, as some high-profile corporate or conservative campaigns like people to believe. Indeed, education can play an important role in helping us to understand our predicaments and find ways out of this mess we're in, not help us to get deeper into it. Certainly education should not replicate these problems in emerging cultural contexts. Treating school as only a path to economic mobility misses the opportunity to make a real and lasting difference in the world.

Cover fewer topics in more depth. Much of what makes its way into standardized evaluation instruments is there for a political, patriotic, or economic reason. Corporations and politicians lobby hard for certain names and events to be included in textbooks, and editors routinely make decisions based on market concerns. Since the textbook industry is concerned with profit before education, books often end up catering to the needs of the wealthy and powerful, or they simply end up being bland and dull, catering to the whims of a reified imperial middle. One result of this is that textbooks and standards proclamations often include too much material. Students are subjected to a roller coaster ride, spanning centuries in history courses, with much content reduced to names and dates, and with jamming more content into students being the main task of teachers in standardized regimes. Likewise, science courses span the entire course of a field in a matter of weeks. It's simply too much. Students will benefit as human beings

more from some in-depth learning, though a holistic perspective suggests that the social science academic disciplines as presently configured may no longer be the best way to do this (Wallerstein, 1999). In any case, depth may help students to become better people, more than walking collections of facts and figures, or exemplars of ossified or irrelevant discourses. Teachers concerned about standardized tests generally solve that problem by getting old tests and using rote learning to jam the material into students throughout the year before the exams are to be taken. To most concerned educators, standardized tests are part of the problem. Even the "aptitude tests" and similar entrance exams are losing some ground, with more universities now preferring complete human beings with well-rounded educations, not just teenagers who can cough up facts on demand.

Explore controversies. Standardized learning largely ignores controversies. But human history is full of controversies, and students need to explore them. This prepares them to deal with future controversies, and encourages holistic thinking. Some important recent controversies center around the relationship between state power and science. Science in the twentieth century has been all but reduced to a function of the power system it serves. Scientists are wholly dependent on multimillion-dollar technologies, and these are paid for by private corporations and military governments with deeply vested interests, who increasingly determine the questions asked by scientists. Likewise, history is full of controversies. Social studies students need to explore issues such as the "discovery" of America by Columbus; the role of the United States as an aggressive, imperial power; and the fact that capitalism and communism are an ecologically destructive dyad. Ignoring such controversies can lead to passivity, rigidity, and dependency.

Incorporate community history into social studies. Most social studies curricula do this, when the books are used in the school they were intended for. Teachers who live in communities not covered by texts need to find ways to bring local history into the classroom. This is primarily for student enrichment, since standardized tests will ignore most communities and local histories, in favor of the triumphalist state mythologies. Nevertheless, community history is more important now than ever, especially since a single, global, spurious culture of mass entertainment, consumerism, and advertising is quickly replacing a myriad of vibrant, living, and more genuine local cultures.

Teach textbooks backwards. This works best for books that are not graded in difficulty, and in situations where they are mandated. It helps students to better see how the present is informed by the past (in the case of history) or how modern theories and techniques build on previous ones (as in the sciences). Both are necessary for meaningful holistic education.

Locate textbooks and standards as processes in context. All standards documents are written by someone, and people have different reasons for writing them. While this may seem trivial to an adult, things like standards and textbooks remain a mystery to students. They can benefit from considering where and why textbooks come into being. Loewen's (1995) suggestions are worth repeating here. He recommends, with your students, to apply and discuss a simple test to all textbooks: (1) Why was the book written? (2) Whose viewpoint does it represent? (3) Are the stories it tells believable? (4) Are the author's arguments backed up by other sources? (5) What feelings does the book evoke? We are cheating our students if we deprive them of basic epistemological and hermeneutic tools such as these. Nor should we fear putting such tools into the hands of our students, since doing so will probably do teachers as much good as it does students.

Allow multiple subjects as well as multiple objects into classrooms. Most American schooling applies the Western linear, compartmentalized worldview as if it were a human universal. But other peoples, cultures, traditions have their own ways of viewing the world, some cyclical and others circular. Since the Western worldview was imposed on most of the world through colonization and imperialism, it is sometimes hard to remember that it is only one in many possible ways to live. In science, we can introduce, for example, the complex understanding of Andean culture toward the environment (Apfel-Marglin, 1998), an understanding that does not depend on high-tech instruments and laboratories, but that is nevertheless reliable and accurate and completely valid in its cultural and ecological context. Similarly, Muslims have developed intimate sciences of the soul that are virtually unintelligible to both Judeo-Christian dogmatists and the materialist psychological disciplines of the West. Although one could cite many similar examples the world over, most of this is absent in modern education, for two main reasons. First, there is a general aversion to religious and spiritual traditions in American public institutions. Second, as Ward Churchill puts it, in the present colonial-derived educational system, the "facts of Native American and other non-European cultures must be warped or disregarded by virtue of the European tradition lacking the analytical tools through which to comprehend how such realities might exist at all" (1982, p. 54). The pathologies and inadequacies of Western civilization should not limit what we teach and what we learn with our students.

Encourage different kinds of experts as role models. A Muslim farmer who spends an entire lifetime growing, tending, and harvesting olives in Palestine, and who learned it from generations of his ancestors of olive farmers working their ancient and delicately balanced lands, is an example of an expert. But he has no degree, there is no academic discipline called "olivology," there are no how-to man-

uals in multiple and updated editions. Yet, the Palestinian Muslim olive farmer has an expertise in this area. Students need to know that expertise can be acquired and learned in places besides institutions and schools. A child who grows up surrounded only by academics with institutional and standardized values will learn only contempt or, at best, disregard for the farmer, artisan, and craftsperson. This is part of the destructive nature of Western civilization, and is the cause of much conflict. If one really looks at the situation in the world carefully, it is the Western trained "experts" that have gotten us into the present ecological mess. We can't blame the Muslim olive farmer; indeed, we can more than likely learn many things from such people.

Encourage honest interdisciplinary study. Interdisciplinarity means that there are many different ways to look at a phenomenon, problem, or event. The scientist will have one view, the poet another. All are equally valid human expressions, yet the scientific worldview prevails almost unquestioned today. Even though it was introduced as part of the Western colonial apparatus, most non-Westerners still place great value on Western science. But this science has been largely unable to solve most of the real problems of the world, or even explain them fully. In fact, in the so-called "age of science and hi-tech" we have more war, more poverty, more disease, more starvation, more disparity of wealth than ever before in human history. And all of this cannot be simply blamed on overpopulation. Native American activist and scholar Vine DeLoria (as cited in Churchill, 1982, p. 54) offers one possible reason for the awful state of the modern world: "Searching for the ultimate physical substance that constituted the world, Western peoples produced an incredibly complex technology that could manipulate the physical universe in a variety of ways. But the result of this meant . . . the West created a spiritual vacuum, coming eventually to believe that only the physical was real." Giving prime position to Western "how-to" science in our schools is part of this problem. We do not need to necessarily discredit science, only to locate its role in figuring out how the world works. Science (which asks mostly "how" questions) should be given no more than equal time and respect, alongside religion and human endeavors such as poetry, art, and literature (which tend to ask "why" questions). It is also important to broaden the definition of interdisciplinary study beyond the current sense of it as only a collaboration among rigidly defined academic disciplines. True interdisciplinary study will likely end up reconfiguring academic disciplines into new and evolving ways of knowing.

Make use of mavericks in the Western tradition. A maverick is someone who is trained in a particular discipline or school of thought but who comes to valid conclusions that differ significantly from the prevailing paradigms. Sometimes, mavericks end up discov-

ering something that, although no one believed it at the time, turns out to be valid later. In the field of American history, for example, Howard Zinn is an important maverick. In his classic *A People's History of the United States* (1995), he chose to view history from the perspective of ordinary folks, women, workers, and others whose lives run counter to the prevailing model of history as seen from the perspective of rulers, presidents, and generals. Other Western mavericks include the biblical scholar and geologist Immanuel Velikovsky, the linguist Noam Chomsky, the mathematician Joseph Weizenbaum, the biochemist Linus Pauling, the mythologist Joseph Campbell, and the physicians Hulda Clark and Nancy Olivieri. Sometimes, mavericks dissent from their fields of expertise and use their knowledge to warn others of its dangers. Advertising executive Jerry Mander left that industry and wrote very important works informing the public about the insidious hidden dangers of advertising and television. Outside the Western tradition, one also finds numerous important mavericks. For example, in the Islamic tradition, contemporary scholars and activists like Sayyid Qutb and Imam Khumayni both fought against the ossified religious customs of their societies; both stood up against scholars from their respective schools of thought who sat in the courts of kings and dictators, writing decrees to protect their interests; and both rose to meet the challenges of the modern world while remaining true to their Islamic traditions. Religion, history, and science are full of mavericks, but standardized curricula and examinations usually ignore them and often demonize them. Our students can learn so much from these kinds of individuals and every opportunity should be made to incorporate their lives and work.

Practice critical thinking. This has been touched upon in the above steps, but needs repetition here. Many young people come out of schools completely passive and uncritical, or, conversely, critical of everything to the point of being cynical. Concerned observers note that this is especially prevalent in the West, where school is largely seen as a way to keep people passive and dependent on officially sanctioned "experts," or where facile lesson plans capitalize on faddish and mindless bantering in the guise of critical thinking. One result is that democracy has been reduced to little more than a sound-bitten popularity contest. Ironically, people who live in places that do not profess democracy are often more meaningfully critical than those living in the democracies. This situation has great potential for cross-cultural education, and can deepen the recent calls to implement ever more critical thinking.

Learn from stupidity and mistakes. State standards rarely emphasize stupidity and mistakes as heuristic devices. They never tell us, for example, that science is riddled with mistakes, and that the scientific method actually depends in part on acknowledging and

correcting its own errors and mistakes. Why do we not emphasize this to our students? Likewise, history is full of political and economic blunders, great and small. Consumer culture is stupid and ecologically destructive, but because we don't like to call people stupid, we ignore it as a learning tool. There are all-important lessons for us and for our students if we admit stupidity and mistakes.

Reflect often on the purpose of education. Most people never think about why we confine children to twelve or more years of schooling. What purpose does it serve? Different cultures may have different uses for education, but if this is not reflected upon, then certain hidden purposes for education will likely prevail. Thomas Jefferson, for example, saw three clear purposes for education: (1) Separate the "geniuses" from the "rubbish" of the children of white families; (2) "civilize" Native Americans and incorporate them into white society; and (3) equip "Negroes" with basic manual skills before deporting them as far as possible from white society. In short, Jefferson and the other founding fathers of America intended to use education to bolster the privilege of the white ruling class he belonged to, subordinate or control other classes, and destroy or deport people whose culture differed from white norms. To concerned observers like Kozol, who toured American schools in the late 1980s and early 1990s and was horrified with what he saw, this system of education still generally prevails more than 200 years after Jefferson suggested it. In short, the schemes of others become the purposes of education if we do not make these decisions for ourselves.

Make schools safe and happy places. Many children despise school. No doubt this is due in part to the problems outlined in the above paragraphs. But another contributing factor is the dismal facilities that we often pass off as schools. When Kozol quizzed children in poor schools in American inner-city districts, one of the most important things they longed for was a clean, bright school. Many children felt embarrassed inviting him into their schools, and some were even made ill by the near-toxic conditions. The environment in which we teach and learn can have a very great effect on the overall education of children. A healthy environment includes clean facilities, especially fresh air and water, plants and trees, places for privacy, and other factors. Use your imagination and trust your children to determine what makes a happy place. At the same time, try always to encourage an atmosphere that reflects genuine culture, not the spurious culture of advertising and consumption. The latter has no place in schools, despite the various bargains corporations use to entice local school boards.

Cultivate optimism. When considering some of the awful things outlined in this essay, all the problems with

schools, the conspiracies, the injustices, the failures, the pathologies, one can become cynical. Sadly, this is the reality. But we need not despair. In fact, despair is a sure way to perpetuate the system that causes most of the problems. If cynicism is passive skepticism, then we need to cultivate active skeptics through critical study and cultivate optimism through holistic study. Many observers believe that, if left to continue on its present course, Western civilization will collapse. It cannot sustain itself much longer, since it is based at bottom on injustice, greed, and ecological insanity. The eventual disappearance of this oppressive system should be a cause of great optimism for most people worldwide. Looking at things in this way leads us to ask very important questions, such as: What do we do when the system is gone? What kind of society do we want to live in? Why do civilizations collapse? The Qur'an, for example, asks people to derive lessons from the disappearance of previous oppressive civilizations, from the Pharaohs to the Romans. More recently, the Soviet Union melted away into obscurity before our very eyes. There is no reason to believe that the American-led Western civilization is any more permanent. With this as an optimistic view, education can help us to get a jump on the necessary work of building just, peaceful, and ecologically sustainable societies. In light of such a wondrous prospectus, the standardization movement becomes an insignificant artifact.

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SOCIAL EDUCATION AND STANDARDS-BASED REFORM

A Critique

Kevin D. Vinson, E. Wayne Ross

Increasingly states, school districts, and professional associations are turning to standards-based reform as *the* means by which to "improve" social studies education. Although this movement has gained a good deal of ground, it is not unproblematic, and represents a number of dangers relative to the historical and contemporary commitments of the profession. In this chapter we intend to explore both the contemporary state of social education and standards-based reform and to offer insights into several key critical considerations.

Settings

Most directly, we pose the following principal questions:

- How might social educators create the (potential) conditions for an *authentic* critique of standards-based reform?
- Upon and within what contexts, considerations, and perspectives *might* an authentic critical foundation of standards-based reform be constructed?
- How can the field of social studies make possible such an authentic critique?
- What are the plausible practice consequences of this critique, especially vis-à-vis classroom practice, social studies policy making, theory, research, and so on?

Moreover, we seek by way of these questions to encourage a reconsideration of a perhaps even more fundamental set of "foundational" concerns, those at the heart of contemporary social studies education. These include:

- What are social studies?
- What should be the purpose(s) of social studies education?
- How is or should content be

selected with respect to social studies education? By whom? Based on what criteria?
- How should social studies teaching methods and strategies be chosen?
- How should teaching and learning in social education be assessed or evaluated?
- What is effective citizenship/citizenship education and what should be its role in terms of the contemporary social studies?

Against these broadly construed questions the goals of this chapter are to:

- Interrogate and de/reconstruct the contexts and conditions within which standards-based reforms are produced and according to which they must be understood and interpreted in terms of social education
- (Re)consider standards-based reform as a possible setting for the creation of classroom practice (and vice versa)
- "Problematize" pedagogical standards. That is, open them to challenge, or place them "on the table" (as against taking them for granted as givens and thus inherently productive
- Advance the relevant conversations—especially given potentially incommensurable viewpoints, consequences, and statuses

Overall, the purpose here is to present an initial, tentative, and evolving framework—including questions, elements, perspectives, and characteristics—according to which social studies policy makers, practitioners, and scholars might engage the creation, implementation, evaluation, and revision of educational standards and standards-based reforms.

Several general assumptions frame this effort. First, that nationwide educational standards increasingly represent the current reform reality. Second, that the field of social studies education is complex, diverse, dynamic, and multiple—characterized by several "competing paradigms." Third, that both historically and at present, social studies (as a field) has defined and continues to define itself according to its "special" and "unique" responsibility for educating effective citizens and according to its commitment(s) to democracy, justice, equality, freedom, progress, and diversity. And fourth, that as a field, social studies can be characterized by a certain uncertainty in terms of the meaning(s) and specifics of its purpose(s), content(s), and method(s), as well as its underlying engagements (e.g., citizenship, democracy, justice, equality, freedom, progress, diversity, and so on).

Starting Points

Two relevant observations provide perhaps a reasonable starting point for any inquiry into standards-based reform and social studies education: (1) the contemporary prostandards "con-

sensus" and (2) preliminary empirical evidence suggesting a diversity of perspectives among social studies practitioners.

Regarding social studies education, there indeed is an across-the-board pronational standards consensus: a liberal-conservative alliance (in contemporary terminology) in support of standards-based reform. This may be evidenced by the recent proliferation of social studies standards-based documents (see, e.g., Center for Civic Education, 1994; Geography Education Standards Project, 1994; National Center for History in the Schools [NCHS], 1994a, 1994b; National Council for the Social Studies [NCSS] Curriculum Standards Task Force, 1994; National Council on Economic Education, 1997). This may or may not be surprising, even though standards-based reform has been (arguably) rather more problematic and controversial in social studies than in other school subject areas such as "math education" (see National Council of Teachers of Mathematics, 1989, 1991). Historically, however, the relevant contexts are somewhat complex and certainly confusing. For example, "liberals" have seen national and, to a lesser extent, state (i.e., government-supported) schooling efforts as one way of ensuring and expanding concepts such as civil rights, democracy, freedom, and social justice. And yet, they have resisted national/governmental efforts to regulate/control "social" or "cultural" behavior, often claiming this is an "invasion of privacy" (e.g., abortion, flag burning, and so forth). "Conservatives," on the other hand, have resisted national and state efforts to "intrude" on the sanctity of the principle of "local control of schooling" (e.g., curriculum and spending) and to regulate corporations and corporate (and other) economic behavior. Yet they have supported national/governmental efforts to mandate social/cultural behavior (e.g., school prayer, same-sex marriage, abortion). This leaves a somewhat difficult environment within which to understand various perspectives on pedagogical standards for the social studies. Here, that is, both liberals and conservatives support the pro-standards movement. But why? For liberals, such standards represent an effort to promote and strengthen diversity, multiculturalism, and teacher professionalism, while for conservatives they represent an attempt to "improve" the culture, provide the "same" (quality) education for everyone, and enhance the success of U.S. (corporate) global, political, and (especially) economic competition. Although Apple (1996) has described a similar, "neo-liberal/neo-conservative" alliance (and granting that his use of terminology was in a sense more historically precise), he meant only an alliance of different groups of *conservatives* (again, in today's terminology *neo-liberals*—economic conservatives—and *neo-conservatives*—social/cultural conservatives) (see also Vinson, 1999).

In sum, the consensus or alliance position suggests that overall social

studies standards are a necessary component of school reform, and that to be effective or meaningful, schools', teachers', and students' success or failure in meeting them must be measured/measurable "objectively."

More specifically, liberal standards proponents accept that:

- They can (and will) ensure or protect diversity and difference
- They can (and should) exist without "standardization"
- They should provide a "thematic framework" as opposed to a set of specific pieces of information
- They should (and can) be consistent with a certain vision of effective pedagogy (e.g., hands-on learning, authentic instruction and assessment, cooperative learning, and so forth)
- Educators *must* work to develop such standards—if and because they are "inevitable," it should be educators and not politicians and/or corporate leaders who create and actualize them (see, e.g., Nash, Crabtree, & Dunn, 1997; NCHS, 1994a, 1994b; NCSS Curriculum Standards Task Force, 1994)

Conservatives accept that:

- Standards can improve achievement by clearly defining what is to be taught and what kind of performance is expected
- Standards . . . are necessary for equality of opportunity
- National standards provide a valuable coordinating function [by providing coherence among several aspects of teaching and learning]
- There is no reason to have different standards in different states . . . when well-developed international standards have already been developed [especially in math and science]
- Standards and assessments provide consumer protection by supplying accurate information to students and parents; standards and assessments serve as an important signaling device to students, parents, teachers, employers, and colleges (Ravitch, 1995, pp. 25–27; see also Hirsch, 1987, 1996)

In sum, the consensus suggests:

- Standards are necessary for productive school reform
- Today's students do not "know enough" (however defined)
- Curriculum and assessment standards can lead to higher achievement
- National standards are crucial vis-à-vis global competition
- There should be federal leadership yet local control
- Standards promote equality of opportunity (see Vinson, 1999)

But there has been at least *some* criticism of the existing framework (notably from the more radical left wing [e.g., Vinson, Gibson, & Ross, in press] *and* the more reactionary right

wing [e.g., Finn & Petrilli, 2000]). (In fact, it is this very condition—this milieu of prostandards-based reform accord—that makes *necessary* and *demands* a forceful critique; that is, given the widespread and powerful level of advocacy—and considering its potential significance and impact—the contexts, viewpoints, and policy recommendations of standards-based frameworks and their developers cannot be taken lightly or simply and unquestionably accepted—they must not be given a free ride, and must stand up to question, challenge, and interrogation; at least and if nothing else, we must be skeptical, in the best scientific sense, and cautious. Ravitch (1995), a pedagogically conservative supporter of national standards sums up these criticisms as:

- National standards will be minimal—reduced to the lowest common denominator, especially if federal (i.e., minimum/functional competencies)
- The government might impose controversial values and opinions
- National standards based on traditional subject matter disciplines . . . will narrow the curriculum
- National testing will harm children and will distort priorities in the classroom
- National standards and national tests will do nothing to help poor inner-city schools
- National standards and assessments will not expand equality of opportunity
- National standards and assessments will not improve achievement because most teachers will ignore them and do what they have always done
- The failure of national standards and testing will undermine faith in public education and pave the way for privatization of education
- National standards and assessments will accomplish little by themselves (pp. 18–25).

Gittell (1998), a pedagogically liberal, cautious supporter of national standards, summarizes this criticism as coming from people who:

- Honor and cherish the tradition of local control of education, particularly at the school district level
- Give priority to equity and equitable financing of education
- Focus on the role of the states
- See American federalism as the most effective means of retaining a decentralized and democratic political system
- Value and encourage diversity in all aspects of American society
- Question the value of the extensive testing in American schools
- Lead [local] school reform efforts
- Do not think that foreign school systems are exemplary models of education
- Worked on the national history curriculum or the New York social studies proposal, and have faced the wrath of colleagues

> who disagree with their suggested standards (pp. 143–144).

In sum, in dealing with extant criticism the consensus position accepts that (1) it indeed ranges from the radical left to the reactionary right (covers the entire politico-pedagogical spectrum); (2) it is at least somewhat legitimate and thus deserves to be taken at least somewhat seriously (in part because many contemporary liberals are sympathetic to elements of the rightist critique while many contemporary conservatives are sympathetic to elements of the leftist critique); and (3) it can be addressed adequately within the consensus framework—there is here no willingness to reconsider the essential "correctness" of the prostandards position(s).

A second starting point is that there is at least some preliminary evidence that social studies teachers (1) advocate and assume a range of diverse pedagogical orientations (or "approaches to teaching") and (2) may in fact be more "liberal" than is generally assumed (see Anderson, Avery, Pederson, Smith, & Sullivan, 1997; Vinson, 1998). Although the implications of these findings remain somewhat speculative, they do beg the question of how and to what extent they might be (in)compatible with present programs of standards-based reform.

Definitions

In effect, *standards-based reform* represents an effort on the part of some official body, such as a governmental agency (e.g., the U.S. Department of Education) or a professional education organization (e.g., the NCSS) to define and establish a holistic system of pedagogical purpose or mission (e.g., the first President Bush's Goals 2000), content selection (e.g., curriculum standards), teaching methodology (e.g., the promotion of phonics), and/or testing/assessment/evaluation (i.e., "accountability") such that: (1) the various components of classroom practice are interrelated and mutually reinforcing to the extent that they each converge or coalesce around the others (often around the centrality of testing/assessment/evaluation) and (2) achievement/performance relative to the testing/assessment/evaluation component serves as the indicator of success or failure.

Authentic critique (with respect specifically to national standards and standards-based reform, and the mode of critique we seek in this work) implies an interrogation of standards and standards frameworks that include not only challenging specifically included topics, ideas, facts, or procedures, and so on, but also the very premise that standards/standards-based form itself—as a foundation for reform—is essentially or fundamentally right, necessary, relevant, and inevitable. It incorporates taking seriously the "real-life" contexts (social, political, economic, ideological, cultural, educational, and so forth) within which standards-based reform structures are produced, implemented, and maintained. It is opposed to what might be called "inauthentic" or "particular"

critique, which accepts the overall imperative of standards/standards-based reform but challenges the inclusion of some specific element, component, or aspect (in terms of purpose, content, and/or method. An example of "particular" or "inauthentic" critique might be the relatively recent debate over national history standards. In general, both sides supported their establishment, although some wanted the content to be more "traditional," "patriotic," U.S./Eurocentric, and "positive," while some participants desired content that would be more "honest," "inclusive," "diverse," and "global." In the end, few involved actually challenged the perceived necessity itself of *having* history standards (or, that is, of "standardizing" history).

Components of the Critique

Oppression vs. Antioppression

A first concern emanates from the extent to which standards-based reform and high-stakes standardized testing promote a set of conditions that are at once unjust, unequal, and conforming. For by insisting that legitimate learning necessarily presents itself in and on the basis of test scores and prescribed content, such "reforms" refuse to admit and accept differences (individual as well as cultural) in knowledges, values, experiences, learning styles, economic resources, and access to those dominant academic artifacts that ultimately contribute to both the appearance of achievement *and* the status of cultural hegemony upon which standards-based reforms depend. In effect, standardization encourages a singular and homogeneous public schooling—one antithetical to such contemporary ideals as diversity, multiculturalism, difference, and liberation—vis-à-vis an underlying and insidious mechanism or technology of *oppression*, one in which the interests of society's most powerful (the *minority*) are privileged at the expense of those of the less powerful (the *majority*).

In *Pedagogy of the Oppressed*, radical Brazilian educator and activist Paulo Freire (1970) referred memorably to such standardization schemes as "banking" education. Here, schooling

> turns [students] into "containers," into "receptacles" to be "filled" by the teacher. . . . The more completely [the teacher] fills the receptacles, the better a teacher she [or he] is. The more meekly the receptacles permit themselves to be filled, the better students they are. . . . Education [thus] becomes an act of depositing, in which the students are the depositories and the teacher is the depositor . . . the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits. (p. 53)

Moreover, Freire (1970) identified such banking approaches with the *fundamental* conditions of oppression. As he wrote:

> One of the basic elements of the relationship between oppressor and oppressed is *prescription*. Every prescription represents the imposition of one

> individual's choice upon another, transforming the consciousness of the person prescribed into one that conforms with the prescriber's consciousness. Thus, the behavior of the oppressed is a prescribed behavior, following as it does the guidelines of the oppressor. (pp. 28–29)

Freire's (1970) critique applies neatly to the climate and functionality of current standardization-based pedagogies. With respect to banking, under such programs students and teachers are held "accountable" only to the extent that they conform to the dictates of high-stakes mandated tests, which, in turn, work to drive (if not outright determine) classroom behavior relative to aim or purpose, content, and teaching method (e.g., Hartocollis, 1999; Libit, 1999; Steinberg, 1999).

Even more clearly, perhaps, is the degree to which standards and standards-based reforms represent a case of prescription. In fact, such systems mirror Freire's (1970) insights almost to the letter. Within any complex of educational standards (including standardized tests), some individual or group's decisions are imposed externally on the actual classroom lives of teachers and students. Over time, the "consciousness of the person prescribed to" merges or "conforms with the prescriber's consciousness" such that "the behavior of the oppressed is a prescribed behavior" indeed. The prescriber(s) choose(s) for others, convince(s) them that the decision is consistent with the totality of all their interests, and then work(s) to ensure (here, via testing) the strict compliance of the prescribed to's behavior with the initial, test-regulated decision.

A more recent yet equally significant framework was established by Iris Marion Young (1992) in her work on "The Five Faces of Oppression." Within this view, oppression moves beyond its

> traditional [grounding] in the exercise of tyranny by a ruling group [so as to include also its] new left . . . designat[ion of] the disadvantage and injustice some people suffer not because a tyrannical power intends to keep them down, but because of the everyday practices of a well-intentioned liberal society. . . . [It] refers to systemic and structural phenomena that are not necessarily the result of the intentions of a tyrant [but are in fact] part of the basic fabric of a society, not a function of a few people's choices or policies. . . . Oppression refers to structural phenomena that immobilize or reduce a group. . . . To be in a . . . group is to share with others a way of life that defines a person's identity and by which other people identify him or her. (pp. 175–177)

For Young, oppression is more subtle yet actually no less dangerous than in the settings identified by Freire (1970). What is oppressive from this perspective are the everyday workings of "the system," the structure of public education itself, that which lies in the tendency of standards-based for-

mats to develop or evolve a life of their own. Once in place, that is, such an organized arrangement, well-intentioned though it might be, works automatically if not absolutely to control the lives of the oppressed (e.g., groups such as teachers, students, and classroom communities), a state of affairs that yields a marginalization effect, a condition of injustice and disadvantage.

Young (1992) identifies five "faces" or "types" of oppression, recognizing that "each presents its own unique mode or class of oppression whether in the presence or absence of the others" (Vinson, in press). Specifically, these types or faces include: (1) exploitation, (2) marginalization, (3) powerlessness, (4) cultural imperialism, and (5) violence. To the extent that standardization and standardized-testing schemes rely on the use of classroom labor to benefit the (external) powerful (i.e., working teachers and students so that they take the blame for "failure" and various educational "leaders" claim the praise for "success"), there is *exploitation*. To the extent that test scores privilege some at the expense of others (e.g., based on relationships of power, race, ethnicity, language, gender, class, and so on), there is *marginalization*. To the extent that a majority of teachers and students (not to mention parents) play little if any genuine role in making decisions that significantly affect their lives, there is (undemocratic) *powerlessness*. To the extent that standardization fixes knowledge, and represents the experience of dominant groups as "normal" and/or "true," there is *cultural imperialism*. And, lastly, to the extent that testing and its media portrayals result in the reduction of freedom, the expansion of conformity, and the "unprovoked" or unwarranted attack on, or humiliation of, some (less powerful) individuals and groups (e.g., teachers, students, parents, members of less wealthy communities) at the hands of other (more powerful) individuals and groups (e.g., politicians, corporations, the media), there is, in effect, a well-entrenched order of *violence*. All in all, whether from a Freirean or a Youngian perspective, standardization and standardized testing are oppressive, and so must at once and forcefully be challenged.

Antidemocracy vs. Democracy

An alternative yet critical perspective, albeit one inextricably associated with the pedagogical implications explored above, rests on a mode of interpretation constructed directly out of and upon Dewey's (1916/1966) famed delineation of democracy and of democratic education. From this viewpoint, high-stakes standardized testing represents not only an inadequate method of pedagogy per se, but also a threat to democratic society—a contradiction, an *un-* or *antidemocratic* means of preparing children for an engaged democratic social and political life.

In his monumental work *Democracy and Education: An Introduction to the Philosophy of Education*, Dewey (1916/

1966), in some of the best-known words in the entire history of Western educational philosophy, presented his construction of democracy. In pursuing "the democratic ideal," he wrote that:

> The two elements in our criterion both point to democracy. The first signifies not only more numerous and more varied points of shared common interest, but greater reliance upon the recognition of mutual interests as a factor in social control. The second means not only freer interaction between social groups (once isolated so far as intention could keep up a separation) but change in social habit—its continuous readjustment through meeting the new situations produced by varied intercourse. And these two traits are precisely what characterize the democratically constituted society. (pp. 86–87)

And, most critically (here, Dewey is worth quoting at length):

> Upon the educational side, we note first that the realization of a form of social life in which interests are mutually interpenetrating, and where progress, or readjustment, is an important consideration, makes a democratic community more interested than other communities have cause to be in deliberate and systematic education. The devotion of democracy to education is a familiar fact. The superficial explanation is that a government resting upon popular suffrage cannot be successful unless those who elect and who obey their governors are educated. Since a democratic society repudiates the principle of external authority, it must find a substitute in voluntary disposition and interest; these can be created only by education. But there is a deeper explanation. *A democracy is more than a form of government; it is primarily a mode of associated living, of conjoint communicated experience* [italics added]. The extension in space of the number of individuals who participate in an interest so that each has to refer his [or her] own action to that of others, and to consider the action of others to give point and direction to his [or her] own, is equivalent to the breaking down of those barriers of class, race, and national territory which kept men [*sic*] from perceiving the full import of their activity. These more numerous and more varied points of contact denote a greater diversity of stimuli to which an individual has to respond; they consequently *put a premium on variation in his [or her] action* [italics added]. They secure a liberation of powers which remain suppressed as long as incitations to action are partial, as they must be in a group which in its exclusiveness shuts out many interests. (p. 87)

With respect to standards-based reform, Dewey's understandings yield several critical insights. Whereas Dewey's democracy called for "more numerous and more varied points of shared common interest," mandated standardized testing in fact reduces and limits them, creating a system of "interests" organized around exclusion and not inclusion. Our potentially real, shared interests become ar-

tificial, determined by powerful and peripheral forces, with *their* interests established as "our" interests. What counts as shared and mutual extends no farther than that which is consistent with, or deemed proper within the context of, the normalized and dominant content.

Further, educational standardization contradicts the democratic ideals of "freer interaction" and "varied intercourse." Standards-based reform confines legitimate "interaction" to test-driven teaching and learning. It reduces meaningful "intercourse" to that which is officially and formally sanctioned.

Lastly, standardization directly challenges the principles of "greater diversity of stimuli" and "variation in action." Such dynamism and difference are destroyed as teachers are forced to follow scripts and teach to the test, and as students acquire the notion that learning means nothing more than achieving "desirable" scores. In effect, the stimuli are identical, and the actions strikingly the same. For in effect, the conditions and characteristics of standardization contradict those of democracy, leaving instead—in democracy's wake—an institutionalized mechanism of authoritarian—externally produced—social and intellectual conformity, a regime of "top-down" pedagogical control. They ignore or dismiss, moreover, the imperatives of such critical and limiting factors as time, money, and class size, promoting in the end a privileged individualism over a commitment to collectivity, community, and care.

Antidisciplinarity vs. Disciplinarity

A third element or component of any critique of social studies standards-based reform involves the degree to which such movements actualize what Foucault (1975/1979, 1980) called "disciplinary power" and "regimes of truth." Fundamentally, disciplinary power is a mode of control that results in the production of "politically docile" (less visible) and "economically useful" (more visible) bodies. It does so, in effect, by creating four types of individuality or, that is, an individuality constructed out of four characteristics, namely the "cellular," the "organic," the "genetic," and the "combinatory." Like other forms of power, it imposes constraints, prohibitions, and/or obligations. Yet it is distinguishable from other modes of power in its production of simultaneously obedient and useful bodies (i.e., it simultaneously works to increase the forces of the body as a positive [economic utility] and to decrease them as a negative [political docility]) and in its creation of bodies that are both subject and object. Its danger springs from its condition of relative invisibility, its automaticity, and its nature as hidden, ubiquitous, and insidious—its ostensible subtlety. Its workings involve most famously (among other conditions) "correct training," the elements of which are: (1) historical observation/hierarchical surveillance, (2) normalizing judgment, and (3) the examination.

Moreover, standards-based reform may be characterized as what Foucault

(e.g., 1980) called a "regime of truth" (with specific political and ethical elements, characterized in terms of a circular relation of power and knowledge). According to Foucault (1980), this organization and practice of disciplinary power—this "régime of truth"—is critical. He writes:

> The important thing here, I believe, is that truth isn't outside power, or lacking in power: contrary to a myth whose history and functions would repay further study, truth isn't the reward of free spirits, the child of protracted solitude, nor the privilege of those who have succeeded in liberating themselves. Truth is a thing of this world: it is produced only by virtue of multiple forms of constraint. And it induces regular effects of power. Each society has its régime of truth, its "general politics" of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true. (p. 131)

And: "'Truth' is linked in a circular relation with systems of power which produce and sustain it, and to effects of power which it induces and which extend it. A régime of truth" (Foucault, 1980, p. 133).

The elements of such a regime are both "political" and "ethical." The political or "interpersonal" components include:

1. The system of differentiations that characterize a given regime and that permit one to act upon the actions of others in terms both of values and of roles
2. The types of objectives pursued by those who act upon the actions of others—the functions and objectives of relations of power within a given regime
3. The means of bringing power relations into being—the specific techniques of practices that actualize the relations of power
4. Forms of institutionalization—the institutions that integrate these practices
5. The degree of rationalization/formation of knowledge that describes the reality of a given regime and raises problems immanent to that reality—a set of ideas adequate to the mechanisms of power (see Gore, 1993)

The ethical or "intrapersonal" elements include:

1. The regions of the body considered problematic—the gestures, postures, and attitudes that are in need of disciplining or styling (the ethical substance, the *substance éthique*)
2. The bodily activities disciplined or styled (*mode d' assujettissement*)
3. The specific techniques that are developed to achieve a particular self-styling (*form d'ascèse*)

4. The assigned goals of these ethical practices of the self-styling of the body (*telos*)

(For these ethical and political elements, see Feher, 1987; Foucault, 1983; Gore, 1993.)

In sum, social studies standards-based reform represents both "disciplinarity" and one or more regimes of truth. They seek to control and to limit by incorporating and legitimizing a certain power over knowledge—individually, socially, intellectually—(as both condition and effect of power), including here various mechanisms involving the state and corporate regulation of public school knowledge.

Image vs. Authenticity

In addition, standards-based reform works to privilege educational decision making founded on the establishment and maintenance of certain powerful and dominant images of schooling over the lived and authentic experiences of classroom life. Although there are indeed many "classical" lenses through which to view and consider the concept of image (e.g., Barthes, 1977; Boorstin, 1961; Bracken, 1997; Debord, 1967/1995, 1988/1990; Jappe, 1993/1999; McLuhan, 1964/1994; Vinson, 1999a), here we argue that such hallmarks of standardization as "mission statements," "content standards," "teacher deprofessionalism," and mandated, high-stakes testing schemes work against various classroom "realities" by focusing attention on such weak indicators of performance as test scores. Far too often policy is set based on perceptions of success or failure grounded in little more than numbers only marginally indicative of student learning and teacher "effectiveness." For while such mechanisms, coupled with systems of "accountability" may be relatively inexpensive and simple to implement, they say next to nothing about what goes on in schools, classrooms, and communities.

The Individual Good vs. the Common Good vs. the Collective Good

A final critical element represents the potential of standards-based reform to privilege the *individual* (or private or personal) and/or *common* good over the *collective* good (e.g., Vinson, 1999b). But, what is the "collective good"? How might it be distinguished from the "individual" good and the "common" good?

The *individual/private/personal good* is that which is perceived by any given individual to be in his or her own best interests—regardless of any consideration of anyone else or anyone else's best interests (e.g., Bill Gates' absurd accumulation of wealth). The *common good* is what is perceived by a majority of individuals to be in the best interests of a majority of individuals (regardless of any consideration of minorities or minorities' best interests) *or* what is perceived by a dominant, powerful minority of individuals to be in their best interests and therefore imposed on the subordinate majority

as in their best interests as well (e.g., "false consciousness," "what's good for General Motors is good for the country" [GM President Charles Wilson], and so on). The *collective good*, however, is an *ideal construct* grounded in what is authentically perceived by everyone to be in the best (authentic) interests of everyone. An *intentionally maximized* coalition of similar interests, it demands maximized democracy, maximized equity with respect to the distribution of power, maximized equality of opportunity, maximized commitment to diversity, and maximized conditions of social justice. (Note that our assumption is that the collective good is what social studies education in the United States should be about, and that additionally it should form the heart of school reform.)

Our ultimate argument is that standards-based reforms undermine the collective good. For while standardization may very well be consistent with a commitment to the individual/private/personal good and/or with a commitment to the common good, it is essentially *inconsistent with*, *incompatible with*, *and impossible within a commitment to the collective good.*

But how and why? Most importantly, the environment within which standards are/would be created—the context within which any standards-based reform would be produced and implemented—are/would be, to say the least, less than optimal, less than maximized with respect to democracy, the equitable distribution of power, equality of opportunity, a commitment to diversity, and the conditions of social justice. But secondly, standards *themselves* are not/will not/cannot be compatible with the conditions necessary for the collective good—again, maximized settings relative to democracy, the equitable distribution of power, equality of opportunity, a commitment to diversity, and the conditions of social justice. As indicated above, they are oppressive, antidemocratic, and disciplinary, and work to promote a specific set of dominant images of both schooling and social education/citizenship education over classroom and community authenticity.

Summary and Conclusions

In light of the current state of social education and standards-based reform, and in view of the proposed critical framework, what do we do?

First, social studies professionals must initiate and maintain a meaningful dialogue driven by the issues suggested by standards-based reform. They must consider fundamental questions such as: What is democracy? Empowerment? Effective citizenship (its various components or elements)? Equality? Social justice?

In light of these, the field further must ask:

- How might we interpret/understand the "fundamentals"? What should be the purpose of social studies education? How should social studies content be selected? How should teaching methods

be determined? How should social studies teaching and learning be assessed? How should these questions be answered? By whom? Who, if anyone, should have the power to answer these questions for others?

- How can we reorient social studies education in the direction of empowerment (i.e., helping students learn to function as effective citizens in a democracy) so that we might move toward a democratic education as well as a democratic society—one characterized by and dedicated to the principles of equality and social justice?
- What are or should be our roles as committed and professional social studies educators?
- What are pedagogical standards? What do we as social studies professionals *mean* by them? By what mechanisms do we intend teachers, students, and schools to *meet* them? Do we indeed intend this? How do we seek to ensure it? Are standards merely a statement of what we as educators believe in and agree with? If so, what if anything is gained by participating in the exercise? If not, then are they by definition "disciplinary"?
- Is there a difference between standards and standardization? Can there be?
- In favoring high standards, must one ipso facto support *standards?* Might one, that is, favor *high standards* yet oppose *standards?* By opposing *standards*, does one ipso facto oppose *high standards*? (That is, if one opposes, for example, national curriculum standards, does that mean that therefore [by definition] one favors *low* standards?)
- How do curriculum, instruction, and assessment standards work organically, holistically, or systematically with respect to conformity, control, coercion, restraint, and discipline—are standards and disciplinarity mutually productive/reproductive?
- What role is played by observation—the gaze—vis-à-vis standards and disciplinarity?
- To what extent do pedagogical standards in fact represent a régime of truth? What are the political and ethical components?
- What are the relationships between educational standards and such "guiding convictions" and pedagogical goals as democracy, democratic citizenship, diversity, freedom, equality, and justice? What insights might be gained from contemporary understandings such as those provided by feminist education, critical pedagogy, multicultural education, multiple intelligences, constructivism, and authentic instruction/assessment (among others)?
- To what extent do systems of educational standards promote an image of schooling at the expense of the realities of schooling (especially vis-à-vis

exchange/use value, alienation, isolation/fragmentation, passivity, the denial of history, the destruction of community, and so on)?
- What are the potential practical consequences of decisions about pedagogical standards (choosing or not choosing to design, create, and implement them)?

In terms of pedagogical policy and practice, social educators must consider specific actions. Among others, we must:

- Problematize the issue
- Explore our own commitments (e.g., democracy and diversity)
- Take public *and* private stances
- Consider the potential practical outcomes of policy decisions
- Work within *formal* channels (e.g., professional organizations, school boards, official meetings, colleges and universities)
- Work within *informal* channels (e.g., conversations with teachers, parents, administrators, and students; letters to editors; considering here that those who hold power often have automatic access to the media and public opinion)
- Strengthen our and our communities' theoretical groundings (through, for example, cultural studies, books, articles, conferences, and discussions, again considering access to public opinion) in order to discover what, for instance, causes two such disparate, well-known, best-selling, and respected educators as Alfie Kohn (e.g., 1999) and Theodore Sizer (e.g., 1996) to oppose national urriculum/assessment standards
- Build on the growing evidence of community/popular opposition to national standards/standards-based reform (e.g., Hoff, 1999; Ohanian, 1999; Ross, 1999)
- Emphasize cooperation, experience, diversity, difference, and interdisciplinarity
- Pursue community
- Pursue meaningful dialogue/discussion
- Pursue authenticity and holism (or connectedness)
- Challenge the totality of standards—not just particular segments
- Work against the concentration of power and its control over what counts as knowledge

Overall, and simply, we must challenge the standardization of social education and of citizenship, democracy, and public knowledge.

With respect to social studies theory and research, we must continue the as-yet nascent inquiry into the conditions, contexts, and consequences of standards-based reform. Advancing our understanding demands not only foundational work, but also increased empirical efforts grounded in both quantitative and qualitative studies.

In the end, social education must face up to the growing yet problematic movement toward standards-based reform and standardization.

The field—practitioners, policy makers, theorists, and researchers—must work jointly to pursue that which is perhaps most difficult: a democratic social/citizenship education committed to social justice, equality, and opportunity (see Ross, 1997) that does not paradoxically "deny change in educational change" (Popkewitz, 2000). Only then will our schools become, in the words of Alfie Kohn (1999), "the schools our children deserve" (pp. 2–3).

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CONTENT IN STANDARDS OF COMPLEXITY

Escaping Reductionistic Certainty, Decontextualization, and a Pseudolinearity

Joe L. Kincheloe

Because democratic standards of complexity demand sophisticated analytical skills and emphasis on both the reception and the production of knowledge, it doesn't mean that content is abandoned. In this context, it is understandable why many advocates of technical standards chastise many educational innovations such as critical-thinking and problem-solving programs that teach such skills in isolation from the curriculum, outside an engagement with subject matter. Standards analysts and educators working with standards must be careful not to come across as unconcerned with content in their zeal to cultivate analytic abilities and knowledge-production skills. Learning higher-order cognitive skills always takes place while working with content.

The Role of Content in Standards of Complexity

Such a recognition negates the importance of the content versus skills debate that ricochets throughout the contemporary standards conversation. Of course, students should learn how to detect and solve problems, make decisions, employ good judgment, and engage in higher-order thinking; the way they learn these skills is by engaging with disciplinary content, studying the history of disciplines, and gaining an understanding of the knowledge a field of study deems important and how experts arrived at such conclusions (see Lester, "Working with Knowledge"). This is not the end of the matter—a rigorous education insists that we go beyond this—but an

essential step in the process. As the American Federation of Teachers (AFT) (1997) insightfully asks in their version of standards: "Is it possible to name a problem to be solved, a decision to be made, or a thing to be thought about that is not tied to subject matter?" (AFT, 1997, 15).

Thus, acquisition of content is necessary in standards of complexity, even though the simple possession and reproduction of information provided in teacher-directed lessons are not the final goals. In the rigorous academic standards advocated here, the subject-matter content of disciplines that teachers and students encounter is viewed as a part of many larger frames of reference. Seen in this context, information is subjected to research and interpretation. Textbook content, for example, is seen not as a finished product but as a stop on human beings' perpetual journey to make sense of themselves and the world around them. Teachers striving to reach standards of complexity are well versed in content and, when they present it to students, offer it in a context of inquiry.

Highly skilled students learn the information in this type of context and quickly take it to the next level of analysis. Because of the purposive nature of such a learning process, students traditionally uninterested in schooling are engaged, and all students gain content knowledge that would have been dismissed and ignored in a technical curriculum grounded in committing decontextualized, unexamined data to memory for regurgitation on a fact-based and conceptually fragmented test. Thus, this approach to complex acquisition of analysis of content is more than simply a rigorous pedagogy but is also an approach to motivation. Students—and teachers—are far more invested in learning when conscious of its purposes and benefits. Such intrinsic incentives work far more effectively and consistently than the extrinsic motivations of testing.

Thus, standards of complexity seek to help schools turn out students from diverse social backgrounds who are smart and engaged, possess subject matter–content knowledge in a variety of domains, and recognize the strengths and limitations of the information they have engaged. In a culture that continually is forced to deal with widespread depression, random violence, hate crimes, physically and psychologically debilitating stress, loneliness, suicide, war, and injustice, many observers maintain that traditional forms of disciplinary knowledge and knowledge production have failed to understand or positively address such problems. Such a reality induces advocates of standards of complexity to consider the weaknesses of traditional content and the social and moral emptiness of educational standards that call for students to merely commit such data to memory.

After studying disciplines of knowledge, their histories and assumptions, advocates of democratic notions of rigorous scholarship, such as Stan Lester in this encyclopedia, insist that students explore the all-important relationship between school and society,

between disciplinary knowledge and its contribution to the social good (Willinsky, 1999, 2000). In this process, weaknesses of disciplinary data can be ascertained, and alternative forms of knowledge and methods of knowledge production can be contemplated and developed. The complex but comprehensible nature of these information and educational dynamics constitutes one of the main reasons we use the phrase *standards of complexity*. At the beginning of the new century, we are dealing with profoundly complex social, cultural, psychological, cognitive, and pedagogical issues. To ignore such complexity in favor of some facile notion of learning and oversimplified depiction of knowledge production and validation is to commit a grievous error of judgment that will adversely affect everyone throughout the twenty-first century. Once again, the standards debate manifests its vital connection to larger social, cultural, economic, and political issues.

Avoiding Reductionism: Developing a Rigorous Notion of Content

The advocates of technical standards in their reductionistic view of knowledge fail to see that disciplinary content is a map of the territory (the subject in question), not the territory itself. To mitigate confusion, such a recognition is one of many aspects of the higher-order thinking so central to standards of complexity. Teachers and students with such a facility understand what content is before they blindly commit it to memory, gear the entire curriculum around its acquisition, or judge the quality of an educational system on how well this process has been accomplished. A simple question—what exactly is the content being learned?—can move us to new levels of achievement and open the door to exciting cognitive possibilities. Just as a flying instructor who has never flown a plane is not qualified to teach prospective pilots, teachers who have not engaged in sophisticated knowledge work are not qualified to teach to standards of complexity. Unfortunately, many of the existing ways of thinking about staff development are not conversant with the concepts raised here. The prevailing model of in-service teacher education, as well as professional education in general, is grounded in the unexamined premise that teachers *deliver* the unproblematized content of the disciplines. Thus, teachers in their workshops are typically treated as *mere practitioners*, not as scholars. In these situations, condescending "experts" tell them: "Here is what the research has told us to teach—now go out and do it." No wonder such a vast number of teachers feel degraded and unappreciated (Novick, 1996).

In standards of complexity, teachers come to see content in a much more textured way. Their ability to engage in knowledge work and scholarly activity is assumed, and in-service and preservice education becomes more concerned with the extension of the scholarly abilities of teachers. Here

they get help with their research skills, connect with different scholars involved with a variety of research projects around the world and in their local communities, explore possible research projects for their classes, and engage with scholars who model ways of teaching these content-production and analytical skills in a wide variety of contexts and to a diversity of students. One of the most important understandings for teachers who are prepared to engage content in a way that achieves standards of complexity involves a deep understanding of epistemology. The word is derived from the Greek word for truth, *episteme*, and involves the study of the nature of knowledge, what constitutes it, and how it is produced.

The standards debate always involves competing conceptions of epistemology, as various advocates struggle over how we view academic and scientific knowledge: as a final, validated description of the way the world is, or as a contingent perspective on the world influenced by a variety of assumptions about the research process and the cultural values that shape interpretation. A detailed understanding of these epistemological issues on the part of teachers changes the way they view content. It can never be seen as a mere body of data to be inserted into the minds of students ever again. Thus, with such an awareness, teachers engage in a different relationship with knowledge, a profound new appreciation that induces them to rethink the purposes of education and their own teaching. Knowledge and the pronouncements of experts are no longer beyond questioning, and the teacher is no longer a "peon" of the system who simply delivers the information he or she is provided.

As teachers utilize these domains of study and analysis, they have moved into rigorous scholarship—they now are residents in a zone of complexity. Sophisticating their epistemological understandings and their knowledge-production abilities, teachers begin to think of content less as something to be committed to memory regardless of where students are and what they need. In this more informed context, rigorous teachers and their students begin to view and value content in relation to their assessment of the social and educational needs of their circumstances. Is this information, such a teacher might ask, important for Susie to know in her attempt to expose the forces that keep her neighborhood poor and dangerous? Does she gain insight into the way social dynamics operate so she can help herself and others overcome them? Teachers in this rigorous context ask: how does this knowledge relate to the lives of my students and myself?

The ironic point in this debate is that students engaged in an education grounded in standards of complexity, in addition to their analytical and applicative abilities, actually retain more subject matter. Even when teachers who are evaluated by their students' test performances teach to the test, their students do not perform any better than the students who have studied a wider range of subject matter from a

far more analytical perspective. In relation to our aforementioned references to the shallowness of the public conversation about standards, it is hard to believe that such issues are not typically discussed. The questions—What do we mean by content? How do we decide what content should be taught in schools? How do we engage content in the educational process?—are central but underaddressed in the conversation. It is time for such a discourse to begin.

Content Knowledge Is Power: It Shapes Consciousness

It has become cliché in the past couple of decades to argue that knowledge is power. Despite all of the talk, those with power still get away with controlling knowledge and determining what qualifies as validated knowledge within this culture. No responsible discussion of content and educational standards can ignore these political features. In many ways, we are what we know, meaning that validated knowledge and curricular content shape our consciousness and identity. Content knowledge in this context becomes even more important in schooling and the debate over standards. In the reductionistic context of technical standards, content is simply something to be learned. The educational context is much too simplified to think about where content comes from or what its effects might be. Students in these reductionistic contexts do not think about such issues, nor do they confront questions about why they tend to think in particular ways about themselves, the world around them, and their relationship to that world. Content in technical standards has nothing to do with such issues.

Of course, standards of complexity view content as a much more complicated and influential matter. Subject-matter content used in reductionistic schools is often created by experts who answer only to those who pay their bills. Those who pay their bills are most often those with high levels of economic and thus political power in the society. These certified experts not only create school subject-matter content but also undermine personal authority and self-direction by their validated pronouncements. Individuals in schools and workplaces cannot protect their personal autonomy unless they gain the ability to take part in the knowledge-production process. The goal of arresting the erosion of personal autonomy will be accomplished only when students and ordinary citizens create competent communities that have knowledge-work abilities. As part of this larger political process, teachers, students, parents, and local community members must participate in the act of research and knowledge production; they must play an important role in determining what is designated subject-matter content (Lasch, 1979).

Power is reflected in language and knowledge in ways that make it hard to recognize. Indeed, individuals constantly encounter knowledge that is soaked with the power dynamics that created it—but such notions rarely oc-

cur to people in mundane, everyday life. Because these power dynamics operate at levels hidden from our consciousness, we are typically not aware of how our worldviews are shaped. Standards of complexity, therefore, should be viewed as based on an educational philosophy that promotes self-knowledge and self-criticism. Such educational reform works to produce a higher understanding of self that sees the self-production process as a product of social and historical forces. Students in complex schools learn to call out and criticize the ideological frames they use to make sense of their lives. In a rigorous, skill-producing manner, students learn the historical, social, fictive, theological, and analytical literature with which they need to engage as they explore their consciousness construction.

In this context, they study the deep structures that help shape our consciousness as well as the historical context that gave birth to the deep structures. Standards of complexity explore the sociohistorical and political dimensions of schooling, the kind of meanings that are constructed in classrooms, and how these meanings are translated into consciousness. Reductionistic educators often speak of student and teacher empowerment as if it were a simple process that could be accomplished by a couple of creative learning activities. One thing our ideological critique of self-production tells us is that the self is a complex, ambiguous, and contradictory entity pushed and pulled by a potpourri of forces. The idea that the self can be reconstructed and empowered without historical study, linguistic analysis, and examination of these contexts trivializes the goals of a rigorous education.

How do we move beyond simply uncovering the sources of consciousness construction in our larger attempt to become rigorously educated? Teachers guided in the complexity principle must search in as many locations as possible for alternative discourses, for ways of thinking and being that expand the envelopes of self-knowledge. In order to engage in this aspect of the "education of self," students and teachers must transcend the reductionistic conception of the static and unified self that goes through life with the 106 IQ—it is 106 today, it was yesterday, and will be tomorrow. Peter McLaren (1991) maintains that we can find a diversity of possibilities of what we might become by recovering and reinterpreting what we once were. Although we might use this to change our conception of the world, we must see this change of conception (this change of *mind*) as only the first step in a set of *actions* designed to improve public education. In such a pedagogical context, we provide subject-matter content the respect it is due. Instead of meaninglessly stuffing it into our minds, as technical standards demand, we grow to understand ourselves in relationship to a diverse body of disciplinary knowledge. We value such forms of knowledge and the need to critique them, as we become highly educated and highly insightful people.

Untidy Content Knowledge: We're Still Talking about Complexity

The world is far more complex than the way it is represented by the content knowledge of technical-content standards. Indeed, manifesting some primordial need for order, advocates of reductionistic standards recoil at the possibility of an education that interacts with and relishes the complications of our psychological inner worlds, life in the give-and-take of the classroom, and the struggles of social, political, and scientific macroworlds. Proponents of technical standards lament the confusion and the noise foisted upon the educational process by the humanness of men, women, and children. Like the librarian who dreams of the tidiness of a library without patrons, reductionists fantasize about a spick-and-span system where students are all identical, standardized entities capable of being measured precisely. Research and education would be so much easier, they dream, if researchers and the researched teachers and students didn't have to interact through the imprecise medium of verbal language, disagree over standards of success, and find themselves separated by divergent value structures (Shweder and Fiske, 1986). At this rate, they warn, we will never really "know" anything; we'll never produce subject matter on which to test quality.

Utilizing postformalism, standards of complexity induce teachers and students to tap into our socially constructed inner world of experiences. Such a process involves our ability to bring to conscious view our culturally created and therefore limited concept of both self and world, thus revealing portions of ourselves previously hidden (Pinar, 1975, 1994). To think about one's own thinking in a postformal manner involves understanding the way our consciousness is constructed, appreciating the complex forces that facilitate or impede our understandings. Postformal thinking involves our ability to engage in ideological disembedding, the ability to remove ourselves from sociointerpersonal expectations. This postformal concern with questions of meaning and attention to the process of self-production rises about the Piagetian formal level of thought and its concern with proper procedure. Cognitively complex postformalism never allows us to be content with what we have cognitively constructed or with expert-produced curricular content. Never certain of the appropriateness of our ways of seeing and always concerned with the expansion of self-awareness, postformalism engages individuals in a running metadialogue, a constant conversation with self (Codd, 1984; Kegan, 1982; Pinar, 1994, 1999).

Ancient Greeks were fascinated by how in a room filled with conversation, there periodically spreads a lull of profound silence. The Greeks postulated that at such moments Hermes had entered the room. By silencing the everyday babble, Hermes allowed the Greeks to tap their imaginations, fears, hopes, and passions. Through

this awareness, they were freed from acting out socially constructed expectations that they really didn't understand. Hermes came to symbolize the penetration of boundaries—boundaries that separated one culture from another, work from play, fantasy from reality, and consciousness from unconsciousness. With his winged sandals and cap of invisibility, a contemporary Hermes can now bring the power of the unconscious into another room, the complex classroom. With this power of the unconscious and the intellect, Hermes delivers insight and the potential for cognitive growth and self-understanding in relation to a variety of subject matters. In his twenty-first-century entrance, Hermes instigates a lull of silence that results in the pointing out and quieting of the conversation among the voices that shape consciousness. As he connects us to self-knowledge, Hermes becomes another in a long line of different cultures' trickster gods associated with the power of intellect and imagination.

There is nothing simple about this educational process and the disciplinary content one must engage in its pursuit. Indeed, rigorous teachers cannot think about the subject-matter curriculum outside of such a context. If they do, they are deceived by the political innocence of a body of agreed-upon knowledge being systematically passed on to students by an ever evolving, but always neutral, instructional process. We know too much to be seduced by the never-aging sirens of political neutrality and pedagogical reductionism. As a deliberate process, the curriculum is always a formal transmission of *particular* aspects of the culture's content knowledge. Do we teach women's and African American history in eleventh-grade social studies? Do we read Toni Morrison and Alice Walker in twelfth-grade literature? These are sociopolitical questions—that is, they involve power.

I am still referencing reductionism and complexity, technical standards and standards of complexity, here. Selection of content and the role it plays in the teaching and learning process affect the everyday world. How we think about these dynamics works to actually change or maintain the status quo. Descriptions of the world do not rest; they do not retreat to a physical scientific or a sociological easy chair. They are part of the commerce of the world; as they define it, they change it. Content is always a major issue in the cultural battle. If so, then curricular matters can never be sequestered in the psychological domain. The public conversation about standards should not be simply a reductionistic conversation about what content should be memorized. Such a discussion should address the complex role of content in the educational process and the social and political dynamics inseparable from the larger issue of educational reform. What we teach, how we teach it, and the ways we engage students in the process of confronting it are all issues that *shape* and *reflect* who we are as a society. These are never simple questions; like content itself and its use in the educational process, they are untidy and complex.

Obviously, standards of complexity address the caricature of certainty that drives technical-content standards. In reductionistic standards, the teaching act is viewed as an English sentence, subject acting on object: devise objective content standards, use standardized tests to see if such information has been mastered, then track and graduate students on the basis of their scores. In such a reductionistic view, teaching and learning are decontextualized and assumptions are left unanalyzed. Why are students performing as they are? What content is being taught, and what is not? What do standardized tests measure? Are there any social patterns emerging in relation to tracking and graduation? How do we define an educated person? The classroom is too complex to view it in a simple cause-effect manner. Issues of context and purpose are simultaneously affecting everything that occurs in the educational process. Advocates of standards of complexity take this confusion into account as they study the complicated nature of educational reform and consider the role of content in the larger pedagogical transition.

The way we view subject-matter content makes a profound difference in the way we see teaching and the goals of educational reform. If we learn anything from standards of complexity, we come to understand that teaching is an uncertain and complex enterprise. If the act of teaching were known and constant, then teachers could simply follow the dictates of empirical generalizations and teacher educators would know exactly what teachers needed to perform successfully. Unlike fast-food employees at McDonald's who are taught to follow precisely a ten-step process in making a Big Mac, most teachers now realize that their practice is situation specific. When practice is grounded in generalized formulas and quantitative measures typically conceptualized around student mastery of isolated but measurable bits of content, teachers are removed from the particularities of the everyday life of the classroom.

Such practice assumes that teaching is constant and predictable, always occurring in a cocoon of certainty. Reductionistic, technicist teacher education prepares novices for classrooms that are "objects in general," not as if they were ambiguous and distinctly human situations unlike any other in the cosmos. Sophie Haroutunian-Gordon (1988) characterizes classrooms as ill-structured situations that must be viewed in their particularity to be appreciated. No longer can the argument be made that educational science can eliminate the uncertainty of professional practice and replace it with an empirical knowledge base about the teaching act. With the complexity principle in mind, no longer can experts simply mandate an "objective" body of subject matter for teachers to pass along unproblematically to cookie-cutter students. Speaking in the context of complexity, such practices simply don't work.

Is the purpose of public education to simply pass a body of unquestioned truths about the superiority of West-

ern civilization along to students? In many articulations of reductionistic technical standards, the answer to this question is an unqualified yes. In these content-driven standards, civilization itself has been linked to Western ways of life and Western subject-matter content. Thus, the word *civilization* becomes a tyrant, a wielder of power, as it privileges some ways of living and excludes others. As it privileges or excludes, it also justifies certain actions. If certain peoples are uncivilized, it becomes easier to justify their conquest, their eradication, their banishment from history. A little "collateral damage" becomes much easier to accept when we don't know the people involved, when we are ignorant of their culture and their history. Indeed, they're not even going to be saved on Judgment Day.

Thus, the global content of standards of complexity is politically inscribed just as much as is the monocultural content of technical, reductionistic standards. Standards of complexity consciously seek subject matters that provide alternative readings of the world, perspectives derived from difference. Such complex standards do not accept the inevitability of the ethnocentric, chauvinistic subject matter proclaimed by technical, reductionistic standards. Without an injection of complexity, negotiations over knowledge are ended—the stupidification of U.S. students continues (Macedo, 1994; Derrida, 1976; Gergen, 1991). Higher orders of cognition are struck down in the name of "respecting our heritage."

As technical standards strive for singular truths within a culture, they reduce the number of alternatives we have for relating to others both inside and outside our social context. Just as a ninth chord and a reggae rhythm expand the conceptual vocabulary of a guitar player, so exposing the culture to the impact of alternative ways of thinking magnifies its capacity to develop ethically and politically, to make new forms of social music. Each new language of perception offers another way of framing the world, another vantage point in the fabric of reality. The prison of the "given" forces us to view certain aspects of the world as problematic while at the same time exonerating other dimensions. Nurtured by reductionist assumptions, teachers are expected to assume authoritarian roles in particular subjects. Their appointed task is to systematically fill the minds of their students with a body of approved content. They have no professional or scholarly input into the process. Such input is the reductionist's nightmare—it throws a monkey wrench in the linear, orderly process of teaching, learning, and testing.

In their view, it would be better to employ teachers in technical standards–driven schools who read on the eighth-grade level, have finished high school, ask few questions, and eschew scholarly activities. Scholar-teachers conversant with the goals of standards of complexity reject such a role, arguing that scholarly ability should not be at odds with the work of teachers. As I interview teacher-scholars operating

in reductionist, technical standards–driven schools, I listen to the pain and emotional suffering they endure as a result of the anti-intellectual perspectives of many of their supervisors and administrators. Such alienation grows deeper and more unbearable as technical standards assume a larger role in shaping school cultures. Such reductionism and the subject-matter truths it mandates drive away our best, brightest, and more dedicated teachers.

A reductionistic system rewards mediocre teaching, pedagogies that refuse to question "the given," practices that fail to question the construction of the curriculum. If teachers are going to be able to deal with the complexities of subject-matter content delineated here, they must first learn sophisticated modes of scholarship. A central feature of standards of complexity involves engaging teachers in a higher order of cognition and professional practice. Professional expertise, as Donald Schon (1983, 1987) maintains, is an uncertain enterprise as it confronts constantly changing, unique, and unstable conditions. Teachers never see the same classroom twice, as teaching conditions change from day to day. The students who reacted positively to a set of pedagogical strategies yesterday respond differently today (despite William Bennett's assurances of "what works").

Drawing from their scholarly expertise, teachers who understand Schon's argument know that the subject matter that advocates of technical standards are mandating they teach as "truth" is merely one of many points of view held by scholars around the world. To fail to teach about these disputes, the reasons for them, and the debate with the discipline in question is to miseducate students. Scholar-teachers grapple with such questions; they are deeply wounded when a technical supervisor making sure the correct content standards are taught orders them to stop teaching about the complex disciplinary discourse and reprimands them for "incompetence." How could we have reached a time in U.S. schooling where such expertise is sometimes viewed as "deficiency"? For the future of education and the good of U.S. society, standards of complexity need to put an end to such sociopolitical and pedagogical pathology. To make such a difference, everyone involved must understand the complexity of the task, the untidiness of the entire process down to the content taught.

Whitewashed Content: Reductionistic Knowledge Production

In the universe of top-down technical standards, teachers are "data mules," information deliverers with an accompanying lack of status. Such mules don't (or at least are not supposed to) question what they are hauling. They should not care if the knowledge is produced in a decontextualized manner, care whether it is an unconnected body of information, or worry about its ideological inscriptions and its insidious impact on the consciousness of

students. These are irrelevant questions in a reductionistic system that simply asks: "Did they learn it? What are the numbers?" Reductionistic research on teaching falls into the same decontextualized trap, as does the technicist method of evaluating student progress. When researchers attempt to remove human activity, especially educational action, from its natural setting, serious consequences result.

Contrived educational settings, often positivistic laboratory situations, are set up by researchers who hold similar implicit assumptions, ask similar questions, and look for similar outcome measurements. Is it surprising that such settings are perceived to generate regularities in individual behavior—regularities that form the basis for verified generalizations, for truth? The content knowledge about education produced by such reductionistic studies tells us little about how pedagogy works, how schools operate, or how students become scholars. A knowledge-production process conducted in a nonnaturalistic, artificial venue attends only to particular, measurable, isolated variables. Such variables are sometimes so isolated, so insignificant in light of the multitude of other variables not explored, that the results of the inquiry are irrelevant. The "truth" claims of such research are, to say the least, questionable. Positivistic laboratory researchers present "verified knowledge" about how a particular technique produces success in teaching; understanding their process of verification, we may hold justifiable skepticism that such a technique will prove successful in an actual school, in the everyday classroom that teachers inhabit.

Remove this concept for a moment from the educational world and think of it in a zoological context. Ethnologists have written of similar insights into research on animals. Research conducted in animal labs or zoos produces data on wildlife that have little to do with how they behave in natural settings. Zoos, labs, and questionnaires in a sense become unique settings in their own right, with their own dynamics and peculiar forces to help mold behavior (Orteza, 1988; Wilson, 1977). Positivistic reductionistic researchers in their search for verifiable data fail to recognize that their controlled situations take on this Frankenstein life of their own. Such blindness precludes understanding of the often hidden processes by which settings shape behavior. Both the physical arrangements of the settings and the subjects' internalized expectations of what is allowable generate forces that help fashion research findings.

In natural settings such as schools, participant behavior cannot be understood without careful attention to the participant's relationship to the traditions, norms, roles, and values that are inseparable from the complex lived world of the institutions. The inability of reductionistic researchers to say very much that is meaningful about school life is due in part to their lack of regard for these often invisible but foundational aspects of organizational life. Research removed from the natu-

ral setting cannot account for such aspects of educational life because they are not present in the contrived laboratory situation—hence, the truth value of the knowledge produced is undermined (Eisner, 1984; Wilson, 1977; Denzin and Lincoln, 2000; Kincheloe and McLaren, 2000). These knowledge-production dynamics exert a major impact on the goals of schooling, the content taught, and the way it is taught. Teachers in educational settings shaped by standards of complexity must be keenly aware of these issues.

When public schools, colleges of education, and much of the research establishment have learned about knowledge production and subject matter in reductionistic contexts such as the ones described here, it is not surprising that the public conversation about educational reform is so artless and the thinking of many educational leaders is so truncated. In such a reductionistic context, many individuals fail to understand the knowledge-production process and the slippery nature of the meanings it produces. The meanings that researchers attribute to terms such as *reading*, *teaching*, and *learning* influence the forms our evaluations of teachers, students, and schools take. For example, think about a researcher seeking to determine whether a particular science pedagogy produces high science scores on the technical standards–mandated graduation test. The researcher begins the study by identifying what learning is and what behaviors should be examined to determine whether it has taken place. There is nothing objective about such a process; absolute, certain knowledge does not emerge from such a study.

The knowledge that does emerge is inherently conditional—dependent on an acceptance of a variety of assumptions about the goals of science education, the definition of a good student, the nature of learning, and so on. These research issues are always questions of meaning. As our perspective on research fashions our evaluation strategies, the designation of who is a competent or incompetent teacher or a good or bad student is contingent on the system of meaning on which researchers base their assumptions. If, for example, a student's ability to sense inconsistencies in the work of mainstream physicists and to offer insights into what the field might do to correct such problems is deemed a characteristic of a good science student, then standards-driven standardized-test scores tell us little about such a student's abilities. This is the problem with scholarly teachers. Because they possess more rigorous goals than mediocre teachers, they are often judged by reductionistic evaluation systems as incompetent. Such evaluations have no mechanism to assess the higher-order skills they are helping their students develop.

Teachers who possess a different teaching style may find themselves punished because of the inability of reductionistic evaluation systems to deal with pedagogical diversity. In my own teaching, I have had supervisors leave my classroom frustrated that I

was not "really teaching." Because I had devised a classroom where students were engaged in a research project, I was not simply delivering a body of content for deposit in "student receptacles." Given the evaluation instrument the supervisor used, teaching consisted only of this delivery-and-deposit process. When such activity did not occur, no evaluation could be administered. My research-oriented teaching did not exist in the world of schooling constructed by the reductionistic evaluation instrument. Indeed, the very characteristics that accompany genius usually don't exist in the evaluation instruments (usually standardized, multiple-choice tests) used in top-down technical standards to evaluate students. Our naive view of knowledge allows many of our most brilliant students to become angry and alienated, as they are repeatedly punished for their unique abilities.

No Ambiguity Here: Reductionism and Content

Advocates of standards of complexity are acutely aware of the "quick and out" nature of reductionistic modes of research and the simplistic views of human behavior and education assumed in such knowledge-production strategies. Examples abound of the distortions of this process. Consider the complexity of gender in standards-driven standardized tests. Many reductionistic educational studies completely ignore gender or view it as a simple, decontextualized causative factor, not taking into account gender's interaction with other variables in the situation.

When reductionistic, positivistic research ignores the wider context and the multitude of other variables that attend it, the conclusions drawn from such studies typically suggest innate differences (often hierarchical) between the sexes. Studies, for instance, that look only at gender differences in math achievement might discover (accurately) that boys do better than girls on particular standardized math tests. By not examining the results contextually, not pursuing explanatory factors, reductionistic researchers fail to consider the panoply of reasons for the different scores. Appealing to the accuracy of their statistics as authority, researchers fail to confront the "quick and out" simplicity of their research design. Thus, "what is" appears to be only what "has to be"; the public is provided with further "proof" that boys are naturally better than girls in math (Jayaratne, 1982; Hicks, 1999).

Educational researchers attempting to escape reductionism often employ forms of inquiry that use multiple research methodologies. Such a bricolage seeks to escape the reductionism of one methodological viewpoint. Such researchers might study female performance in math not only from a quantitative perspective but by using qualitative methods such as ethnography, historiography, and textual analysis as well. Using ethnography, a researcher might conduct interviews with female students concerning their perspectives, feelings, and dispositions about math. Such interviews might

provide valuable insights into sociopsychological factors having little to do with innate mathematical ability that shape women's relationship to the discipline.

Historiographical methods might help one gain a historical perspective toward women's math performance in schools and in work-related domains. In this context, a researcher might gain valuable insights into the gender dynamics of math education such as the effect of social movements and cultural changes in the role of women vis-à-vis the discipline of math. Textual analysis could also provide compelling insights, as researchers study the themes and hidden assumptions that might emerge from documents such as reports from superintendents of schools or psychological studies conducted at different historical periods or in different societies. Engaging in such a bricolage of inquiry, knowledge producers could develop a far more complex, textured, multidimensional view of the relationship between gender and math. Such researchers employing the antireductionistic strategies of the bricolage produce what might be referred to as "humble subject-matter content." As opposed to the quick positivist who seeks concrete structures and validated data that can be used to make predictions, the humble researcher practices a form of inquiry that is humble in the sense that it respects the complexity of the socioeducational world.

Humility in this context is not self-depreciating, nor does it involve the silencing of one's voice; humility implies a sense of the unpredictability of the educational microcosm and the capriciousness of the consequences of one's inquiry. Methodological humility is an inescapable characteristic of the contemporary world and its loss of faith in scientific salvation and the possibility of a single frame of reference, a common vantage point from which we might all view the world. Methodological humility eschews the positivistic impulse to dominate the world through a knowledge of it. Though it was on the lam for a long time, reductionistic, positivistic science can no longer escape the creeping skepticism that dominates our twenty-first-century conversations about almost everything else (Ruddick, 1980; Aronowitz, 1983, 1988, 1996). Such "humble content" is a concept that applies not only to knowledge production but also to pedagogy. If teachers approach a curriculum from a humble perspective, the chance for indoctrination and student memorization of fragmented, meaningless "truths" declines precipitously. Standards of complexity are dedicated to this sophisticated notion of humility.

Arrogant Content Knowledge: Producing the Truth

Reductionism typically produces the opposite of humility—indeed, it produces an "arrogant content," a.k.a. the truth. With the coming of the scientific revolution, or the Age of Reason, in the sixteenth and seventeenth centuries, nature was to be controlled,

"bound into service and made a slave" (Capra, 1982, 56). The basis of this control was founded on the epistemological separation of knower and known. This bifurcation legitimates the assumption that the human perceiver occupies no space in the known cosmos; existing outside of history, the knower knows the world objectively. Thus, knowers are untainted by the world of opinions, perspectives, or values. Operating objectively (without bias), the knower sets out on the neutral mission of science—the application of abstract reasoning to the understanding of the environment. As previously explained, reason told the pioneers of science that complex phenomena of the world can be best understood by reducing them to their constituent parts and then piecing these elements back together according to laws of cause-effect (Kincheloe, 1991; Mahoney and Lyddon, 1988; Capra, 1996).

All of this took place within René Descartes's separation of mind and matter, his "*cognito, ergo sum.*" This view led to a conception of the world as a mechanical system divided into two distinct realms: (1) an internal world of sensation, and (2) an objective world composed of natural phenomena. Building on the Cartesian dualism, scientists argued that laws of physical and social systems could be uncovered objectively by researchers operating in isolation from human perception with no connection to the act of perceiving. The internal world of mind and the physical world, Descartes theorized, were forever separate, and one could never be shown to be a form of the other (Lavine, 1984; Lowe, 1982; Aronowitz, 1988, 1996). We understand now, but could not have understood then, that this division of mind and matter had profound and unfortunate consequences —especially in questions of education. In all disciplinary domains and especially in education and psychology, this reductionistic science worked to produce oversimplified and misleading pictures of these domains. Such research produced a "thin content."

Contributing to the victory of reductionism and its production of thin content masquerading as truth was Sir Isaac Newton. Newton extended Descartes's theories with his description of space and time as absolute regardless of context—an assertion Einstein would demolish in 1905 with a far more complex view of physical reality. Clarifying the concept of cause and effect, Newton established modernism's tenet that the future of any aspect of a system could be predicted with absolute certainty if its condition was understood in precise detail and the appropriate tools of measurement were employed. Thus, the Cartesian-Newtonian concept of scientific modernism was established with its centralization, concentration, accumulation, efficiency, and fragmentation. Bigger became better as the dualistic way of seeing reinforced a rationalistic, patriarchal, expansionist social and political order welded to the desire for power and conquest. Such a way of

seeing served to despiritualize and dehumanize, as it focused attention on concerns other than the sanctity and well-being of people (Fosnot, 1988).

Along with Sir Francis Bacon, who established the supremacy of reason over imagination, Descartes and Newton laid a foundation that allowed science and technology to change the world. Commerce increased, nationalism grew, human labor was measured in terms of productivity, nature was dominated, and European civilization gained the power to conquer in a way previously unimagined. This is the aspect of the modernist scientific revolution that we hear about in the subject-matter content of school. The problems of reductionism and rationalism are rarely referenced in such content knowledge. The rise of modernist science was closely followed by a decline in the importance of religion and spirituality. An obsession with progress supplied new objectives and values to fill the vacuum left by the loss of religious faith. Even familial ties were severed as the new order shifted its allegiance to the impersonal concerns of commerce, industry, and bureaucracy (Aronowitz and Giroux, 1991; Bohm and Peat, 1987).

Rationality was deified, and around the scientific pantheon the credo of modernity was developed: the world is rational (logocentric), and there is only one meaning of the term. All natural phenomena can be painted within the frame of this monolithic rationality whether we are studying gunpowder, engines, dreams, learning, or the development of educational standards (Kincheloe, Steinberg, and Tippins, 1999). The victory of reductionism was almost complete. It remains dominant to this day, mowing down all challenges—including this one—with charges of irrationality and antiscientific perspectives. It is important to note that perspectives advocating complexity in knowledge production have made some inroads in recent years. Such success has been met with a bellicose reaction from the defenders of the reductionistic faith—such as advocates of technical-content standards. Suffice it to say, standards of complexity and the contextualized view of content knowledge promoted within this notion of educational improvement will not be warmly welcomed by dominant political and educational leaders.

Such leaders and their allies who advocate technical, top-down, reductionistic content standards do not question the Cartesian-Newtonian-Baconian premise that first and foremost science is a "fact" provider. Scientific research provides humans with indisputable knowledge. Values are subjective opinions that have little role in the world of research and education. Operating from this assumption, scientific managers have objectified the teaching workplace, focusing on measurable factors related to the bottom lines of productivity. The examination of human values as represented by John Dewey's assertion that education must be pursued as an ethical imperative does not fit into a view of education based on such a reductionistic

notion of science. Why all this fuss about complexity, reductionism, knowledge production, research bricolage, and content standards, advocates of reductionism ask, when we all know that science has simply provided us with the truth? The job of teachers is simple, they add: just deliver this truth to students.

Reductionistic Nihilism: Take What You Can and Leave the Rest

Reductionists tell advocates of complexity to give up their futile quest and simply do what can be done. Focus research on the regularities in the behavior of social, psychological, and educational dynamics. Social, psychological, and educational laws exist and can be discovered, reductionists argue. The regularities of behavior that positivistic researchers discover are the building blocks of social, psychological, and educational laws. Students in top-down technical standards learn these unquestionable and universal laws—they constitute an important part of essential subject-matter content. The search for the laws of society must start small with microscopic methods of investigation. The objects of social inquiry must be small and exist for short temporal periods. Reductionists are confident that years and years of such microscopic research will eventuate in an accurate final portrayal of social, educational, and psychological reality (Frankel, 1986).

Reductionist scientists and advocates of technical content standards cannot accept the complexity principle's assertion of social, educational, and psychological disorder. It is this positivistic discomfort with uncertainty that motivates the construction of logocentric designs: build more jails and get the deviants into them; reestablish old-fashioned discipline and solve school-management problems; allow administrators to determine what textbooks teachers should use and adopt them; inquire into what strategies would improve tests scores, then require teachers to use them; give principals more responsibility to fire "bad" teachers; pass a law or a constitutional amendment that requires citizens to respect the flag; do research that is simple, orderly, and elegant, and produces verifiable data; devise questionnaires that soothe our quest for certainty by subtly requiring respondents to answer questions in ways that prove the world is stable and predictable; as a research analyst, assume that the word and the deed are consistent; specify the content that is to be memorized in a technical standards–driven curriculum and then test students to see if they have "mastered" the information; reward or punish teachers in relationship to their ability to teach students the content needed to pass the standards tests.

All of these reductionistic, logocentric designs are based on the assumption of common frames of reference. The fact that they are arrived upon in a way that reflects the tacit, dominant ideology of a time and place is not considered in the quest for certain knowledge of the world of education.

Thus, in its assurance, in its refusal to examine the assumptions that guide it, reductionism often obscures more than it uncovers (Gordon, Miller, and Rollock, 1990). In the physical sciences, for example, knowledge producers in the first half of the twentieth century searching for answers to Newtonian questions about the universe were frustrated, as data from Einstein's, Niels Bohr's, Werner Heisenberg's, and David Bohm's research in physics refused to fit the pattern. As the Cartesian-Newtonian model was strained, new patterns began to emerge and new questions arose.

The linear, cause-effect Cartesian-Newtonian viewpoint began to disintegrate in the minds of advocates of complexity over the past few decades. Still a minority in the colleges of education and especially in the public schools, these thinkers have fought to gain an audience for their questioning of modernism's cause-effect linearity in the social and educational world (Ferguson, 1980; Capra, 1996; O'Sullivan, 1999). Like Einstein's theories of relativity (Kincheloe, Steinberg, and Tippins, 1999), advocates of social, psychological, and educational complexity work to produce a more complex body of content about these domains. Often, such content causes profound problems for the status quo, as it calls into question comfortable assumptions and practices. The future of this conflict between the arrogant content knowledge of reductionism and the humble content knowledge of complexity will shape human life in the twenty-first century and beyond.

Exploring the Web of Reality: Content in Context

The content knowledge produced by researchers of complexity assumes that the world is characterized by a complicated, weblike configuration of interacting forces. Knowledge producers, like everyone else, are inside, not outside, the web. As we have previously articulated, the knower and known are inseparable—they are both a part of the complex web of reality. No one in this weblike configuration of the universe can achieve a godlike perspective—no one can totally escape the web and look back at it from afar. We all must confess our subjectivity; we must recognize our limited vantage point. To recognize how our particular view of the web shapes our conception of social, psychological, and educational reality, we need to understand our historical location. Cause-effect educational research tends to ignore the way our historicity (our place in space and time) works to construct our consciousness; as a result, our concept of social activity and of the educational process is reduced to a static frame.

Thus, the reductionistic, positivistic researcher feels empowered to make predictions, to settle questions, to ignore the dialectical process in which all social activity is grounded. From this perspective, linear mathematics controls the variables, eliminates extraneous perturbations, and paints a Norman Rockwell portrait of the schoolhouse (Doll, 1989; Slaughter, 1997; Capra, 1996; Lemke, 1993, 1995). Obviously—and this is central

to this essay and to the encyclopedia as a whole—the type of content knowledge produced by reductionistic science is very different from the content produced by researchers of complexity. The curricular role of the knowledge constructed by the differing orientations is also very different. This is a central point not recognized in the public conversation about standards. We cannot productively discuss the nature of standards and educational reform until we appreciate these features.

From the perspective of Ilya Prigogine, the 1977 Nobel Prize winner in chemistry and proponent of complexity and chaos theory, reductionist, pseudolinear science distorts the content we produce about the world, as it shapes what we consider important and irrelevant in the physical, social, psychological, and educational domains (Prigogine and Stengers, 1984). Prigogine and the analysts of complexity realize that pseudolinear simplicity does not work. A so-called extraneous perturbation falling into the complex interactions that we have referred to as the web of reality can produce an expanding, exponential effect. Inconsequential entities can have a profound effect in a nonlinear universe. The shape of the physical and social world depends on the smallest part. The part in a sense is the whole, for via the action of any particular part, the whole in the form of transformative change may be seen.

To exclude such considerations is to miss the nature of the interactions that constitute reality. The development of a complex reconceptualization of educational research and the content knowledge it produces does not mean that we simplistically reject all empirical science—obviously, there are questions in education that involve counting, figuring percentages, averages, and so on. It does mean, however, that we conceive of such empirical questions as one part of the web, that is, the interactive configuration. A complex reconceptualization of educational research means recognizing, as Dewey did decades ago, that the knower and the known are intimately connected, that a science that separates fact from value, purpose, and belief is a pseudoscience divorced from the complex lived world of human consciousness. Such a reconceptualization reminds knowledge producers that we can display our content and argue for its value, but always with hesitation, a stutter, a tentativeness—never as *the truth* (Besag, 1986b; Doll, 1989; Briggs and Peat, 1989; Lemke, 1993, 1995; Aronowitz, 1988, 1996).

"So why are we dealing with all this stuff about research, knowledge production, subject-matter content, and chaos theory in an encyclopedia about standards?" some skeptics may ask. The reason is that all of these features tacitly shape the nature of the public conversation about standards, and they covertly shape the way all of us view the purpose of schools and, in relation to the purpose of this essay, the way we perceive the meaning and the role of content in the conversation about educational reform. The models of teaching we are taught, the defini-

tions of research that support our inquiry, the angles from which we view intelligence, and the modes of learning that shape the way we think all emerge from the issues concerning content knowledge and its production. Like reality itself, schools and classrooms are complex webs of interactions, codes, and signifiers in which both teachers and students are interlaced. Just as the complexity principle asserts that there is no single, privileged way to see the world, there is no one way of seeing the classroom, seeing intelligence, or seeing teacher or pupil success.

Onward to a Higher Standard: The Insight Gained from Multiple Ways of Seeing

This recognition of diverse frames of reference and multiple expressions of competence brings us to a conceptual watershed in the conversation about standards. In such a complex recognition, the standards rubber meets the educational road. It is here that technicist educators and advocates of top-down, reductionistic standards claim that the educational reforms advocated here, standards of complexity, promote an "anything goes" mentality; this is where, they argue, advocates of a complex education sacrifice equality for quality—a "leveling down." Obviously, I find this not only an incorrect and misleading position, but a dangerous one as well. Understanding different modes of analyzing quality academic expression is similar to Howard Gardner's recognition of multiple forms of intelligence, anthropologists' view of multiple models of social organization, the art world's appreciation of various artist schools and different cultures' amazing modes of artistic production, and a musicologist's appreciation of the wonder of the differences in European, African, and Asian forms of music.

Recognition of these types of diversities does not undermine artistic or musical quality—it profoundly enhances excellence in these domains. By understanding diverse expressions, we become better artists, better musicians, *and* better scholars. The point is so obvious that it would seem unnecessary to make, until we examine the monocultural, xenophobic standard content that passes for the technical standards–based curriculum. My words may be harsh, but I think they are apropos: such reductionistic standards emerge from a deep-seated cultural inferiority, a cultural fear that non-European barbarians must be kept from the gates. If they are not held at bay, then their cultures will overwhelm "our" own and "we" will no longer be the chosen people, the bearers of *civilization*. Indeed, the debate over educational standards strikes at the very core of U.S. and Western identity and the nature of our relationship to the rest of the world in the *globalized* twenty-first century.

Once teachers escape the entrapment of the Eurocentric, reductionistic, positivistic way of seeing, they come to value and thus pursue new frames of reference in regard to their students, their classrooms, and their

workplaces. They begin to look at their lessons from the perspective of their students—their black students, their Hispanic students, their Asian students, their Native American students, their white students, their poor students, their middle- and upper-middle-class students, their traditionally successful students, their unsuccessful students. They examine their teaching from the vantage point of their colleagues, an outside lay observer from the community, or onlookers from different communities and cultures. Thus, they step out of their teacher bodies, looking down on themselves and their students as outsiders. As they hover above themselves, they examine their own education, the role of the guardians of Eurocentric reductionism in their own consciousness construction, the ways their experiences and identity relate to these dynamics. In this same introspective manner, such teachers reexamine what may have been a technicist, reductionistic teacher education characterized by an anti-intellectualism marked by an emphasis on bulletin-board construction, behavioral objective writing, discussion-skill development, and classroom management. They begin to see that such professional training reflects the certainty of reductionism, as it assumes that professional actions are reducible to a set of skills applicable to all situations (Nixon, 1981; Steinberg and Kincheloe, 1998).

Consider, for example, what we can learn about the nature of positivistic content simply by a quick look at Hopi Indian linguistics. An examination of different linguistic and epistemological patterns highlights the taken-for-granted assumptions of English speakers. Indo-European languages, for example, confine us to particular ways of thinking. They often fragment experience by devaluating context and *relationship*. Because of their subject-predicate matrix, these languages induce us to consider the world in terms of linear cause-effect. Trapped in the view of language as a neutral medium of communication, modernist analysts have found it hard to talk (or think) about subjects such as quantum physics, the nature of consciousness, higher orders of cognition, or any other concept without identifiable boundaries, specific beginnings and ends, and a clear delineation of then and now.

The complexity principle attempts to denaturalize the modernist, Eurocentric universalization of Indo-European linguistics. Pointing to the fact that events in nature often have simultaneous multiple causes, many scholars argue that not all human languages have difficulty with nonlinearity. The Hopi and the Chinese, for example, speak "nonlinearly." Westerners from ancient Greece to the modern United States say "*the light flashed*," even if the light and the flash are inseparable. If we spoke Hopi, we would simply say, "*Reh-pi*," meaning "flash" (Ferguson, 1980). No linearity, no cause or effect, is implied. The new complexity offers an alternative to reductionistic modernism, a starting place in our attempt to formulate new forms of scholarly

rigor—forms that allow us to see what is now eclipsed by the modernist moon. Again, let me emphasize the notion that such a sociocognitive move to complexity does *not* mean that we throw out everything modernist—that would be silly. It does mean that we examine the shortcomings and strengths of modernist ways of seeing and the content they have produced from a new vantage point. Such a rethinking and assessment are long overdue.

Content in the Complexity of the Lived Classroom: Producing Rigorous Scholars

With these dynamics in mind, we can never teach any subject-matter content as a final truth to be unreflectively and unproblematically committed to memory. No longer are we comfortable with macho proclamations of our knowledge of the world. When we embrace complexity, we begin to speak in terms of constructions of reality. With our awareness of the various forces that shape the perspectives of content producers of all stripes (myself included), we begin to understand the complex process by which knowledge and subject matter get constructed. In this context, standards of complexity resist representations, constructions, interpretations, and the content emerging from these subjective acts that claim transhistorical, universal certainty. Advocates of standards of complexity take Einstein's work much too seriously to fall into such a reductionistic trap.

In rejecting modernist formalism's universal reason as the supreme form of cognition, standards of complexity seek alternative forms of thinking and knowing that are historically and socially contingent, partial as opposed to total. In this context, teacher educators can no longer appeal to some sacrosanct body of professional knowledge that is more important than all others in value, that demands the exclusion of what it is not. Teacher educators operating on the foundation of standards of complexity appreciate the need for rigorous scholar-teachers who can perform the analytical and research-oriented tasks necessary to understanding the process by which content gets constructed and legitimated. Here rests a key difference between technical standards and standards of complexity: in standards of complexity, teachers are valuable professionals who need to be respected, nurtured, and financially secure so they can pursue such rigorous and socially beneficial goals with as few impediments as possible.

Teachers in standards of complexity, thus, become experts at dealing with content. They know where it came from, the process that legitimated it, and how it made its way into the curriculum; they appreciate alternative content produced by different schools of thought and in different cultures and historical periods; they study the differences in these diverse bodies of content and attempt to identify the factors—epistemologies, values, cosmologies, theologies, and so on—that shape such dissimilarities. It

is in analyzing such dynamics that we learn to think more rigorously, begin to apprehend aspects of the world previously eclipsed, come to understand the content-production process and the ways knowledge disciplines operate, and, more important, begin to see our own place in the content-production process. Simply put, we become scholars.

To speak of these lessons in schools shaped by technical standards is to speak an incomprehensible language. The content understandings and the analytical processes necessary to the production of rigorous scholars are ignored in such reductionistic learning sites—and, amazingly, such a demeaning process takes place under the flags of academic excellence and rigor. Instead of exploring content in the previously described complex manner, technical standards–driven schools force pedagogy into a framework that is compatible with positivistic, scientific requirements. Such standards will force teachers to reduce the complexity of content knowledge and the teaching process itself to make it easier to measure the "important" variables. Such manipulations are sometimes not pursued in an epistemologically conscious manner; standards devisors and educational administrators are simply rearranging the teaching act in a manner that fits with the reductionistic and positivistic structures all around them.

Simplified content standards can be met in these situations, and test scores can be improved—and both often are in the first decade of the twenty-first century. The problem is that the specific needs of students in the living classroom may have little to do with these goals. Many student (and teacher) needs must be met before rigorous complex scholarship can be developed. Teachers in the one-size-fits-all standards of reductionism may have to ignore the aberrations, the problem students, the rebellious children who do not fit in the standardized classroom. In standards of complexity, these dynamics are central educational understandings—obviously, all children and young people are not alike, and the path to rigorous scholarly abilities is likely to be very different for each of them.

The ideas of reframing the standards, rethinking classroom objectives, reconceptualizing prearranged measures of performance, and reflecting on the types of content knowledge to be taught and the curricular role they might play are rarely considered and are even discouraged by devisors of reductionistic, positivistic standards. Standards of complexity value teachers and administrators who can diagnose the needs and strengths of their communities, schools, and students and change pedagogical direction in midstream if their strategies aren't working. Such standards value those professionals who can develop new strategies and new goals that address the exigencies of their teaching and learning context. What a difference there is between this empowered, self-directed notion of an educational practitioner and the deskilled rule followers required by top-down techni-

cal standards (Moore, 1989; Clark, 1987; Greene, 1986, 1995; Schon, 1983, 1987; Ohanian, 1999).

For those who would argue that the scholarly skills and content understanding necessary for teachers in standards of complexity are too much for them to handle, I strongly disagree. I have watched brilliant teacher educators around the world—several of them with essays in this encyclopedia—engage prospective and in-service teachers in the types of scholarship described here. Despite having to deal with anti-intellectual leadership in some colleges of education, the impediments of technicist mind-sets in the schools, and teacher-education students who have rarely been challenged in their arts and sciences classes or their professional-education curriculum, these brilliant teacher educators involve their students in the exciting complexity of the teaching act and the scholarly abilities it demands. I sincerely respect these committed pedagogues. They will have to lead us through the reductionistic waters of technical standards, the positivistic mind-set that demands the memorization of decontextualized, fragmented, and often erroneous content that has little connection to the lives of students.

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TEACHING STANDARDS OF COMPLEXITY IN PRESERVICE EDUCATION

Kay Fenimore-Smith and Ann Watts Pailliotet

In this chapter, we share how our critical theories, teaching experiences, practices, and outcomes in a secondary teaching methods course further state curriculum standards, teaching certification requirements, *and* standards of complexity. First, we describe our teacher preparation program and the social contexts in which our state standards emerged. We then explain our educational philosophies, secondary methods course, and a unique cultural inquiry project. Next, we offer data and anecdotes to show how our preservice coursework fulfills many standards of complexity. We last offer some implications for preservice education.

Preparing Thinkers, Teachers, Citizens, and "Good Subversives": Our Program and Goals

Our undergraduate preservice preparation occurs in a small, private, liberal arts college in the Pacific Northwest. Like most U.S. preservice teachers, our students are overwhelmingly white and middle class (Wise & Gollnick, 1996). Unlike many programs, our students major in a liberal arts discipline and minor in education.

Our philosophies, pedagogy, and outcomes reflect many standards of complexity. All department members share critical theory views, seeking inclusivity and justice in education. Like Kincheloe and Weil (2001), we rebel against the view of teachers as mere information deliverers, or "deskilled messengers who uncritically pass along a canned curriculum" (p. 23). We offer more foundations than methods courses, because we believe that when individuals engage with sophisticated knowledge in multiple data forms, they become critical, reflective thinkers; adept teachers; "transformative intellectuals" (Giroux, 1988); and concerned citizens who work for social change.

Understanding the place of schools in a larger societal context, providing equal educational opportunity to all students, achieving competency in subject matter, and acquiring the skills necessary to implement a variety of instructional techniques are essential components of our curricula and course work. We expect students to expand the boundaries of their knowledge as they are challenged and informed by issues of schooling in today's society—issues that defy simple solutions or quick ideological reforms. It is our goal to educate and prepare thoughtful, liberally educated, and pedagogically skillful teachers. Within this goal is the explicit expectation that education students will have a positive impact on the learning and lives of the students they will someday teach.

Our students are skilled and our program rigorous. We require high levels of academic ability (3.0 g.p.a. or above in major and education courses for acceptance). Our students complete many demanding projects: ongoing personal narratives, scholarly and field-based research, teaching philosophies, lesson materials, textual analyses, practica reflections, multimedia texts, journal assignments, and portfolios, to name a few. Like the editors of this book, we seek to connect theory with practice and school contexts to "real life." Students generate varied means of ethnographic and qualitative research; they continually observe in schools. Like the editors, we recognize changing social conditions and the new information order. We prepare our students to participate fully in the changing social order by incorporating diverse scholarship, mass media, multicultural readings, and technology throughout our coursework. Our students access, teach with, critique, and generate print, electronic, and situational texts as ways to "read" the world, "name" it, reflect about it, and "write" about their positions in it (Freire, 1970). (For a more detailed program explanation see Watts Pailliotet & Callister Jr., 1999.)

Our critical aims have led our students to joke that we are preparing them to be "good subversives" and "to get fired." Despite these wry observations, our graduates are in high demand for teaching positions. In fall 1996, we were content in our outcomes—progressive or radical, depending on one's point of view—and looking forward to contributing a future generation of good people, critical thinkers, compassionate leaders, informed citizens, knowledgeable teachers—and perhaps educational subversives—to classrooms and communities. Then we started receiving E-mail with headings like "The New State Essential Learnings."

"That's an Interesting Question."

Standards Arrive in Washington State: Social Contexts

In 1996, the Washington State Commission on Student Learning—a

coalition of educators, administrators, legislators, and businesspersons, primarily from the more populated western side of the state—framed four state learning goals and essential academic learning requirements (EALRs) for reading, writing, and communication. Under each category are listed pages of grade level competencies or benchmarks. (See: http://www.k12.wa.us/reform/ealr/ealrs.htm.) These large documents soon appeared in our campus mailboxes with little explanation of their relevance. In 1997, we received a list of twenty-four new teaching certification and program competencies that were subsequently added to and broken down into "foundational knowledge," "effective teaching," and "professional development" categories (Bergeson, 1998). (See http://search.leg.wa.gov/wslwac/WAC%20180%20%20TITLE/WAC%20180%20%2078A%20CHAPTER/WAC%20180%20-%2078A–270.htm.)

Additionally, a mandate arrived that required us to "respond to three questions":

> 1. How will your future teachers demonstrate their knowledge of the state's four student learning goals and EALRs?
> 2. How will your future teachers demonstrate their skill in developing curriculum, instruction, and assessments of P–12 students related to the state learning goals and EALRs?
> 3. What evidence will the college/university use to determine the extent to which the instruction has had a positive impact on P–12 student learning? (Education, 1997, p. 13)

Large, bold print directed us to "PROVIDE SPECIFIC EXAMPLES" (OSPI, 1997, p. 13). In 1998, we began to encounter continually changing lists of teaching endorsement program competencies (OSPI, 1998).

These communiques were written by people we had never met. Depending on interpretation, some requirements appeared to put us out of the teacher certification business altogether. Unsure about their impact on our program and students, our department chair wrote long queries, attempting to gain clarification. Most frequently, state contacts acknowledged he had raised "interesting questions," but offered little concrete advice, since the standards were "in process" or "still in development." Despite these ambiguities, we were expected to somehow demonstrate compliance. We were not alone in our inquiries.

When we talked with teachers, we heard much about standards. Some welcomed them as offering needed "structure," "accountability," or "guidelines;" others likened the top-down imposition of competencies by officials, who were far removed from the daily realities of teaching, to "black helicopters descending" on their lives and schools. As new and increasingly frequent school testing began to be implemented across grades in schools, all agreed this new empha-

sis increased pressure, confusion, and conformity in their classrooms. Many decried the time testing took away from other areas of learning.

Here is one teacher's statement that sums up these views:

> Unfortunately the state is saying, "We're going to do outside assessment on you. We're not going to let you do your own. Give it to us." Now they [the district] have second grade mandated, third grade mandated, and fourth grade mandated. I mean, let's just test these babies to death! I want to go talk to these guys, but then I don't know what to say or how to say it succinctly. I look like a fool, I get too passionate. Cut us some slack, look at the people we're dealing with and the needs of our people and the needs of our kids, and let us do what we need to do to get them from here to here. I'm always so thrilled to see the growth of a child as opposed to how they compare with every other fourth grader in the state.

Local elementary teachers worried that the new district-mandated compulsory morning block and required skills-based pedagogies for language arts instruction, designed to raise test scores, were not always appropriate for their students. They also had questions that remained unanswered. Why should they teach these new standards? How were they different or better than other reforms that had come and gone before? How could they best utilize the overwhelming array of new materials and assessment "tool kits" geared to the new standards that flooded their classrooms? What about the majority of children who were failing these tests? Despite a plethora of inservices, trainings, and committees, many apparently had no clear answers.

In press conferences and reports, our governor, legislators, and businesspersons soundly supported standards. But local school board meetings and letters to the editor revealed deep rifts in our community. Whereas some parents supported them as a much needed, rigorous move "back to basics," others condemned the "lock step" or "one size fits all instruction," loss of creativity or individual attention that resulted from "teaching to the test," and the stress that "high stakes assessment" imposed on their children. Our local population of largely poor, Spanish-speaking, migrant families remained invisible in the public debate. When our newspaper published sample elementary-level test questions, the majority of adults who responded could not accurately answer them. Meanwhile, in a series of taxpayer revolts, school levies and other state funding failed to pass, thus requiring teachers and students to make do with less money and resources. Despite these outcomes, concerns, and events, officials and newspaper editors voiced confidence, that with time, the new standards would all work out.

Our department members attended numerous meetings, always on the other side of the state, which necessitated travel and time away from our students. Some events were designed

to solicit "feedback" from teacher educators. In one, we were presented with standards—already in their current form—labelled "Draft." We were organized into groups; directed to "brainstorm" educational goals to meet these standards; we dutifully created cunning little drawings and charts that we subsequently "shared" with each other, while state officials who "facilitated" took no notes and asked few questions. When a Hispanic educator voiced concerns about the dearth of people of color on the commission that generated the standards, and paucity of considerations about student diversity in the EALRs, no one responded. We later sat listening to an "expert" speaker. He produced an array of geometric figures about assessment (all contained in his textbook, which we were all urged repeatedly to buy). When someone asked how his models related to the standards, he replied, "That's an interesting question," and continued on with his planned show.

Other sessions and conferences we attended were "informational," but offered few explications. At one, the head state official couldn't or wouldn't define a benchmark. At a second, the new teaching standards were likened to "I.E.Ps for teachers." Side conversations revealed many educators in the audience were deeply offended by this statement's implications, but no one directly voiced an objection. At a third, we collected reams of figures and materials that had little connection to the issues we wished to clarify. I recorded over twenty-five ways a speaker avoided answering my inquiry about the documentation and assessment we needed to implement, including: "That's an interesting question." "We thought about that too." "We are studying that." We haven't come up with a definitive answer yet." Other presenters and subsequent E-mail often contradicted each other. Rare campus visits from state representatives focused more on finding out about our own assessment procedures, than offering us advice or guidance.

Despite our regional distance from and philosophical recalcitrance to the decision-making process, we got the distinct impression that standards were a done deal. We resigned ourselves to developing means to show compliance, if possible, without sacrificing our critical ideals and methods. We sought parallels among state teaching program approval standards and our own aims. For instance, our liberally and rigorously educated students certainly knew content in their chosen subject areas; we made sure they noted relevant state goals and essential learnings, referencing them when they developed units and lesson plans. Our program covers extensively social, historical, and philosophical foundations and stresses understandings of moral, social, and political dimensions of classrooms, teaching, and schools. Throughout our course work, we incorporate theories of human development; research and experience-based inquiry; professional ethics; diverse technology; verbal, nonverbal, and media communication; varied formal and informal assessment strate-

gies; instructional opportunities; and ongoing interaction, collaboration, decision making, and reflection.

Following the notion of multiple assessments over time (Vacca & Vacca, 1999), we spent long hours creating documentation of our attention to state goals and standards by generating detailed graphs, figures, and reports, and collecting student portfolios. All took much time away from our real priorities—teaching, research, service, and family commitments. Through these processes, we showed that our critical aims and methods more than met the dominant skills-based, lower-order learning competencies required by the standards.

State Learning Standards, Teacher Certification, and Much More

How Critical Theories Further Standards of Complexity

Kay's Philosophy. My educational philosophy echoes the ideals within the social reconstructionist tradition, which places "education at the center of any movement toward a just society" (Kliebard, 1995, p. 23). Teacher educators must move beyond rhetoric and become active forces for change within their field (Liston & Zeichner, 1991). It is my belief that movement toward a just society can only be accomplished through modeling what that society might look like. Consequently, I strive to use collaborative frameworks that promote more democratic work and learning environments rather than hierarchical, authoritarian frameworks in my classes.

Democratic classrooms invite student involvement in planning the content of instruction, and are places where knowledge is constructed through social interaction, problem solving, and exploration. "By striving to establish a democratic classroom, teachers are opening doors for students to make decisions, share experiences and knowledge, view learning as meaningful and real, and become active and global participants in the community and world" (Sorensen, 1996, p. 104). Democratic pedagogy may be perceived as a fine balance between the capacities and interests of the individual and the context of the social life of the community.

My early educational experiences working with diverse student populations has served to inform my college teaching to stress issues of equality, diversity, and justice in the courses I teach. Democratic education provides a context for exploration of those issues and serves to promote respect for individual choices, opinions, processes, and expression. For me, the importance of democracy in education lies in the creation of classroom environments that become "spheres of freedom" (Greene, 1988) where teachers and students create a community of learning through critical inquiry, discourse, and open perspectives on issues significant to their lives as framed by democratic practices. My classes are designed to create a sense

of community through shared problem-solving and instructional responsibilities. Discourse on theoretical and pedagogical topics is encouraged with the primary focus within this context as the full intellectual growth of all participants. Coursework is based on the premise that if students are to be expected to maintain a democratic way of life, then they must have opportunities, early on, to learn what that way of life means and how one achieves it (Dewey, 1916/1944). I concur with Dewey that teaching is an "intellectual as well as active occupation" (as cited in Tabachnick, Popkewitz, & Zeichner, 1979). Critical analysis and experimentation are necessary to transform teaching toward democratic and emancipatory classrooms and schools.

Ann's Philosophy. My teaching arises through critical theories of multiculturalism, pedagogy, literacy, and media literacy. These frameworks further the complex teaching, assessment, and outcomes the editors stress in this book: awareness of how self, identity, perceptions of others and the world are constructed through cultural influences and institutions; deep analysis of varied texts and situations to understand how they represent/construct the self, power, and social conditions; the assumption that all texts are constructions, and thus open to multiple interpretations from varied cultural stances; making connections among people, concepts and contexts; a shifting of established power relations; and a goal of reflective action, or praxis, leading to social justice and equity.

Critical multiculturalism is concerned "with issues of justice and social change and their relation to the pedagogical. . . . The pedagogical refers to the production of identity—the way we learn to see ourselves in relation to the world" (Kincheloe & Steinberg, 1997, p. 27). A key component of our teacher preparation involves ongoing, deep examinations of one's self in relation to many texts and situations. Research supports this focus; preservice teachers must examine how their past and present experiences shape their identities and beliefs, in order to develop relevant, equitable practice (Britzman, 1991). This goal is particularly important when preparing white individuals to take their places in multicultural classrooms (Bollin & Finkel, 1995; Sleeter, 1993). Our students develop awareness of cultural impacts on their identities and beliefs, as well as fulfill many state standards, by critically examining and generating diverse texts and situations through reading, viewing, writing, and researching in schools.

Critical pedagogy—empowering students through examinations of roles, power, conditions, and institutions in society and education (Giroux, 1988) to promote greater equity and social justice—is a second cornerstone of my teaching. Critical pedagogy enables teachers and students to " formulat[e] . . . competing definitions of the social world that correspond to particular social, political

and economic interests" (Kincheloe & Steinberg, 1997, p. 2). My desired outcome is praxis, "self creative activity through which men and women . . . change (shape) the historical human world and themselves" (Sholle & Denski, 1993, p. 300). Critical pedagogy promotes all these things: the disposition to reflect (Britzman, 1991); the willingness to examine and embrace multiple—and often ambiguous—views of self, others, a text, subject, or situation (Britton, 1985); the shifting of established power roles (Clift, 1991); the critiquing of theory and the translation of it to real-life practice (Rodriguez, 1993); and the acting on newfound insights (Harrington, 1994). We further these aims through reading oppositional texts; discussing student-generated topics in student-led classes; debating; role-playing; engaging in collaborative projects; using peer and self-assessment; keeping ongoing reflective journals; creating practica that enable students to transform new awareness into praxis; writing (in many forms); and promoting intensive student development of curricula that is grounded in explicitly supported, ethical rationales.

Critical literacy in general, and critical media literacy, in particular, promote critical multiculturalism and critical pedagogy (Considine & Haley, 1992; Semali & Watts Pailliotet, 1999). By critical literacy, I mean the notion of empowering students to read, understand, write, reflect, and act justly in the world (Freire, 1970). This reading involves critical "analysis with and across varied symbol systems. . . . Writing means generating texts through a myriad of media forms" (Semali & Watts Pailliotet, 1999, p. 6).

> Critical literacy gives individuals power over their culture and thus empowers them, enabling people to create their own meanings, identities, and to shape and transform the material and social conditions of their culture and society. . . . [C]ritical media literacy is thus part of a process of critical pedagogy that teaches individuals how their culture, society, and polity are structured and work. Critical media pedagogy involves teaching how to activate students and citizens so that they can learn to more actively create their own meanings, lives and society. (Kellner, 1995, p. xv)

In our course, we employ diverse analytic frameworks (Watts Pailliotet, Semali, Rodenberg, Giles, & Macaul, in press), ask rigorous questions (Luke, 1999), and employ varied data like ethnographical research (Beach, in press) to critically examine texts. Students learn multiple ways to create meaning, "read," research, and "write" (Watts Pailliotet, 1998), thus becoming empowered to access, use, and generate myriad resources in the information age. We teach with textbooks, scholarly articles and books, literature, classroom observations, interviews, computers, art, commercials, magazines, music, television, film, videos, newspapers, Web sites, objects

from their own lives, and writing, to name a few.

Theory and Practice in Secondary Education: A Course Description

Objectives and Purposes

"Theory and practice in secondary education" is the first methods course required for secondary teacher candidates. Its objectives further many standards of complexity: (a) to understand and examine who we are (what we believe and do) in terms of past and present cultural experiences; (b) to critique and compare our understandings with other cultural perspectives, contemporary educational theories and issues; (c) to critique, connect, and apply these theories to instructional practice; (d) to learn and implement varied instructional strategies; and (e) to assess their effectiveness and relevance for ourselves, diverse students, and positive teaching and learning outcomes. Ann taught the class in 1998; Kay taught it in 1999.

Learning Experiences and Format

In addition to twice weekly college-based classes, students engaged in weekly teaching and observation practica at local alternative high schools. They worked with diverse students and teachers to examine how cultures and beliefs impacted educational outcomes and conditions; to connect course concepts with real life experiences; and to formulate new teaching identities, roles, theories, and practices based on careful observation, action, and reflection.

In Kay's class, students read *To Teach: The Journey of a Teacher* (Ayers, 1993) and In *Search of Understanding: The Case for Constructivist Classrooms* (Brooks & Brooks, 1993) as the basis for class discussions as well as construction and critique of unit and lesson plans. Additional readings were selected by individual students and were used to enhance discourse on the complexities of teaching. These texts included: *Affirming Diversity: The Sociopolitical Context of Multicultural Education* (Nieto, 1996); *The Reflective Practitioner: How Professionals Think in Action* (Schon, 1983); *Teaching as a Subversive Activity* (Postman & Weingartner, 1964); *Pedagogy of the Oppressed* (Freire, 1970); *Teaching to Transgress* (hooks, 1994); and *The Manufactured Crisis* (Berliner & Biddle, 1995). Students examined and critically analyzed classroom textbooks in their subject matter, district curricular guidelines, and state standards and EALRs in terms of their own educational theories and experiences. Throughout the course, individuals had multiple opportunities to experiment with theoretical constructs and apply new knowledges as they constructed and presented lessons and instructional units.

In Ann's class, students read from *Models of Teaching* (Joyce & Weil, 1996); *Strategies for Effective Teaching*

(Ornstein, 1995); and oppositional texts such as *Pedagogy of the Oppressed* (Freire, 1970), *Teaching to Transgress* (hooks, 1994), *Teaching as a Subversive Activity* (Postman & Weingartner, 1964), *Lives on the Boundary* (Rose, 1989), and *Dialectic of Freedom* (Greene, 1988) in order to construct and critique complex views of teaching. They noted key ideas; critiqued them in terms of their own experiences, beliefs, and practices; contrasted and compared them with the class texts; then incorporated ideas into their teaching theories and practices. Each week, one student microtaught a lesson employing concepts and models covered in readings. Students led discussions to explore pedagogical applications, compare models with ideas in seminal texts, critique relevance to their teaching philosophies and students, and delve into critical implications such as inherent inequities in practices.

Assessment

As Kincheloe advises in the introduction to this book, professors and students utilized "a variety of assessment techniques to better understand the impact of their pedagogy" (p. 68). Course assessments included lengthy professor-written comments on weekly practica and reflections; student-generated rubrics for microteaching; professor-generated rubrics for the ABC's project; peer assessments; student self-assessments in narrative form; student assessments of pupils generated during practica experiences; varied frameworks for media, videotaped teaching, and book critiques; student-generated interview and research questions; and student-generated teaching portfolios. Each week students also anonymously answered four survey questions: What are you learning? What are you doing well? What concerns or conflicts are you having? What suggestions do you have for the course? We read and responded to these each week.

The ABC's Project

Our students also engaged in Schmidt's (1998a, 1998b, 1999) ABC's model of cultural inquiry ("Autobiography, Biography, Cross Cultural Analysis"). This process furthers many standards of complexity. It invites students to explore how varied cultural influences shape their own and others' identities in a series of sustained, guided, and supportive experiences. It stresses connections, embraces differences, and allows for conflicts among people, ideas, and contexts. It has as its goal equitable teaching and humane social relations. It requires sustained inquiry about culturally based beliefs and behaviors through use of multiple texts. Because the process requires critical analysis; complex thinking; in-depth research; and rigorous reading, writing, speaking, listening, viewing, and representing competencies, it also fulfills many EALRs and state teaching competencies. The ABC's semester-long project included:

> a) a detailed autobiography, including key life events related to education, family, religious tradition, recreation and victories and defeats; b) a biography of a person culturally different from the writer drawn from an in-depth unstructured interview . . . ; c) cross cultural analysis of similarities and differences related to life stories and listed in chart format; d) cultural analyses of differences with explanations of personal discomfort and admiration; and e) communication plans for literacy development and classroom teaching/lesson plans. (Schmidt, 1998a, p. 196)

In order to promote "understandings of the complexity of the world" and "contradictions and asymmetries of social, physical, psychological, and educational spheres" (Kincheloe, Introduction, p. 90), we added some components: group analysis of students' cultural artifacts; identification and critique of prior learning experiences; a semester-long, weekly practicum; ongoing reflections about practica and course experiences; oppositional readings of seminal educational texts with traditional methods textbooks; analysis of software, textbooks, and mass media for content and cultural representations or biases; peer, teacher, and student interviews; a student ABC's final project that employed multiple media; graphic organizers; student-led discussions, micro teaches, and critiques of teaching models; final teaching philosophies supported through portfolios; and professional growth plans. With these additions, we furthered our own critical aims as well as many curriculum and teaching competencies outlined in the state EALRs.

Data Collection and Analysis

Ann audiotaped or videotaped about half her classes; we both completed ongoing participant observation field notes (Bogdan & Biklen, 1992) or personal reflections. We collected much student work: analysis of media and cultural artifacts, book reviews, ongoing student class assessments and final course evaluations, weekly practicum responses and class notes, videotaped teaching reflections, self and peer assessments, final teaching philosophies and portfolios, and final ABC's projects.

Our analysis involved reading and coding within each student data set, as well as across sets (Glaser & Strauss, 1967). Our subsequent discussions, as well as the multiple texts and participant viewpoints in data afforded rich, triangulated results (LeCompte & Preissle, 1984). We employed various charts, checklists, and graphs to organize and identify larger themes (Miles & Huberman, 1984). For instance, one theme that emerged from analysis was repeated theory practice connections students made in journals, lesson plans, book reviews, class discussions, microteaches, and ABC's teaching philosophy statements. These data informed us about our teaching and student progress, served as the basis for the results that follow, and pro-

vided documentation to state certification agencies.

Through anecdotes and data, we next share ways our course furthered many standards of complexity.

The Course, ABC's Project, and Standards of Complexity

Teacher and Student Analysis of Cultural Materials

Like the editors of this volume, we ask many questions about culturally constructed texts. One of our earliest ABC's projects was analysis of cultural artifacts. Students first identified nearly fifty cultural influences that impacted their identities and teaching beliefs: e.g., race, class, gender, language, family structure, birth order, geographic location, media exposure, past school experiences, interests, aptitudes, and exceptionalities. We modeled the analytic process by sharing some of our artifacts. Over the summer students collected items that were personally meaningful. They brought huge baskets and bags of belongings to class, and discussed how their books, magazines, photos, journals, toys, household items, clothing, school materials, music, videos, trophies, and awards—among other objects—represented cultural aspects of themselves. We later applied these same analytic processes to textbooks, curriculum guides, instructional materials, and software used in their practica placements as well as to varied mass media, internet, and educational texts.

Accessing Varied Data: Reading and Writing with Narrative, Media, and Technology

We acknowledge and embrace the many information contexts the editors of this encyclopedia identify. We taught with varied data: textbooks, scholarly articles, literature, classroom observations, interviews, computers, art, commercials, music, videos, newspapers, Web sites, software, objects, student writing, syllabi, daily lesson plans, assignment handouts, film and television clips, newspapers, newscasts, and magazine articles.

Our students also accessed and analyzed varied data: cultural artifacts; situational texts in practica; interviews with peers, pupils, administrators, and teachers; textbooks and seminal texts; internet and software; mass media texts; instructional materials; district and state curriculum standards. They generated varied research, lesson plans, ethnographies, material and textual critiques, reflections, graphic organizers, discussions, narratives, art projects, handouts, instructional materials, microteaching sessions, portfolios, and professional growth plans.

In reflections, class sessions, practica, and final teaching statements, all identified use of varied data and texts as ways to further their philosophies and goals: relevance, interest, motivation, critical thinking, expression, creativity, access, enjoyment, and connection.

Their ABC's final projects also employed reading and writing narrative through diverse texts: a video; Web

pages; constructed books that included photos, text, original drawings and poetry, magazine clippings, and (in one case) an accompanying audio cassette of music; a series of box dioramas constructed with advertisements and artifacts; an annotated collage with advertisements, articles, objects, and photographs; a series of themed posters with text, drawings, and photos; a handmade book of pieced fabric with text and photos; a cube diorama with text, photos, and personal artifacts; and annotated posters with original artwork, text, and photographs.

Preparing Teachers for the Information Age

Many data showed that mass media exposure had profound impacts on our preservice teachers' identities, beliefs, and teaching practices. During artifact sharing, all employed numerous videos, CDs, tapes, comics, games, magazines, advertisements, and toys to represent themselves. All also talked at length about values they had learned from mass media. One showed a Barbie doll and advertisements of models; the desire to conform to these images, she asserted, led in large part to her eating disorder. Others used media texts to talk about the difficulty of resisting images and messages about competition and achievement, inclusion and exclusion from social groups, sexism, consumerism, body image, sexuality, gender roles, normative family behaviors or structures, political views, self-esteem, and teaching. Several young women cited treasured storybooks or novels that expanded their perceptions of gender roles and reinforced their burgeoning desires to be strong, capable individuals.

In their autobiographies, many identified technology use and mass media exposure as key cultural influences on their identities. In cultural biographies, several also reported that interview subjects discussed both negative impacts (stereotyping and invisibility of people who looked like them) and positive benefits (one learned English primarily through television watching) of media. It is telling that four individuals in Ann's class chose pseudonyms that referenced popular media: Luke (*Star Wars*); Ally (McBeal); Mad Max; and Lil Warrior ("It's a Xena thing.").

We agree with the editors that "teachers [must] become aware of the cultural pedagogies produced by television, radio, popular music, the Internet," and so on (Kincheloe, Introduction, p. 67). To prepare our future teachers to participate in the Information Age, we stress media literacy skills throughout the course: accessing, analyzing, evaluating, and generating (Hobbs, 1997) many print, mass media, situational, and electronic texts.

Identity

Kincheloe writes, "Knowledge producers, standards writers, teachers, and students perceive the world from a center located within themselves, shaped by the social and cultural context in which they operate, and framed

by languages that contain within them tacit views of the world" (Introduction, pp. 40–41). Research about preservice teachers soundly supports their assertion. Individuals' cultural affiliations and experiences—particularly race, class, and gender—profoundly impact their understandings, beliefs, and teaching behaviors (Bollin & Finkel, 1995; Burbules & Rice, 1991; Ladsen-Billings & Tate, 1995; Sleeter, 1993). Effective preservice education must help students examine tacit beliefs, beginning with their own centers or selves, through prolonged, in-depth, and supported examinations of personal and professional identity (Kea & Bacon, 1999; Mitchell, 1998; Noel, 1995; Watts Pailliotet, 1996). Several studies suggest that for growth to occur, "initial images must be clearly defined and a novice must experience cognitive dissonance and the concomitant mitigation of preexisting images." However, "knowledge acquired during preservice teacher education appears to be superficial and ephemeral" (Kagan, 1992, p. 147). Therefore, we seek to promote thoughtful self-examinations that allow our future teachers to gain awareness and complexity in their worldviews (Britzman, 1991; Morine-Dershimer, 1993).

Students' autobiographies explored multiple cultural influences, with thoughtful and honest analysis about how elements shaped their identities and beliefs. For many, socioeconomic class and their privileged status as students attending an elite college served as a primary source of concern. Economic diversity was often the focus of weekly papers, practica interactions, class discussions, and teaching philosophies. As they grew to understand their cultural situatedness, our students discussed and developed concrete strategies to enable them to connect with their practica students: interpersonal behaviors, classroom materials, questioning techniques, and topical foci of lessons.

All noted cultural influences that were repeated and those missing from their autobiographies. For example, in Bach's final ABC's narrative, a Web page, he represented through graphics, sound, and print how six cultural themes shaped his identity: games, music, movies, and books; family and friends; and religion. He wrote:

> I am beginning to notice what materials I didn't bring. . . . All my games, which reflect family and friends, are individually based. None involve teams. In backgammon, poker and chess you are on your own. There are also a number of cultural groups I see are missing from my project—namely gender. . . . I note my friends are fairly racially diverse. Of my three closest friends, one is white, one is black, and one is Korean. I think my religion may be responsible for this. . . . If I were not Christian I would not have met most of my nonwhite friends. Sexual orientation never came up.

Bach closely examined these gaps and applied them to his emerging teaching identity and practices. He noted his newfound awareness of gender and generated some personal teaching guidelines like "the importance of face to face communication

with every student every day" and "use of inclusive materials," listing examples of popular songs that appealed to diverse pupils and furthered learning about classical music. Another student noted her heightened awareness of cultural differences in the way individuals construct their identity: "I realized that while to me, gender was an important part of my identity, for G. it was not. On the other hand, race and ethnicity, something that I rarely thought about as a member of the majority race, was the primary component of her identity as a Mexican-American." The student then went on to apply this knowledge to her theories and teaching:

> As a teacher, I might emphasize my personal identification as a woman in order to incorporate discussions of gender, but I have to realize other people will not have the same components of their identity (even if they too are women). The components they find to be important parts of themselves—whether race, religion, artistic expression, etc.—should be explored and allowed to have a place in the classroom. Learning is a personal experience for each individual, and I would like to encourage and accept student input and direction in the curriculum to allow for the identities and interests of the students to be reflected in learning.

Complex Thinking and Imaginative Answers

One of the most positive outcomes of the ABC's project was the careful, reflective, and increasingly complex analysis evident across student data. All participants' weekly practica responses grew in length and depth over the semester, moving from a "what" focus (describing merely what they read or observed) to "why" and "how" (discussing cultural conditions that influenced the phenomena, posing multiple alternatives, and suggesting varied solutions or actions). In analysis of textbooks, software, and mass media, their comments and reading responses showed a collective shift from the simplistic to the complex: first merely describing what they observed or criticizing content without support, then considering how different people and cultural groups might interpret texts, and finally posing ways to use them critically in their own classrooms. They also began to connect their own cultural identities with subject matter, realizing that instruction and learning must be situated within the cultural identities of students.

Complex thinking and imaginative answers also emerged in student use of the EALRs. At first, most perceived conflicts between the rigid, lower-order thinking characteristic of many state standards and the types of innovative teaching they envisioned in their own classrooms. They grudgingly noted relevant EALRs on lesson plans, but saw little worth in them. However, their microteaching at semester's end revealed how they had synthesized complex information and developed imaginative answers. Although they continued to fault the EALRs for promoting a minimalist approach to education, they used the

standards as guidelines for integrating a variety of approaches in each lesson they constructed.

One student opened his lesson by writing three relevant state communications learning objectives on the board. His guiding principles, stated in his teaching philosophy, "Creativity, Expression, and Safe Risk Taking" were clearly evident in his innovative use of various props and a series of scaffolded improvisations classmates performed during his acting microteach. He cited Postman's *Teaching as a Subversive Activity* and his "own counter culture culture" as the basis of his philosophy. Another's aims of "art as an essential experience," "accessible art," and "creating a comfortable place for enjoying music" were connected to reading, writing, thinking, and communications competencies. His microteach combined numerous classical and popular works—including jazz, rap, salsa, and rock and roll—in a game show format that required students to read, write, and speak.

These students fulfilled key standards of complexity as they used many resources; thought about them in complex, synthetic, imaginative ways; then created innovative teaching.

Epistemology and Analyzing the Taken-for-Granted

Like Hinchey (1998), who asks preservice teachers to deconstruct notions of "marriage" and "homework," we want our students to critically examine taken-for-granted cultural knowledge and educational epistemology. We subscribe to Banks and Banks's (1997) curriculum model of social action: "In this approach, students identify important social problems and issues, gather pertinent data, clarify their values on the issues, make decisions, and take reflective actions to help resolve the issue or problem" (p. 245).

Like the editors of this volume, our students examine terms such as "intelligence" throughout our program. They research the history, competing definitions, and testing/classroom applications of "intelligence" in the introductory course. In later development and foundations course work, they read and critique competing definitions; interview teachers and students; gain an understanding of the inequitable outcomes of intelligence testing on diverse students by reading case studies and literature; work, observe, and interact in multiple schools; and write ongoing reflections, critiques, and papers.

In the ABC's project, many recalled how they were labeled, sorted, and grouped according to intelligence, and then observed classrooms where tracking occurred as a result of intelligence and other testing. Through role-playing, discussion, personal narratives, and analysis of testing, they began to identify cultural groups who have benefitted or been marginalized, as well as how the concept impacted their own experiences and identities. For many, this was the first time they realized their position of "privilege," both in terms of their race (European-American) and their educational backgrounds. One student remarked, "I

know it is horrible to say, but sometimes I get tired of hearing the gifted whine about how hard it is in 'normal' classrooms. . . . The cultural interview really reminded me that it *was* hard to go through a school system not geared to your abilities." Our students connected abstract ideas of intelligence with their own lives; they saw that intelligence is a social construction that has had profound impacts on their own identities, self conceptions, beliefs, and behaviors; they appreciated ways it has impacted others and created often inequitable social outcomes. As they entered their practica classrooms, they developed and implemented lesson plans, grouping strategies, ways of communicating effectively with diverse students, and multiple assessments that were more inclusive and equitable.

Empowerment and Changing Power Relations

Like Kincheloe, we envision a "bottom-up reform fueled by empowered scholar-teachers" (Introduction, p. 63). For us, the concept of power is "never the property of an individual; it belongs to a group and remains in existence only so long as the group keeps together" (Arendt, as cited in Greene, 1988, p. 134). Much of our data demonstrated that these preservice teachers assumed new roles, shifting from passive student identities to more empowered professional ones. This made possible the creation of a "caring" community, where each member expanded his/her perspective to that of the other members (Noddings, 1984).

In developing community within the class, students began to take ownership for the direction of the discussion and to hold each other accountable. Our tapes and notes reveal profound shifts in student-initiated questions, student-to-teacher talk ratios, and student willingness to engage or even conflict with the professor and peers, as the semester progressed. Lesson plans and microteaches demonstrated shifts from teacher-directed to student-centered learning experiences. Acknowledgment that we all could learn from each other created space for multiple perspectives in our discourse (Lather, 1991). Students articulated opinions drawn from their own experiences as they formulated learning objectives and conducted classes. Several advocated for students and others engaged practica teachers in respectful, informed disagreements. Final teaching philosophies also revealed empowerment, in clearly articulated, supported statements of purpose.

Asking Critical and Rigorous Questions

We agree with Kincheloe that critical conversations "about how the world works" (Introduction, p. 46) are central to teacher preparation. We are known for asking uncomfortable, hard, critical questions in our courses. Rigorous questioning and critical analysis were also evident and enforced by students in weekly discussions. The following exchange shows their insistence that they and their classmates engage in deep, critical thinking—in-

tegrating multiple viewpoints, experiences, and ideas, then translating their understandings into action. Mad Max had just modeled procedures in a sample mastery teaching lesson. He then asked for responses.

Ally: Ok, so you've showed us the steps and what it's all about but who cares? I mean, let's go deeper here. I want to know how I can apply this. Like who wins and loses [in this model]? I can see some real problems here, like in terms of equity. . . . Does anybody else want to get into this?

Bach: This certainly isn't a very progressive model, in terms of culture. . . . E. D. Hirsch would like this model—it's real "just sit down and get the facts."

Lil Warrior: *My* facts.

Bach: My dead white dude facts.

Ally: (laughing) My dead white European dude patriarchal, gender-biased facts!

Bach: This so wouldn't fly with my ABC's person. She had this really terrible, abusive home life and that was a huge impact on her, she talked about how when teachers wanted that lockstep teaching, she would just curl up and sort of withdraw.

Luke: I'll take a crack. This week I had this guy [names practicum student]. He's totally smart and totally unmotivated. I bet you he's had a lot of this kind of teaching and it just doesn't cut it for him. I think a big part of the problem is, here I am, this guy from [the college] telling him all these facts in some nice little tidy list and telling him he has to show me he knows this stuff and he could care less. He probably sees me as some rich dork who's just telling him what to do—and he totally resists, just checks out.

Lil Warrior: So what did you do? I get that too—like I so want to connect with you, why won't you engage me?

Luke: Well you can't teach in a vacuum. I basically threw my lesson plan out the window and started talking to him. I find out he's really into architecture and building stuff, so I think, ok! We cruised over to the computer and got on the web and started looking for buildings. We started finding all these cool sites and he's digging the buildings and I'm talking away, slipping in some factual stuff and pretty soon he's into it. He's asking me questions and taking notes and grabbing the mouse. We totally went over [the allotted] time. . . . And to get back to this mastery teaching business, there's no way I'd connect with that kid if I was all, "Here's the reading and answer these questions and don't leave your seat til you score at least an 80 percent."

Mad Max: Ok, you guys nabbed me. I think it [model] could be good efficiency wise—like, that state exam is coming up and you gotta produce.

Bach: Or you have a wild weekend and just whip out those ready-made plans.

Mad Max: (laughing). So it's not going to cut it with kids who, for whatever

> reason, aren't into the drill. . . . So we have to find ways to subvert Mastery teaching [reference to his chosen educational text]. . . . I think we agree there's [sic] some equity issues we'd have to consider. Like maybe we could add another model. (Audio tape 11/5/98)

Students then identified and critiqued several other teaching methods that would enable them to better connect with diverse practica students. They often engaged in rigorous conversations such as this, and held their peers to high degrees of critical inquiry and thought. We also found many theory practice connections, evidence of praxis, and implementation of critical principles covered in the class throughout much of their work.

Theory into Praxis

In the introduction, Kincheloe asserts that "the connection between the research dimension . . . and its professional-education apparatus has been severed" (p. 61). Much scholarship supports the presence of these rifts between theory and practice (Britzman, 1991; Harrington, 1994; Rodriguez, 1993), and conflicts between school and university (Lemlech & Hertzog-Foliart, 1993; Fountain & Evans, 1994). We seek to help students connect experiences and translate them into praxis.

As our students understood who they were, began to connect cultural experiences to their teaching theories, and to critique these theories in terms of multiple viewpoints, they also began to transform their teaching practices. This was evident across student data. Their early lesson plans and reflections offered little or no rationales, and relied solely on two teaching models—traditional teacher-directed, conduit lessons they had observed throughout their past educations or forms of cooperative learning (favored by members of our department). As time went on, they developed clear guiding principles that reflected their own philosophies—grounded in critical principles—and began to discuss their students' needs, finally implementing corresponding practices in their lessons. In their final microteaches and teaching philosophies, all students stated foundational concepts that guided their teaching; offered explicit rationales based on their ABC's projects, course experiences, and readings; then translated them to pedagogical actions.

Ally drew from bell hooks for much of her philosophy: "teaching as excitement and intellectual pursuit. . . . Mind body spirit connection. . . ." Her weekly lesson plans, microteach, and teaching philosophy furthered student excitement and holistic teaching through student options, uses of multiple texts (journals, newspapers, biographies, mass media, and selected readings), the writing of essays that furthered critical thinking and expression, and the use of varied assessment methods.

Lil Warrior stated she was "greatly" influenced by her ABC's narrative, her insights gained through the ABC's in-

terview, my own modeling as a teacher, and her reading of Maxine Greene. Her personal teaching theory was highly humane and emancipatory. She wrote:

> Teaching is all about human beings . . . and helping students discover their unique potential . . . cooperation and trust are key values in my personal life, as well as in my teaching philosophy . . . Greene is a powerfully inspiring woman . . . her belief in the interconnectedness of human relationships as a source of personal strength as well as an agent for producing a society of more action and greater freedom is one I support. . . . Freedom through reflection, openness and seeking connection with our world allows us the possibility of greatness. (Final teaching statement)

Lil Warrior's aims were manifested in her frequent praise, encouragement, and questioning of peers during classes, her repeated writing about forming meaningful relationships with practica students, and her frequent use of student journals and paired activities in lessons to promote student potential, closeness, and trust.

Luke's final teaching philosophy was entitled "Relevance, Variety, Relevance, Variety." He supported his ideas with examples from readings, practica experiences, peer discussion comments, his ABC's autobiography, and interviews. During his microteaching, he implemented his goals in a lesson about Indian boarding schools. He employed much guided, higher-order questioning; used multiple resources—photos, film clips, readings, posters, old novels, textbooks, maps, and study guides—and used lecture, paired activities, group discussion, and individual work during the hour. May discovered the power of action research as a tool for connecting theory and practice based on her reading of Schön's (1983) *Reflective Practitioner*. Throughout her autobiography and final ABC analysis, she discussed the importance of connections: between beliefs and practice, between student and teacher with the goal of creating community in the classroom, and between culture and learning. She wrote:

> Schon criticized the separation of theory and concrete practice, helping me to realize that the connection of my personal education theories to my teaching reality requires the recognition of my culture as the basis for my theories and ways of viewing reality. Everything I have discussed creates the image of one big interrelated system with components—culture, personal beliefs, theories, practice that mutually affect each other.

During her microteaching, this awareness of connections was evident in the structuring (connectedness) of her learning activities and the opportunities she provided for students to connect and share ideas.

These preservice teachers bridged educational gulfs. They articulated synthetic and sophisticated personal theories, matched their ideas to students' viewpoints, needs, and class-

room realities, and then implemented teaching that furthered critical principles and standards of complexity.

Change and Flexibility

Many standards of complexity imply openness and sensitivity to varied viewpoints, willingness to change, and flexibility in thought and action. These preservice teachers' increased awareness of cultural differences and experiences with diverse students during their practica moved them away from the naive perception that all students enter the classroom with the "same stuff" and the subsequent belief that "if you treat them all the same they will all flourish." Their understandings of the oppression of white privilege as a dominant societal influence caused them to shift their initial educational goals from assimilationist to additive ones (Howard, 1999; McIntosh, 1989).

In an early reflection, students listed what they wanted to accomplish as teachers, then fit their goals into one of several multicultural and critical curriculum frameworks. Several made comments that one goal, or their main task, was to help students "fit," "feel comfortable," "belong," or "learn skills and knowledge they need to succeed" in schools and society. Over the semester, we continually discussed culturally based assumptions underlying these goals—how they were tacitly assuming all students would "fit" into their conceptions and worldviews about the natures of education and social success. By the semester's end, all teaching philosophies and microteaches—by nature of their guiding concepts, varied materials, methods, and adaptations—reflected a more inclusive, additive view of teaching, students, and culture.

Standards of Complexity in Preservice Preparation

We believe that courses like the ones described here and projects like the ABC's further state mandates, fulfill teaching competencies, *and* achieve many standards of complexity. These include responding to changing social conditions; furthering educational reform through rigorous preservice and liberal arts education; embracing the complex natures of children, teachers, classrooms, human language, knowledge, meaning making, and teaching; resisting mandated, simplified, "techniquist" views of teaching; understanding our own and others' contexts for producing knowledge; analyzing cultural materials, identity, epistemology, and power relations; asking hard questions; using narrative and technology; accessing, critiquing, and employing many data forms in the emerging information age to arrive at imaginative answers; and creating a learning community as a framework for active, involved learning and teaching. Our students assumed many of the roles the editors of this book identify as necessary to educational scholarship in the new information order: generators of knowledge, users of many data forms, empowered thinkers, "researchers, diagnosticians,

contextual analysts, [and] curriculum developers" (Introduction, p. 63). In time, we are confident they will also become expert teachers.

The editors call for "the creation of a new workplace designed to facilitate teacher scholarly and professional development that is continuing, research based, and collaborative" (Introduction, p. 64). We agree. Our students became the kinds of mindful, skilled, and sensitive people who will envision and realize these goals. The active exploration and varied research processes throughout the ABC's project demanded a high degree of academic rigor, and increased our students' personal awareness of how their own cultural identity affected their educational beliefs and practices. The sharing of each person's cultural autobiography helped them develop understandings of and appreciation for each other. It provided a more complex understanding of the meaning of "belonging" and creating community. As one student noted, "It is important that learning be personal in meaning, but also social and individualized, that teaching and learning recognizes our differences . . . and that the student and the teacher work together to create an educational environment conducive to the learning of all" (final teaching statement).

These future teachers have embraced standards of complexity in their personal and professional lives. We have little doubt that they will create the types of school workplaces, communities, scholarly work, and professional collaborations the editors identify.

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ALTERNATIVES TO STANDARDIZED TESTS

Bob Peterson and Monty Neill

There's only one thing worse than requiring students to reduce all learning to a single "correct" answer, and that is reducing assessment and accountability to a single standardized test.

Critics of standardized tests are often asked, "What's your alternative?" It's a legitimate—and important—question. Parents and community members have the right to know how well their children are learning.

Unfortunately, in part due to rhetoric that equates high standards with standardized tests, many parents believe that standardized tests will give them the answer. At the same time, parents are often the first to understand that the complexity of their child cannot be captured by a test score.

At issue is how to create alternatives to standardized tests that will inform parents and community members about how well the schools are doing and whether their children are learning what they need to know—that is, how to create an alternative approach to accountability. Teachers and parents also need to learn about and promote alternatives to "high-stakes" tests, the name given when a single exam determines if a child is promoted, or graduates from high school, or gets into college.

Standardized tests are just one type of assessment, although they often get the most publicity. It's also important to recognize that teachers assess students regularly as part of their ongoing teaching. The challenge is to match assessment that is integrated into classroom instruction, and is focused primarily on helping individual children, with assessment that provides schoolwide and districtwide information being demanded by local and state officials or various community forces.

One of the first steps toward rethinking assessments is to ask, "What is the purpose of the assessment?" and, "Is this purpose worthy or meaningful?" Answering these questions

Hallmarks of Assessment

Alternatives to high-stakes, standardized tests are being implemented across the country. While the alternatives vary in focus and scope, they generally share the following principles:

- Support improved learning. The assessment is designed to provide feedback that helps students improve their learning.
- Help teachers teach better. Good assessment provides an array of information that teachers can use to improve their teaching practices and help ensure student learning.
- Are integrated with the curriculum and instruction. Assessment works best when it flows naturally from, and is part of, student work—i.e., a science experiment that becomes part of the student portfolio.
- Are classroom based. Most of the information for the assessment is based on classroom work done by students over a period of time.
- Use a variety of measures. Good assessment does not rely on a single yardstick but compiles data based on both individual students' learning plus schoolwide data such as attendance and graduation rates.
- Involve educators, parents, and the broader community. Improved success for students relies on a positive collaboration among the various forces necessary for school reform to work.
- Don't straight-jacket the curriculum. Good assessment procedures provide for flexibility and don't dominate the curriculum.

means addressing what is important for students to learn, how we help them learn, and how we know what they have learned.

Too often, the rationale for standardized testing appears overly punitive: "We're going to get these kids and schools to perform better—or else." Such an approach forgets that assessment should serve one primary purpose: to improve student learning. The goal is not to flunk kids, not to wave fingers at lousy teachers, not to make bold pronouncements that will be remembered at election time, not to give kids more of the same even though it didn't work the first time—but to provide information to help the student learn better.

Assessment serves other purposes as well. Community members may want data to see if schools are providing equal opportunity to all students. Policy makers might want to know the effectiveness of various programs. Districts and state legislatures often use tests to hold schools accountable for how well they are spending taxpayers' money. Schools might also use assessment as a way to report to parents, or summarize and certify a student's achievement. Finally, districts might use changes in assessment policy to help transform the curriculum.

Depending on the purpose, different forms of assessment might be used. For example, an assessment designed to evaluate how well a school, overall, is teaching its students to read should not be used to decide whether a particular student should or should not be promoted to fourth grade. Furthermore, any assessment should ultimately serve, and not undercut, the primary goal of helping the student.

Alternatives to standardized testing are in use in both the United States and other industrialized countries—alternatives that range from student portfolios, to districtwide "proficiencies," to outside review teams that evaluate a school. There is growing evidence that these measures do a better job of showing how well students and schools are performing.

The biggest drawback to most of these alternatives is that they challenge this country's predominant approach to thinking and learning—that is, that we can only truly know something if it can be statistically and "objectively" determined and analyzed. History has unfortunately shown that such an approach has been used not just to predict, but to control the world and those who live in it. For many, the consequences are harmful, not beneficial.

Alternative assessments, on the other hand, require diversity in thinking about what is the purpose of knowledge and, indeed, even what constitutes knowledge. To challenge statistical ways of knowing is to challenge the status quo and its tendency to marginalize and describe as abnormal those who do not neatly fit into a statistical box. Alternative assessments mean alternative voices, perspectives, and actions. This is a vitally important reason why they should be embraced as an important part of accountability.

Other obstacles exist. Alternative assessments are new and, like any innovation, challenge those who prefer to do things the way they've always done them. It takes not only time but energy to reeducate teachers, parents, and students in new forms of assessments. Moreover, such assessments cost more because they require more sophisticated teaching, staff development, and scoring. Decent assessment can't be done cheaply, any more than can decent education.

Nor are alternative assessments a magic bullet. Teachers and parents need to be aware of the strengths and weaknesses of any approach, and how to use it appropriately.

Following is a description of some of the most common forms of alternative assessments.

Portfolio-Based Assessment

One of the more promising forms of assessment is what is known as "portfolio-based assessment." The approaches to portfolios vary considerably, but they all rest on records kept by the teacher and on collections of the student's work, called the "student portfolio." During the school year, teachers and students gather work that shows student progress and achievement in various subjects such as English or science. Students are usually

encouraged to reflect on the work that has been selected. Such reflection helps students think not only about what they have learned, but about their own learning processes, all of which contributes to the overall goal of improving student learning.

In some approaches, at the end of a marking period the teacher examines the portfolio and evaluates the work based on a scoring guide. Sometimes students or their peers also score their work. The teacher ultimately records a score on what is sometimes called a "learning record," attaching evidence such as a writing sample or write-up of a science experiment. This approach is useful for the teacher and parent in determining how well a student is progressing. But, through what is known as "random sampling," it also can be the basis for improved professional development and for schoolwide and districtwide accountability.

Under "random sampling," a number of the learning records and student portfolios are selected randomly from each classroom. An independent group—of teachers from other schools, members of the community, or a combination of both—reviews the records and portfolios. If there is a big difference between the conclusions of the independent readers and the classroom teacher, a third group might be called in or a larger sample might be taken from the classroom, in order to determine how well a particular teacher consistently applies the agreed-upon assessment guidelines.

Approaches of this sort have been developed in Britain, Australia, and the United States, particularly in Vermont, which has instituted statewide assessment programs in math and writing based on student portfolios. Projects such as the Learning Record, based in California, and the Work Sampling System, based in Ann Arbor, are other examples.

This classroom-based approach has several advantages. For example, the evaluation is based on a wide range of student work done over a long period of time rather than on a single, paper-and-pencil test taken over a few hours. Further, the approach encourages schools and districts to invest in the professional development of the teachers and outside evaluators, and it pushes teachers to reflect more consistently on the quality of student work in their classrooms.

One of the criticisms of this approach is that it works best when there are quality teachers. But such criticism needs to take into account that this classroom approach, over time, can encourage collaboration among teachers and improve their work. If done properly, this approach has teachers regularly talking about students' work and allows the more skilled teachers to help the less experienced teachers. Such portfolio discussions will inevitably include not only how to evaluate student work but the nature of the work that is going on in particular classrooms and strategies to get students to do better work. This approach can benefit a weak teacher, certainly more than standardized tools do.

Another criticism, especially when teachers have little control over what

types of materials are to be included in the portfolio, is that the portfolio requirements can "hijack" the curriculum and overly dominate what is taught. For instance, if a district decides that the English portfolio for eighth graders needs to have an example of a business letter and a five-paragraph essay, the teacher may focus so much on those requirements that there is little time for other important topics such as poetry, creative writing, or literary analysis. One solution is to require a wide range of types of writing in a writing portfolio, as Vermont does. Many educators also note that it is better to have a "portfolio-driven curriculum," which is based on real student work, than a curriculum shaped by standardized tests and their reliance on random bits of memorized data and procedures.

Another problem with portfolios is logistics. Where does a high school English teacher store over 100 portfolios? How does an elementary school maintain portfolios as students move up in grades? How does the issue of student mobility influence this kind of record keeping? One creative solution is to videotape portfolios, another is to save the information digitally in a computer. Though methods vary, teachers and schools are overcoming these problems.

A fourth criticism of the portfolio approach is that it relies too much on the individual judgment of teachers and opens the door to overly subjective evaluation. This concern has been raised most directly where teachers may not be sensitive to the needs and skills of students of color, or non-English speakers, or immigrants. Clearly this is a serious issue. At the same time, it is a problem that pervades all forms of assessment. Who, for example, chooses the questions on standardized tests? Rarely is it immigrants, or non-English speakers, or educators of color.

If the outside evaluators are sensitive to this potential problem, portfolio-based assessment can be used to identify teachers who are subjectively giving lower evaluations to particular groups of students or teachers whose pedagogical weaknesses lead them to have students focus on mindless worksheets rather than engaging projects.

Overall, we have found that portfolios are central to high-quality schooling. They can foster collaboration among teachers, focus attention on getting students to do quality work, and provide data to the community on how well a school is performing.

Performance Exams

Some states and districts have adopted what are called performance examinations. These are tests given to all students, based on students "performing" a certain task, such as writing an essay, conducting a science experiment, or doing an oral presentation that is videotaped.

The Milwaukee Public Schools (MPS) have done extensive work on developing such performance exams in the areas of writing, science, math, visual arts, and oral communications. For example, fourth or fifth graders

must perform a three-to-five minute oral presentation. In writing, fourth, fifth, eighth, eleventh, and twelfth graders all have to write and revise an essay over a period of two days, based on a districtwide prompt that changes from year to year and covers different genres, from imaginary writing to narrative essays to expository essays. These essays are then judged independently and anonymously by teachers from the district, using a scale of one to four. Two teachers read each essay, and the final score is based on the sum of the two readers. To reduce subjectivity, if there is a difference of more than one point in the two readers' evaluations, a third reader scores the paper.

Some districts also use these performance exams as a way to check how well classroom teachers are scoring their student portfolios. If large numbers of students are doing well on the performance exams yet score poorly on the student portfolios, or vice versa, it sends a signal that follow-up needs to occur.

These performance exams have the advantage over standardized tests in that they "drive the curriculum" in a relatively progressive way. In Milwaukee, the assessments have encouraged teachers to focus on actual student writing rather than fill-in-the-blank work sheets. They have led to more hands-on science experiments where students actually learn the scientific process and how to reflect on and analyze data, rather than merely answer questions at the end of a textbook chapter. The oral presentations have been a useful way to get students actively involved, rather than merely listening to lectures by the teacher; they also force teachers to pay attention to oral communication skills, which cannot be tested with a paper-and-pencil exam. The actual performance assessments, once they are scored, can become part of student portfolios.

Teachers who help write the performance assessment tasks (or prompts) learn a lot about how to develop more interesting and academically valuable projects for their students.

Performance exams are one form of "performance assessments," which most often take the form of projects ranging from laboratory experiments to group activities to exhibitions (described later) that are done as part of classroom work. (Sometimes the term includes portfolios as well.) Using performance exams can encourage teachers to use a wider range of activities in the classroom, which can enrich instruction, deepen learning, and provide detailed assessment information.

Performance exams have not been used more widely in part because they take considerable time, both for the classroom teacher and the district. It takes time, expertise, and ultimately money to develop the prompts and score the assessments, to say nothing of training teachers in activity-based teaching methods necessary for such performance assessments.

Some very good teachers, particularly those who have spent years developing a cohesive curriculum for their classroom, may find that the exams disrupt the flow of classroom

work, although this shouldn't be as much the case if the assessments are carefully aligned with good instructional practices.

Finally, another problem is that performance exams, as with any kind of assessment, can tempt teachers to "teach to the test." Even in performance assessment, the emphasis must remain on higher-level thinking skills instead of on recall and memorization.

In a December 2000 opinion piece in the *New York Times*, Harvard professor Howard Gardner cautioned, "It might now seem far better to teach students how to write a personal essay than to simply ask them multiple-choice questions about a passage. Yet it is possible even with essay tests to teach students to do well through mimicry rather than through general writing skills. . . . Educators and parents should value the development of knowledge and skills that go beyond a single test. That is, high performance should be an incidental result of strong general preparation."

As with using random sampling of student portfolios, sampling can also be used with performance exams. The National Assessment of Educational Progress (NAEP), a federal agency that monitors student achievement, uses such a technique. When the NAEP reports, for example, on the progress of U.S. fourth graders the data is based on a sample of students. Some states, such as Maryland, are also adopting this approach. The Maryland State Performance Assessment Program (MSPAP) covers writing, reading, math, science, and social studies; it also includes interdisciplinary exams. Each student is given an exam in only one subject area. This does not give an overall assessment of each student, but for the school it gives a score that covers all subject areas and provides comprehensive data.

We believe that performance assessments—including performance exams—can be useful, especially when they are integrated into the ongoing curriculum. They can suffer, however, when they are isolated from daily classroom life and imposed from above.

Proficiency Exit Standards

The assessment known as "proficiency exit standards" combines the approaches of portfolio-based assessment and performance exams; it also sometimes includes standardized tests.

Under this approach, students have to meet certain standards in order to be promoted to the next grade or to graduate from high school. In Milwaukee, for example, the district has developed proficiencies that students need to meet in order to complete eighth grade and graduate from high school. The proficiency standards focus on four broad areas—math, science, communication, and a research project—and are generally considered more rigorous than most standardized exams.

Students are given several ways to show "proficiency" in each of these areas—through portfolios, classroom projects such as science projects, performance exams, standardized test

scores, and research papers. The district took this approach because it did not want to rely on any single assessment to determine whether a student could be promoted or graduate.

In one example of how reliance on standardized tests is undercutting alternative assessment, MPS recently moved to give increased weight to standardized test scores, allowing high school students to meet certain proficiencies by merely passing the standardized Wisconsin Student Assessment System tests.

Exhibitions

Exhibitions of student work are another useful assessment. Perhaps the most common exhibition is also one of the oldest—the science fair. As with any student work, the strength of the approach rests on providing ways for all students to succeed. Everyone knows stories of parents who do the science fair project for their kid, building elaborate electrical engines or wondrous weather kits. Some schools try to get around this problem by having students work on the projects at school.

At Central Park East in New York City, exhibitions are used along with portfolios. In order to graduate, students have to demonstrate competencies in twelve areas of learning and present their portfolio work to a committee of adults—somewhat similar to the oral exams common for postgraduate degrees.

At La Escuela Fratney in Milwaukee, at the end of fifth grade (before they leave for middle school), students select some of their work from throughout the year and invite family and community members to an open exhibition. One project that figures prominently is the student-made book, in which students reflect on what they've learned throughout elementary school. The book also includes examples of work from their entire time at Fratney, which have been collected as part of their portfolios.

Parent Conferences and Input

One important reason for assessment is to let parents know how well their child is progressing. This purpose cannot be separated from the larger issue of communication between school and home. A number of schools are experimenting with assessment programs that are based on a process of two-way communication.

Some schools, for instance, have lengthy conferences with parents before their child even enters kindergarten, both explaining the schools' programs and getting input from the family on the child's strengths and weaknesses. Other schools have adapted their parent-teacher conferences so that they do a better job of letting parents and teachers talk together about the child's progress. In order for such an approach to work, parent-teacher conferences need to go beyond the "five minutes per teacher" syndrome that is particularly common in middle and high schools—where teachers haul out the grade book and talk, and parents listen.

In this approach, schools need to ensure that they give parents a clear idea of the school's curriculum and a general view of child development. This is particularly important in early elementary grades, where children develop at different rates and ages and children cannot be pigeonholed into a single set of expectations. Likewise, in adolescence, teachers and parents need to communicate about developmental issues and how they may be affecting student performance.

Some schools involve students in the conferences. Students are asked to present work from their portfolios, reflect on what they have learned, and help figure out where they have made good progress and where they still need work.

To work best, such an approach needs to be part of a comprehensive effort to ensure that parents know they can raise concerns at any point during the school year, not just at conference time. Soliciting and encouraging such parental input is not easy but is essential if there is to be a true collaboration between home and school. This issue is, in the final analysis, grounded in difficult questions of the power imbalances in most schools, particularly along lines of race and class. Some schools have taken preliminary steps in trying to address this problem by hiring a parent organizer/liaison, or having a parent center, or forming a parent/teacher curriculum committee, or ensuring that principals welcome parental input rather than view it as yet another chore. In some districts, such as Rochester, New York, parents are involved in teacher evaluation; how well a teacher communicates with parents is specified as part of the evaluation.

School Report Cards

Just as parents need to know how well their child is doing, communities have the right to know how well entire schools are performing. Sometimes, this happens in a rather distorted way: the local newspaper ranks schools based on a single standardized test or battery of tests. Beyond the cold, hard number, there is little analysis of how or why some schools are performing differently—or even if the test is a valid measure of student achievement. Equally troubling, a school's performance often tells more about the income level of the students' families than the quality of teaching and learning at the school.

In the last few years, a growing number of schools have issued "school report cards"—in fact, over two-thirds of states now require such report cards, and many are posted on Web sites.

School report cards generally go beyond a listing of test scores, although that data is included. Other information in the report, depending on the state or district, can include attendance, average grade point, the number of advanced placement courses, discipline issues such as suspension rates, parental involvement, types of assessment (such as whether performance exams are required in certain subjects) and their results,

school mission and governance structure, and so forth. The information is sometimes broken down by race, gender, socioeconomic status, first language, and other important categories, in order to show how well schools are serving students from diverse backgrounds.

While such report cards are superior to a simple listing of test scores, there are important cautions: in particular, data can be omitted or manipulated. Some high schools, for example, have a policy of dropping students from a class if they have more than three unexcused absences. As a result, the grade point average in that class can be artificially high because only a select group of students is included. Also, if the primary data on student learning is from standardized test scores, as is often the case, then parents will have too little information.

Overall, school report cards need to reflect a much richer view of student learning, such as can be found in portfolios and exhibitions. In fact, rather than just a "report card," some schools have begun to develop school-level portfolios. Other schools and outside people can evaluate the school by looking at portfolios and by visiting the school.

School Quality Review Teams

Because student success is intimately related to the culture of learning in an entire school, one valuable assessor, known as the "School Quality Review Team," focuses on schoolwide issues.

Teams of trained educators and community members visit schools, usually for up to a week. The teams observe classrooms, follow students, examine the curriculum, and interview teachers. Based on their observations they write up a formal report, with specific recommendations for improvement.

This approach, modeled on a century-old system in England, has been adopted in a few states, including New York and Rhode Island. A growing number of schools in Boston use review teams.

To be most effective, the team's recommendations need to be distributed to and acted upon by both teachers and parents—which often requires additional time and resources. Another shortcoming in this approach is that the team often reviews a school based on its self-described mission; if the mission is weak or inadequate, this might not be noted in the final report.

It Won't Be Easy

Adopting these alternatives is not easy—old ways of doing things are always more comfortable and familiar. Here are some of the most common pitfalls:

Assuming one can muster the political clout to change the growing emphasis on high-stakes standardized tests, most alternatives take time to develop. Because most are implemented while existing standardized tests continue, teachers are being asked to do more and more assessing—but not given any more time to do so. One more task is added to an already filled

day. Sometimes that, in and of itself, causes teacher opposition.

If such assessments are to provide a true alternative, it's essential that a broad array of parents and staff be involved. Otherwise, both parents and teachers feel that, once again, someone else is telling them how to raise their child or how to teach.

Many of these alternative assessments are new to just about everyone involved: policy makers, students, teachers, and parents. There need to be thorough discussions of the pros and cons of various assessments and a clear understanding of the purpose of any particular assessment. While conservatives often decry the "status quo" mentality of teachers and schools, on the testing issue it is the conservatives who are refusing to "think outside the box" and are relying on traditional, and flawed, methods of standardized testing.

Such assessments take more work, more time, and more resources.

Any assessment is prone to problems of inequity, inadequacy, and subjectivity. Recognizing, and counteracting, these problems is essential.

Finally, it cannot be stated too often: the primary purpose of assessment is to improve the quality of teaching and to help students learn better. If the focus is not on student learning, it's misplaced.

District and state officials have the right and responsibility to require schools to provide evidence that all students are learning, but such requirements must not be allowed to control all aspects of schooling. Students and teachers need time to explore their interests, to pursue matters in depth, to develop qualities of thinking and working. In fact, a really good accountability and assessment system will tell parents and the public that these, too, are part of education.

Notes

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TEXAS ACCOUNTABILITY SYSTEM FOR EDUCATOR PREPARATION

Standards, Data Analysis, and Continuous Improvement

Trinidad San Miguel

Texas, the Lone Star State, is the first state in the nation to implement an accountability system for entities that prepare educators. This accountability system is called the Accountability System for Educator Preparation (ASEP) and became effective September 1, 1998. When added to the already existing public school accountability system, this implementation in effect also gave Texas the only prekindergarten–16 accountability system in the country (San Miguel, Garza, & Gibbs, 2000). The public school accountability system is administered by the Texas Education Agency and ASEP is administered by the State Board for Educator Certification (SBEC).

Accountability in public education has been the focus of an enormous amount of current research (Bryk & Hermanson, 1993; Cohen, 1988; Darling-Hammond, 1991; Glickman, 1990; Harrington-Lueker, 1990; Hill & Bonan, 1991; San Miguel, 1996). In Texas, the arms of accountability have embraced educator preparation programs located in institutions of higher education (IHE) and alternative certification programs (IHE, regional education service centers, and school districts).

In the educational setting, accountability refers to holding an educational entity responsible for student performance. There are two main accountability mechanisms advocated by leading educators and researchers (Brown, 1991; Burstein, Oakes, and Guiton, 1992; Bryk and Hermanson, 1993; Caldwell and Spinks, 1992; Kaagen and Conley, 1989; Odden, 1990; Richards, 1988; Wise, 1979; Darling-Hammond, 1991; Harrington-Leuker, 1990; Porter, 1993; Odden 1992).

They include educational indicators and school delivery systems. The following information describes each accountability mechanism and its purpose.

Educational Indicators

Organizations such as the U.S. Department of Education, the National Science Foundation, the Council of Chief State School Officers (CCSSO), the National Research Council of the National Academy of Sciences, and the RAND Corporation, as well as nearly all state governments, are currently involved in developing and improving educational indicators (Bryk & Hermanson, 1993). Smith (1988) underscores that hardly an educational group or agency at the national or state level has not become involved in the business of educational indicators during the 1980s. Burstein, Oakes, and Guiton (1992) and Brown (1991) document that this surge of interest in the United States can be traced at least as far back as a 1983 report, *A Nation at Risk*, which was compiled by the Carnegie Task Force on Teaching as a Profession. That report triggered broad public concern about education, and it initiated a strong push for closer monitoring of the system, its schools, and its personnel.

According to Bryk and Hermanson (1993), Brown (1991), and Caldwell and Spinks (1992), an educational indicator is a statistic that conveys information about a valued condition of the educational system; and the units evaluated can be at the following levels: school, district, state, and country. To evaluate educational indicator information, however, requires comparison (Bryk and Hermanson, 1993). There are several obvious alternatives:

- Each unit can be compared with itself over time (i.e., the development block)
- Comparisons can be made among units (i.e., the horse race model)
- Comparisons can be made with externally defined standards (i.e., the educational goals model)
- Bryk and Hermanson (1993) found that combinations of these three alternatives are also common

Kaagen and Conley (1989) report that indicator systems have the potential to improve policy making and describe indicators as diagnostic tools that would offer "a unique opportunity for state policymakers to affect local education practice in a most efficient way" (p. 12) and that the main purpose of these systems is to "assess direction, mission, and strategy" (p. 9). Odden (1990) describes indicator systems as a means for providing the policy community with "policy levers they can pull in order to improve student performance" (p. 24).

In addition to these policy-making uses, Richards (1988) argues indicators are also being advocated as a means for state and local governments to better manage the array of schools

under their purview. In his view, indicators would constitute a management system with sanctions and incentives for individual teachers and schools directly tied to indicator performance. In such contexts, these performance indicators become a mechanized accountability system to be used by system administrators to foster enhanced school operations.

In summary, Bryk and Hermanson (1993) note that indicators are promoted as efficacious instruments with which to monitor an educational system, evaluate its programs, diagnose its troubles, guide policy formulation, and hold school personnel accountable for the results. Indicator data are seen as the newest tool for legislators and administrators to construct rational policies and better manage the numerous sub-units under their control. As Foster (1991) suggests, policy makers are reluctant to entrust the future of schools to teachers and administrators without some clear method of assessing the effectiveness of their work.

School Delivery System

Darling-Hammond (1992) and Lewis (1992) name the school delivery system as another mechanism for accountability. "School delivery" system means the standards necessary to ensure that each student in a school has a fair opportunity to achieve the knowledge and skills set out in the National Content Standards and Workforce Readiness Standards. The motivation for creating school delivery standards is primarily for purposes of school accountability (Darling-Hammond, 1992). It would be unfair to hold students to new and rigorous standards of achievement without holding schools accountable for giving students a fair chance at meeting those standards.

The history of school delivery standards is brief, but they resulted in 1991 from three task forces supported by the National Council on Education Standards and Testing (Lewis, 1992). Members of the task forces argued for a level playing field for students in any system of national standards and tests. They said, "It is only fair for students to have equal opportunities to learn if standards and assessments are to have high stakes attached" (p. 100). Lewis (1992) comments that talk of a level playing field would inevitably lead to a debate over equalizing resources: equity. In essence, school delivery standards would include these premises: (1) the school has formally adopted a curriculum that is in line with national standards, (2) the curriculum is being taught in classrooms, (3) teachers understand the curriculum and are able to teach it, (4) teachers have access to curricular materials necessary to master the standards, (5) the school has instructional methods and policies in place to promote mastery by all students (including no tracking) (6) administrators are well prepared, and (7) the schools have the libraries and laboratories necessary for learning.

At the present time, the development and use of school delivery stan-

dards is left up to the individual states. Lewis (1992) states that school delivery standards could become a tool for making schools and systems accountable and could make good on the promise for the high-quality education for all students.

Much of the aforementioned information addresses its application to public schools, PK-12. In the Texas case, accountability has been extended to include educator preparation programs, and they are now held accountable for the performance of their prospective educators (teachers and administrators) on the state examinations called the Examination for the Certification of Educators in Texas (ExCET), Texas Oral Proficiency Test (TOPT), Texas Assessment of Sign Communication (TASC), and TASC-American Sign Language (TASC-ASL). These state examinations and other functions are the responsibility of the SBEC.

The Texas State Board for Educator Certification

The SBEC was created in 1995 by the 74th Legislature to govern the standards of the education profession, and its mission is to "ensure the highest level of educator preparation and practice to achieve student excellence." The fifteen-member appointed board oversees all aspects of public school educator certification, continuing education, and the standards of conduct. The certification board is guided by the philosophy that educators will create higher standards for preparation, practice, and conduct than others outside the profession would, and that educators will rigorously uphold these standards (SBEC, 1998).

The certification board is organized into four broad areas: educator preparation, assessment and accountability, certification, and professional discipline.

Educator Preparation

In the area of educator preparation, the certification board works primarily with entities preparing educators for certification in Texas. The work includes guidance in program development, approval, and implementation. The board currently serves seventy institutions of higher education with approved educator preparation programs, twenty-eight alternative teacher certification programs, and six alternative administrator certification programs. The board also advises entities interested in initiating educator preparation programs. The certification board is involved in reviewing program approval procedures to streamline the process while maintaining the integrity of program review.

Assessment

State law requires that individuals pass examinations in the areas in which they seek certification. The certification board manages the development and administration of the ExCET, TOPT, TASC, and TASC-ASL test-

ing programs. Individuals typically take the ExCET professional development test and additional tests in the academic disciplines in which they seek certification after completing a program of preparation for the specific certificate(s). These tests assess the prospective educator's knowledge of academic content and teaching, including understanding of learners.

Test development and review of current tests is ongoing. Passing standards are reviewed periodically and recommendations from these reviews are presented to the board. The board sets the minimum score required to pass each certification test. Assessment professionals work with school district and educator preparation program staff to identify committee members for these activities.

Accountability

The certification board monitors the quality of educator preparation at university and alternative certification programs through the ASEP. The certification board uses assessment data (ExCET, TOPT, TASC, and TASC-ASL) and, in the future, the performance of beginning teachers to determine program quality and issue annual accreditation reports according to minimum acceptable performance levels established by the board.

Certification

The certification board is responsible for ensuring that educators are qualified to serve in the Texas public school system through the following:

- Issuing educator credentials to applicants who have completed the appropriate degree and have a standard credential from another state
- Issuing educator credentials to applicants who have completed requirements for certification at a Texas educator preparation program
- Certifying applicants adding certification based on completion of the appropriate examination(s)
- Issuing paraprofessional certificates to educational aides and secretaries
- Assisting education service center personnel in authorizing emergency and nonrenewable permits for school districts and reviewing and approving hardship permits
- Analyzing and disseminating data on certificate and permit activity
- Coordinating applicant criminal investigations
- Advising school district staff on assignment criteria for hiring appropriately certified individuals

Professional Discipline

The certification board enforces standards of conduct for educators of the state. This office reviews any and all complaints of misconduct. If a formal complaint for sanctions is filed against an educator, the educator will be given

an opportunity to be heard. Formal hearings involving educator misconduct are open to the public and a copy of the final decision on such cases can be obtained (SBEC, 2000).

Accountability System for Educator Preparation

Recently, the quality of academic preparation has been criticized nationally by the media. Many in higher education agree and believe that the connection between institutions of higher education and public schools needs to be addressed. According to Jennings (1989) much of the criticism hails from groups affiliated with institutions of higher education. Furthermore, John Goodlad in *Teachers for Our Nation's Schools* (1990) has led the call for " simultaneous renewal" in K-12 education and in universities and colleges, particularly in those purporting to prepare educators.

Authorized in 1995 with passage of Senate Bill 1, the intent of the ASEP "is to assure that educator preparation programs are held accountable for the readiness for certification of educators completing the programs. An educator preparation program is defined as an entity approved by the SBEC to recommend candidates for certification in one or more certification fields." Details of the ASEP are located at http://www.sbec.state.tx.us/geninfo/rules/ch229.pdf (SBEC, 1999a).

Entities meeting the above definition include universities, colleges, public school districts, and regional education service centers offering alternative certification programs. All entities are responsible for meeting accountability standards. When the educator preparation accountability system was implemented in September 1998, entities received one of three ratings: "Accredited," "Accredited-Under Review" or "Not Accredited." Entities initiating educator preparation programs are rated "Accredited-Preliminary Status," a rating that may be maintained for three years, after which time the entity is to be held accountable to ASEP standards. While the entity is rated "Accredited-Preliminary Status," it may recommend candidates for certification (San Miguel, Garza, & Gibbs, 2000).

ASEP requires performance levels to be met for seven demographic groups (all students, African-American, Hispanic, white, other, male, and female). For educator preparation entities, the stakes are high. For example, an entity failing to meet performance standards three consecutive years will be rated "Not Accredited." Texas Administrative Code Chapter 229 allows the SBEC executive director to appoint an oversight team to make recommendations and provide assistance to an entity that is "Accredited-Under Review." If by September 1 of the third year after being designated "Accredited-Under Review" the entity has not achieved the acceptable performance standards, SBEC's executive director may "request that the Board limit the entity to only prepar-

ing candidates for certification in specified fields and collaborate with another entity to fully manage the program (SBEC, 1999a)."

Cumulative pass rate was defined as "the number of examinations passed (by the previous-year's first-time takers) within the two-year academic period divided by the number of previous-year's first time tests taken. (This pass rate reflects performance on the last time a test was taken within the two academic years.)" If a candidate passed the test outside the two-year academic window referenced above, the candidate's score did not impact the entity for accountability purposes. Entities rated "Accredited-Under Review" were allowed to request reconsideration of that rating by the SBEC if the rating were based upon having fewer than ten students in a demographic group (SBEC, 1999a). These provisions resulted in sixteen of eighty-seven educator preparation programs being rated "Accredited-Under Review" (SBEC, 1999b).

Based upon feedback from the field, modifications to ASEP were instituted by SBEC. For example, the 1999 ratings were based on a candidate's performances during the first academic year the examination was administered, rather than on the candidate's first attempt. Likewise, the field contended that small data samples should not be considered reliable indicators of an educator preparation program's effectiveness. Consequently, the number of students in a given demographic group necessary for that group's performance to affect the accountability rating was increased from ten to thirty (San Miguel, Garza, & Gibbs, 2000).

Still another change resulting from feedback from the field was occasioned by the public relations difficulty of an entity being initially identified as "Accredited-Under Review" but then being rated "Accredited" due to reconsideration of the rating being based on having a small number of candidates in a demographic group. In the second year of its implementation, therefore, ASEP allowed entities to review their rating and request reconsideration prior to the rating's being made public (San Miguel, Garza, & Gibbs, 2000).

The release of the 1999 accountability ratings reflected performances of eighty-seven educator preparation programs, ten of which were rated "Accredited-Under Review," with nine of these ten entities rated "Accredited-Under Review" for the second consecutive year (SBEC, 1999c). One entity did not receive a rating because no students had been enrolled in its program for the past two years. Caution was encouraged in comparing the 1998 and 1999 ASEP ratings because, as noted above, the criteria for those ratings had changed. A list of entities rated "Accredited" and "Accredited-Under Review" for 1999 is available at http://www.sbec.state.tx.us/edprep/accred.pdf and http://www.sbec.state.tx.us/edprep/accredur.pdf.

The 1999 accountability ratings also reflected the first time SBEC is-

sued commendations to educator preparation programs. For example, commendations were issued to forty-four programs producing a diverse population of candidates in comparison to state or region diversity, and to programs producing teachers in high-need subjects. Commendations for diversity were awarded to twenty-eight entities, while twenty entities received commendations for high-need areas. Four entities received commendations in both categories (SBEC, 1999d).

As the changes in ASEP from 1998 to 1999 suggest, the accountability system is a fluid mechanism. For example, assessment of classroom teachers' performance will be piloted in the 1999–2000 school year, with this process to be a component of the accountability system. This process will be formative for the teachers themselves but summative for their educator preparation program. Likewise, the pass rates required for meeting accreditation standards will increase, effective September 2002, from 70 percent to 75 percent for the first-year pass rate and from 80 percent to 85 percent for the cumulative pass rate. This raising of standards suggests a number of implications for educator preparation entities' approaches in terms of identification of instructor/student needs and intervention strategies to address those needs (San Miguel, Garza, Gibbs, & 2000).

Under present provisions, sanctions will continue to play a role as standards are raised. For example, effective September 1, 2002, "If the performances of all students within a certification field fails to meet requirements . . . for three consecutive academic years, the entity may no longer recommend persons for certification in that field" (SBEC, 1999a). Being unable to certify candidates in a field(s) could negatively affect enrollment and, by extension, have substantial revenue consequences.

These twin elements of continuous improvement and sanctions have engendered considerable debate between the regulatory and practitioner elements in the Lone Star State, with some feeling they have prodded entities into undertaking improvement efforts that would otherwise not have been attempted. A conflicting viewpoint suggests that continually "raising the bar" holds educators to a standard not found in other professions such as the legal or medical fields and that sanctions are counterproductive in a time of significant teacher shortages (San Miguel, Garza, & Gibbs, 2000).

ASEP Data Reports and Continuous Improvement

There are five opportunities for candidates to take the ExCETs: October, December, February, April, and July. The Texas Oral Proficiency Test (TOPT) and the Texas Assessment of Sign Communication—American Sign Language exams are also offered three times and two times respectively during the academic year. After each administration of the ExCET, usually

within about four to five weeks, each entity receives their candidates' results via the Internet and can generate different reports with the E-Z ASEP software, which can assist the entity in identifying strengths and areas of concern. These reports include the Entity Accreditation Status Report, ExCET Results by Test, ExCET Average Scores by Domain: First Year Takers-Passed Tests Only, First Year Takers-Failed Tests Only, Examinee Performance Summary Report, Student Test History, and Report of Examinee Performance by Competency or Objective. Soon, entities will be able to receive and generate these reports on-line via the SBEC Web site.

Entity Accreditation Status Report (Table 1)

For discussion purposes, the 1998–1999 statewide results of the State Board for Educator Certification Accreditation State Totals will be used as an example of an individual educator preparation accreditation rating. In other words, the performance of all educator preparation entities from 1996–1998 is averaged and gives the state an accredited rating rather than an individual entity. The following discussion will analyze the report as if it were for a particular institution (San Miguel, Garza & Gibbs, 2000).

Upon examining the first-time pass rates for 1998–1999, the entity meets accreditation status. Even though the African-American group does not meet the 80 percent passing standard in the cumulative pass rate, it does meet standards in the first-time pass rates. The rule reads, "For an entity to be 'accredited' to prepare educators, performance must be as follows for each demographic group (all students, African-American, Hispanic, white, other, male, female): (A) acceptable pass rates for all tests taken for the first time during the academic year prior to the issuance of the accreditation rating, or (B) acceptable cumulative pass rates for all tests taken for the two years prior to the issuance of the accreditation rating" (SBEC, 1999a).

The data indicate the wide achievement gap between the African-American, Hispanic, and other demographic groups and the white demographic group for first-year pass rates for 1998–1999. The data also reveal an increase in performance over time as indicated by the first-year pass rates for 1997–1998 and the cumulative pass rates for 1997–1999. These data reflect the same cohort of candidates that took an exam(s) for the first time during the 1997–1998 academic year and their passing rate over a two-year period. This report can inform the entity of achievement gaps between/among demographic groups, amount of increase in the passing rates of a cohort over a two-year period, and the entity's accreditation rating.

ExCET Results by Test (Table 2)

Presently, there are approximately sixty-five state exams. This report shows information for two different

cohorts: (1) the number of first-year tests taken, the number of first-year tests passed, and first-year pass rate percent for the cohort that took each state exam for the first time during the 1998–1999 academic year, and (2) the number of cumulative tests taken, the number of cumulative tests passed, and the cumulative pass rate percent for the cohort that took each state exam for the first time during the 1997–1998 academic year and tracks their progress over a two-year period. This information is presented for the seven demographic groups that entities are held accountable for. Again, this report can inform the entity of achievement gaps between/among demographic groups, and the amount of increase in the passing rates of a cohort over a two-year period for each of the state exams.

Table 2 reveals information for two academic years, 09/01/1997–08/31/1999 (1997–1998 and 1998–1999). Professional Development (Elementary) is state exam 002, and the three lines for first year refer to data generated by first-year tests takers for the academic year 1998–1999. The three lines for "Cumulative" refer to data generated by first-year tests takers for the academic year 1997–1998 and their subsequent data over a two-year period that includes 1997–1999.

ExCET Average Scores by Domain (Tables 3–8)

Entities can also generate several types of reports of the ExCET average scores by domain: (1) First Year Takers (1997–1998)—Passed Tests Only (Table 3), (2) First Year Takers (1998–1999)—Passed Tests Only (Table 4), (3) First Year Takers (1997–1999)—Passed Tests Only, (4) First Year Takers (1997–1998)—Failed Tests Only (Table 5), (5) First Year Takers (1998–1999)—Failed Tests Only (Table 6), (6) First Year Takers (1997–1999)—Failed Tests Only. The software is also capable of generating reports that combine the First Year Takers—Passed and Failed Tests by one year or two years.

For discussion purposes, four tables (3–6) are shown to explain the information contained. On the left-hand side, Table 3 shows each state exam and the number and name of the domains it tests. The Elementary Professional Development Exam (002) has three domains: (1) Understanding Learners, (2) Enhancing Student Achievement, and (3) Understanding the Teaching Environment. On the right-hand side, entities are informed of the number of first-year tests taken, and the average score and the median score of the first-year tests taken. By comparing the data results from 1997–1998 to the results from 1998–1999, personnel can determine several issues: how candidates perform on each domain each year, whether candidates that pass the state exam are scoring just above the 70 percent passing threshold or are performing well (in the 80 to 90 percent range), and of the candidates that failed the state exam, are they near the 70 percent level or are they far from the passing score. These data results can be used

to determine curriculum alignment between course objectives and state exam competencies, and to guide decisions regarding course content.

Examinee Performance Summary Report (Table 9)

This report informs the entity the number of times a student has taken any state exam, the test date, eligibility (no longer in effect), whether the student passed or failed, score on the total test, and score in each sub-area or domain. It is useful in monitoring students' scores by state exam over a two-year period, especially if the student is not successful.

Student Test History (Table 10)

Depending on the areas a candidate is seeking certification in, he/she will have to take several different state exams. This report shows all the state exams a candidate has taken over a two-year period, how many times each was taken, the total score, score by domain, and whether the candidate passed or failed. It is useful in conferencing with individual candidates and informing them of their strengths and weaknesses.

Report of Examinee Performance by Competency or Objective (Tables 11 and 12)

The Table 11 report provides an entity with an alphabetical list of students by test. The sample provided in Table 11 is for Principal Exam. This report shows the number of students that took the exam, their Social Security numbers, and data information by competency or objective. In the sample provided, six proficiencies are tested. The number of items included in each proficiency is also shown, then the number of correct items each student answered by proficiency. This report is provided after each administration and can assist entities to identify strengths and areas of concern, as well as to counsel students.

Table 12 shows the proficiencies for the Principal Exam, the number of items included in the exam for each of the proficiencies, and an average score for each proficiency based on the number of students that took the exam. Again, entities can use this report to identify strengths and areas of concern for the department to review and make modifications to course content.

Is Anyone Recognizing Texas?

Nine states, including Texas, made the Thomas B. Fordham Foundation's honor roll, earning a B or better, according to the leading conservative think tank that focuses on education. Texas was one of only two states to receive an A based on the average in four categories: A for subject mastery—to what extent teachers know the subjects they teach; A for the multiple pathways—the various ways teachers become certified; B for autonomy—how much control local campuses have over personnel; and A for accountability—holding schools

and their staffs responsible for student learning. According to the foundation's report, "Texas earns top honors for its state-of-the-art teacher quality system" (Association of Texas Professional Educators, 2000).

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STANDARDS FOR TEXAS SCHOOL BOARD MEMBERS

Accountability through Continuing Education

Sandra Lowery

Since the early 1980s, Texas school districts have regularly implemented reform measures for the purpose of improving student performance. The steadily increasing student performance standards have been accompanied by accountability for student performance, fiscal responsibility, and a greater degree of parental and community participation in decision making.

Two decades of reform legislation are also reflected in the changing roles and responsibilities of superintendents and school boards. These changes have come from legislation mandating a governance structure for Texas public schools and clearly outlining the superintendent–school board relationship, board powers and responsibilities, and standards for school board member continuing education. This governance structure has been developed and implemented so that leadership teams, composed of board members and superintendents, can provide leadership for educational programs and services, thereby ensuring equity and excellence in the performance of all students. Such governance structure, with board members knowing and understanding their roles, can provide guidance and support to the school district (Smoley, 1999). The public education system provides the overall structure for Texas public school districts.

Texas Public Education System

The Texas public education system is governed by federal laws and regulations, laws adopted by the Texas legislature, and rules and policies implemented by the state board of education, the Texas Education Agency, and the commissioner of edu-

cation. There are currently 1,044 independent school districts serving 3,740,260 students in 254 counties in Texas (Texas Association of School Boards [TASB], 2000).

The state board of education is a fifteen-member body elected from legislatively drawn districts across the state to provide leadership and adopt rules and policies to implement legislative requirements for public education. State board members are elected to staggered, four-year terms with the fifteen state board of education boundaries redrawn after each U.S. census. The governor, with members of the senate, appoints the state board of education chair (TASB, 2000).

The Texas Education Agency (TEA), headquartered in Austin, Texas, is the state agency that serves as the administrative unit for Texas's public education system. The Texas Education Agency is responsible for implementing public education policies established by the state legislature, the state board of education, and the commissioner of education. TEA is managed by the commissioner of education. The agency also provides curriculum and technical assistance, accredits school districts, operates research and information programs, monitors federal and state guideline compliance, and distributes state and federal funds to school districts (TASB, 2000).

Effective leadership and governance of a school district requires the school board and superintendent to work together and sustain an effective partnership. While each has separate roles and responsibilities, each is dependent on the other for success in their respective roles.

Local School Boards

School board members serve as advocates for students, protecting each child's opportunity to maximize his or her potential. Trustees offer vision, knowledge, leadership, and dedication for the common good (Crow, 2000). School districts, governed by locally elected school boards, are political subdivisions carrying out a state function. School board members, elected from and representing their local communities, are entrusted with one of the most important responsibilities assigned to any citizen—that of policy making and promoting educational excellence for their local school district (Walter, 1999). The basic function of a school board is to provide local citizen control over education at a point close to the parent and child. Most school boards in Texas are composed of seven members.

According to the Texas Education Code (TEC) §11.159, board members must be registered voters, at least eighteen years of age. Board elections may be held by position or place, by single-member district or at large. The form is determined by the local board, laws applicable to the district, and/or special court order. School board elections must be held either on the first Saturday or the first Tuesday after the first Monday in November. Generally, school board members serve three-year, staggered terms so that, with rare

exceptions, the entire board is never up for election at the same time.

All powers and duties not specifically delegated by laws to the Texas Education Agency or the state board of education are reserved for local school boards, as outlined in the Texas Education Code, §11.159. School trustees may act only as a board and have the legal power and duty to do, among other tasks, the following:

- Govern and oversee the management of the district's public schools
- Adopt rules, regulations, and bylaws
- Approve a district-developed plan for site-based decision making and provide for its implementation
- Levy and collect taxes, and issue bonds
- Select tax officials, as appropriate for the district's need
- Prepare, adopt, and file a budget for each fiscal year
- File appropriate reports of disbursements and receipts
- Have district fiscal accounts audited at district expense by a Texas certified or public accountant following the close of each fiscal year
- Publish an annual report describing the district's educational performance, including campus performance objectives and the progress of each campus toward those objectives
- Receive bequests and donations or other monies or funds coming into its hands in the name of the district
- Canvass elections results
- Acquire and hold real and personal property in the name of the district
- Adopt personnel policies
- Sue and be sued in the name of the district
- Sell minerals in land belong to the district
- Hold all rights and titles to school property owned by the district, whether real or personal
- Exercise the right of eminent domain to acquire property
- Authorize the sale of any property, other than minerals, held in trust for school purposes
- Employ, retain, contract with, or compensate a licensed real estate broker or salesperson for assistance in the acquisition or sale of real property (TEC, § 11.159)

The primary jobs of any Texas school board are ensuring that a shared vision is in place to guide education; providing structure for accomplishment of that vision through adopting policies, goals, and budgets; hiring a superintendent; measuring how well the vision is being accomplished; and communicating with the community to build support for the vision. In order to accomplish these functions, board responsibilities must be clearly differentiated from those of the superintendent (Carver, 2000).

While boards have responsibility for governing and overseeing the management of the school district, su-

perintendents are charged with the responsibility of administering all functions of the district (Lowery, Zachary, & McNaughten, 1998). The following examples define some of the significant differences between the responsibilities of the board and the superintendent (Texas Association of School Boards, 1997).

Administration. The board hires a superintendent and delegates responsibility for administrative functions. The superintendent is the chief administrative employee of the district and is responsible for managing the district's day-to-day operations.

Policy Making. The board adopts policies for governance of the school district. The superintendent is responsible for designing and implementing procedures to carry out the adopted board policies, assisting the board in the development and evaluation of policies, ensuring the dissemination of district policies, and maintaining the official copy of the district's policy manual.

Hiring and Evaluating Personnel. The board employs professional personnel, such as teachers and principals, upon recommendations of the superintendent and reviews and acts on other personnel recommendations from the superintendent. The superintendent recommends personnel to be hired, is responsible for performance evaluations, and makes recommendations for renewal or nonrenewal of employment contracts to the board. The board evaluates one individual, the superintendent.

Program Evaluation. The board approves courses to be offered and requires periodic reports on the status of the educational program offered by the district, making revisions in policy and reallocating resources as needed. The superintendent serves as the school system's educational leader and submits to the board reports on the curriculum, keeping the board informed about school programs.

Planning/Goals. The board establishes educational goals for the district based on the input of school and community members, and through planning activities such as goal setting, strategic planning, and district-level decision making. The superintendent makes recommendations to the board concerning the development and implementation of programs, and provides progress reports on the educational goals approved by the board.

Budget. The board communicates the district's priorities to the superintendent through identified goals, reviews the budget submitted by the superintendent, makes necessary revisions, adopts the budget and sets tax rates. By statute, the board president functions as the district's budget officer and ensures that a budget is prepared in accordance with state requirements. This duty is fulfilled by the superintendent on behalf of the board president. The superintendent prepares the budget, recommends the budget to the board, makes revisions as requested by the board, and administers the budget adopted by the board.

Facilities Planning. The school board plans and provides resources for facilities after considering the recommendations of the superintendent and delegates supervision of the building program to the superintendent. The superintendent interprets the needs of the school system to the board and supervises building projects.

Community Relations. The board adopts a program of school-community relations and remains responsive to the community through such processes as site-based decision making. The superintendent recommends and implements a program of school-community relations and keeps the community informed about district policies, programs, and procedures.

Accountability. The school board establishes direction, sets goals and objectives, and affirms accountability measures (student performance on statewide tests, local achievement tests, portfolios, performance evaluations, and so forth). The superintendent's responsibility is to ensure that the curriculum is integrated and aligned with the direction set by the board and anchored in the needs and abilities of students (TASB, 1997).

To effectively meet the challenges of public school education, superintendents and school boards must function together as leadership teams. The Framework for School Board Development has been adopted by the state board of education to provide critical areas of development for Texas school boards (19 Texas Administrative Code [TAC], Chap. 61).

Framework for School Board Development

A Framework of Governance Leadership, adopted by the state board of education (SBOE), must be used in structuring continuing education for school board members (19 TAC, Chap. 61). Board members are held responsible for development standards based upon components of this framework of governance leadership.

Each leadership team must make an annual assessment of their development needs as a corporate body, and individually, to gain an understanding of the vision, structure, accountability, advocacy, and unity needed to provide educational programs and services to achieve state and district goals for student performance (SBOE, 1996). These five major areas of responsibility for school boards constitute the framework for school board development:

Vision. The board ensures creation of a shared vision that promotes enhanced student achievement. On behalf of, and with extensive participation by the community, the board envisions the community's education. The board:

- Keeps the district focus on the educational welfare of all children
- Adopts a shared vision based on community beliefs to guide local education
- Ensures that the vision supports the state's mission, objectives,

and goals for education established by law
- Ensures that the district vision expresses the present and future needs of the children and community
- Demonstrates its commitment to the vision by using the vision to guide all board deliberations, decisions, and actions

Structure. The board provides guidance and direction for accomplishing the vision. In order to achieve its vision, the board establishes a structure and creates an environment designed to ensure that all students have the opportunity to attain their maximum potential through a sound organizational framework. The board:

- Recognizes the respective roles of the legislature, state board of education, the Texas Education Agency, and local boards of trustees in the governance of the public schools
- Fulfills the statutory duties of the local board of trustees and upholds all laws, rules, ethical procedures, and court orders pertaining to schools and school employees
- Focuses its actions on policy making, planning, and evaluation
- Adopts a planning and decision-making process consistent with state statute that uses participation, information, research, and evaluation to help achieve the district's vision
- Ensures that the district planning and decision-making process enables all segments of the community, parents, and professional staff to contribute meaningfully to achieving the district's vision
- Develops and adopts policies that provide guidance for accomplishing the district's vision, mission, and goals
- Adopts goals, approves student performance objectives, and establishes policies that provide a well-balanced curriculum resulting in improved student learning
- Approves goals, policies, and programs that ensure a safe and disciplined environment conducive to learning
- Oversees the management of the district by employing a superintendent and evaluating the superintendent's performance in providing education leadership, managing daily operations, and performing all duties assigned by law
- Adopts policies and standards for hiring, assigning, appraising, and compensating school district personnel in compliance with state laws and rules

Accountability. Because the board is accountable to the local community, it causes the continuous assessment of all conditions affecting education. The board measures and communicates how well the vision is being accomplished by:

- Ensuring progress toward achievement of district goals through a systematic, timely, and comprehensive review of reports prepared by or at the direction of the superintendent
- Monitoring the effectiveness and efficiency of instructional programs by reviewing reports prepared by or at the direction of the superintendent and directing the superintendent to make modifications that promote maximum achievement for all students
- Ensuring that appropriate assessments are used to measure achievement of all students
- Reporting district progress to parents and community in compliance with state laws and regulations
- Reviewing district policies for effective support of the district's vision, mission, and goals
- Evaluating the superintendent's performance annually in compliance with state laws and regulations
- Annually evaluating its own performance in fulfilling its duties and responsibilities, and in working with the superintendent as a team

Advocacy. The board serves as education's key advocate on behalf of students and their schools in the community in order to advance the community's vision for its schools, pursue its goals, encourage progress, energize systemic change, and deal with the needs of children in a diversified society. In order to accomplish this, the board:

- Demonstrates its commitment to the shared vision, mission, and goals by clearly communicating them to the superintendent, staff, and community
- Ensures an effective two-way communication system between the district and its students, employees, the media, and the community
- Builds partnerships with community, business, and governmental leaders to influence and expand educational opportunities and meet the needs of students
- Supports children by establishing partnerships between and among the district, parents, business leaders, and other community members as an integral part of the district's educational program
- Leads in recognizing the achievements of students, staff, and others in education
- Promotes school board service as a meaningful way to make long-term contributions to the local community and society

Unity. The board works with the superintendent to lead the district toward the vision by doing the following:

- Developing skills in teamwork, problem solving, and decision making

- Establishing and following local policies, procedures, and ethical standards for governing the conduct and operations of the board
- Understanding and adhering to laws and local policies regarding the board's responsibility to set policy and the superintendent's responsibility to manage the school district and direct employees in district and campus matters
- Recognizing the leadership role of the board president and adhering to law and local policies regarding the duties and responsibilities of the board president and other officers
- Adopting and adhering to established policies and procedures for receiving and addressing ideas and concerns from students, employees, and the community
- Making decisions as a whole only at properly called meetings and recognizing that individual members have no authority to take individual action in policy or district and/or campus matters
- Supporting decisions of the majority after honoring the right of individual members to express opposing viewpoints and vote their convictions (SBOE, 1996)

Continuing Education for Board Members

Continuing education, based upon the Framework for School Board Development (SBOE, 1996), is required under the Texas Education Code and applies to each member of an independent school district board of trustees. The continuing education requirement consists of orientation sessions, an annual team-building session with the board and superintendent, and specified hours of continuing education based on identified needs. The superintendent's participation in team-building sessions as part of the continuing education for board members represents one component of the superintendent's ongoing professional development. Continuing education providers include any of the twenty education service centers or another registered provider who has been approved by the Texas Education Agency (19 TAC, Chap. 61).

Three different types, or tiers, of continuing education are required. Tier one includes orientation to the local district and orientation to the laws on Texas school governance. The local orientation has been required since 1985 and is usually conducted by the superintendent. The other orientation, dealing specifically with the laws on school governance, was mandated in 1997. The laws on school governance orientation must be provided by any one of the twenty Regional Education Service Centers and must be completed within the first year of school board service (19 TAC, Chap. 61).

Tier two continuing development consists of a team-building session designed to enhance the effectiveness of the board-superintendent team. This is an annual requirement that includes an assessment of the continuing edu-

cation needs of the board-superintendent team and of the individual board members, who may have different levels of experience and expertise. The assessment must be based on the board responsibilities outlined in the Framework for School Board Development. Skills in teamwork, problem solving, and decision making are frequently included and are identified as continuing education needs through the assessment. In addition to individual commitments to follow laws, regulations, and policies, team members are expected to work within their respective roles. Team members are also trained to carry out their responsibilities in manners consistent with the vision, goals, and objectives of their school districts (19 TAC, Chap. 61).

Problem solving requires trust, confidence, and respect for the views of the members of the leadership team. Adequate information must be provided to board members by the administration, with supporting data or explanation in support of the superintendent's recommendation (Royer, 1996).

The principles emphasized in effective teamwork and problem solving are also taught to strengthen decision-making skills. Board members are taught that effective decision making includes asking appropriate questions and articulating their views. Ample time should be allocated in order for the administration to share information with the board and to respond to questions, concerns, and opposing views. This professional development stresses that once the board has made its decision, all board members and the superintendent, as part of the leadership team, are obligated to support the decision of the majority of the board.

Those areas of the document in which individual board members or the board as a whole need additional information or education should be the basis for the training received in tier three.

In addition to the orientations and the team-building session, each board member must receive additional hours of continuing education in the areas of need identified in tier two. This additional training, identified as tier-three training, must consist of ten hours of continuing education during the first year of board service. In all subsequent years of service, a board member must receive at least five hours of continuing education in identified areas of need. Topics frequently included at this level of training are board member ethics, effective meeting management, communicating with the community, budget planning, fiscal issues, superintendent evaluation, and school law.

Board presidents must devote at least a portion of their tier-three continuing education to programs that address one or more aspects of the job of board president.

Although the state has not provided sanctions for board members who fail to comply with the standards and meet continuing education requirements, the vast majority of board members do meet the expectations. State board of education rules specify

that the hours of continuing education credit earned by each board member be read aloud annually in open session of a board meeting.

Effective Governance

Effective leadership and governance of a school district requires the school board and superintendent to develop and sustain an effective partnership (Danzberger, 1994). The purpose of standards and continuing education for board members is to strengthen the leadership team of eight. Goodman, Fulbright, and Zimmerman (1997) have noted that effective board members and effective superintendents who understand and respect each other's roles, responsibilities, and authority are more likely to achieve high student performance and success in their school districts. One aspect of effective governance is a strong relationship between the board and the superintendent (Edwards, 2000).

This relationship has evolved from a history and a legal framework that have moved through the agrarian society and the industrial revolution models to new levels of accountability. Greater levels of lay participation and decentralization are also changes that have served to reshape the board-superintendent team concept.

A successful working relationship between the board and the superintendent does not just happen, it must be cultivated. The National School Boards Association (1995) has noted that success of any school district in fulfilling its mission to educate and prepare children depends on teamwork between the board and superintendent. This teamwork must be founded on trust and respect for each other and the responsibilities that each has in managing and overseeing the management of the school district (Basom, Young, & Adams, 1999). This teamwork includes staying within the parameters of state law, state board of education and Texas Education Agency regulations, local board policy, and the general legal structure.

In addition to the commitment of time, energy, and attention demanded of the superintendent and the individual members of the board, those school district leaders must remain committed to fostering and developing the relationship among them that allows the school district to succeed. The building blocks for a successful team relationship include, but are not limited to, communication, education, awareness, attitude, and flexibility (Rickabaugh & Kremer, 1997). Effective governance, the work of a successful board-superintendent team, has been referred to as collaboration on behalf of children.

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A CRISIS IN HIGHER EDUCATION

The Danger of State-Mandated Assessment

Sharon Spall

In Texas, a state agency called the Higher Education Coordinating Board oversees higher education, and through the State Board for Educator Certification (SBEC), directs the professional certification process. Colleges of education within universities must meet standards based on the testing of students completing educator preparation programs. The State Board for Educator Certification manages the summative examination and grants certification upon passing the Examination for the Certification of Educators in Texas (ExCET). In 1986, state law required successful completion of tests to show that all persons entering public schools had knowledge and skills necessary to support student achievement. From that time forward, every person in teacher education was required to take at least two ExCET tests: one in the teaching field and one in professional education. ExCET exams also had to be passed by persons wanting to become principals and superintendents.

The testing agency, SBEC, publishes the test results, sending them to students and to universities. After taking the exam, students are notified of passing or failing. Colleges of education receive the same information, and the college is also rated according to the number of students passing and failing. Presently, the test data are analyzed according to ethnic groups. If one ethnic group consistently fails the exam below a set standard, the college of education preparation program for educators is rated "under review." Such a rating means that an official state monitor would be appointed to oversee the certification program, and if the "under review" rating continues, the college of education would no longer provide preparation for certification programs for educators.

Within such a context of state accountability for educator preparation

programs, the faculties and administrators in colleges of education in Texas become focused on the outcomes of programs. This may sound reasonable, but, in fact, when outcomes become the only measure of program success, and when outcomes are measured with only one form of assessment, the evaluation of a program is far from accurate. From my view as a faculty member in a principal preparation program, the state exam pulls fiscal resources, human energies, and intellectual preoccupation toward a singular part of our total program. Such a pull encourages a linear, short-term perspective of curriculum and programming.

When I came to this position, faculties in the college of education and in my department planned ways to support students who would be taking the ExCET. At the welcome-back-to-campus meeting in the fall, the dean and associate dean reviewed test results. Just before the state exam, and after the results were published, planning meetings were held to develop ways to support our students and review the test results again. Reporting test scores, anticipating test results, and reviewing test scores dominated the agendas of every meeting.

When one ethnic group continued to score below the standard, the college of education was rated "under review" by the SBEC. Now the level of concern was heightened. The reputation was at stake of a university that has the third highest number of graduating students who become Texas teachers. The careers and career reputations of educators who had dedicated themselves to the preparation programs were at stake. If a state monitor became the director of the program, how long would that blemish remain on the reputation of the college? One minority group was identified as the primary threat to the preparation program: the problem group, the group that could not pass the exam, the group that scored lowest. The scores from this ethnic group had to be raised. Tutoring and mentoring for this group were carefully monitored.

The unthinkable loss of certification programs would mean retirement for some and loss of positions for others. The "under review" rating magnified the situation to a level of crisis. Students must pass the exam. The college had one year to improve the scores. Short-term cures and fix-it remedies for the immediate problem at hand were the concern.

The threat of monitors and loss of programs caused a panic through the college. Administrators quickly developed a plan that would yield immediate results. The major thrusts were as follows: (1) Tutor all students to pass the test, but especially minority groups, who were scoring lowest. (2) Raise entry requirements for preparation programs. If the students are higher achievers upon entry, these students will be more likely to pass the ExCET. (3) Assign mentors to every student who has failed the exam. (4) Develop a regimented schedule of

qualifying exams, review sessions, and final qualifying exams for all students. Only students who pass the qualifying exams may take the state exam. (5) Create a new function at the university, the ExCET Office, to manage all the ExCET testing issues.

In addition to aligning the courses in the curriculum to the state standards, the mentoring, review sessions, and qualifying exams were developed, written, and conducted at the department level. We all were working harder at the same goal: Students must pass the ExCET. The test results from the ExCET were not providing guides for program development, only guides to working harder at reviews, mentoring, and scheduling. The necessity to improve test scores held our energy at the outcome level, at the exam. Students passed though the program, and then every effort was made for each student to pass the exam. There wasn't time to examine the parts of the program development and consider improvements. There wasn't a process for providing information for program development.

One hope remains. Perhaps all our energies will bear some positive results and enough students will pass. Then the college will be removed from the "under review" list. That would provide an opportunity to take a new look at the educator preparation programs and begin a systemic approach for continuous development. The outcomes or student achievement at the end of the preparation program would still be an important indicator of program success, but there would be more than one way to examine the final output. Within the program preparation system the overall purpose would be determined and assessed by the college of education. The purpose would define the processes that must be undertaken and subsystems would carry out these processes. The content would be designed to accomplish the processes (Banathy, 1968; 1991). Each interrelated subsystem would have an identified purpose, an output, and an output assessment. The assessment would provide feedback for ways to adjust and improve each interrelated part, which adjusts the whole system. The picture would be a circular one with interrelated parts providing adjusting data for each other and the overall system. Such an approach would prevent a disjointed, linear approach, which tries to fix one part with the hope that the rest will work out.

Haworth and Conrad (1997), in *Emblems of Quality in Higher Education*, stress that faculty and students in the university must be engaged in teaching and learning. The learning process for faculty is to learn about what is happening: What is our overall goal? Is the program meeting the needs of the students? What are we doing at every level of this program? Haworth and Conrad stress the importance of continuous program development that is continuously assessing, continuous program learning at the university level. Such continuous, ongoing learning requires multiple methods of as-

sessments, and Haworth and Conrad emphasize the need to hear the voices of all stakeholders, and in educator preparation programs those voices are: students, faculty, administrators, public school educators, and community people. All stakeholders should provide input for assessment and all provide data from multiple means of assessment. Student and faculty portfolios, focus group inquiries, interviews, surveys, and other means could generate data of what actually happens in a program, within a college, and within the university, and how these practices affect student learning.

There are university-wide, in-depth self-studies that provide data for improvement. These studies are part of the accreditation process, which happens every five years for one entity and every ten years for another entity. That is too long to wait for sustaining improvement to meet the needs of students. There are individual departments that engage in continuous program development and that involve all stakeholders, but this data must be used to guide adjustments to the total system. The danger of assessing sporadically and only for review committees is that a holistic understanding of the processes within an educational system does not exist, so problem areas cannot be adjusted. ExCET testing presents the same danger: assessing a program based on one exam, which does not reveal the total picture of problems or successes.

An educational program that does not ask questions about the total program and all the interrelated parts cannot implement program improvement, because the data for that improvement does not exist, is not known. Administrators cannot know what needs improvement unless questions are asked, data collected, and the results fed back into the system for improvement.

When the college of education is removed from "under review" status, when enough minority students pass the ExCET, my hope for a holistic, systemic assessment may be lost. Getting off the review list may indicate to jubilant faculty and university administrators (who will heave a sigh of relief) that the reactive response to ExCET failures—tutor, mentor, review, schedule—works. Why worry about problems that are not state tested? Such a mentality would see reality as only the ExCET testing and the periodic accreditation process. My hope for continuous learning for continuous improvement and development would be lost.

The ExCET has presented an even more unfortunate and probably dangerous situation in higher education. In an effort to protect and preserve programs and reputations, passing the exam, the ExCET, takes precedence over long-term, continuous program improvement. If efforts to deal with ExCET are isolated strategies, a holistic approach for the total program that would incorporate continuous improvement and continuous faculty learning for the total program system is impossible.

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THE EXCET TEACHER EXAMS

History, Promises, and Concerns

Carolyn D. Abel, Charles F. Abel, V. C. Alexander, Sandra Luna McCune, and Patricia G. Nason

Context

Currently, everyone seeking certification to teach in the state of Texas must demonstrate competence in both proven pedagogical techniques and their particular teaching field. ExCET exams (Examination for the Certification of Educators in Texas), developed by the State Board for Educator Certification (SBEC), are employed to determine these competencies in each secondary field and in the fields of special education, early childhood education, and elementary education. Prospective teachers must pass two ExCET exams: a professional development exam assessing learning and teaching techniques, and a comprehensive exam testing content knowledge of the subject area(s) wherein the prospective teacher is seeking certification.

The ExCET exams are part of a comprehensive set of certification requirements, including:

- The completion of a baccalaureate degree
- The completion of an approved teacher preparation program including field-based preparation
- Passing scores on a test of basic skills
- A recommendation for certification by an accredited educator preparation program, and
- Passing scores on the ExCET exams themselves

The content knowledge tested by the ExCET exams is currently being aligned more closely with the existing Texas Essential Knowledge and Skills (TEKS) inventory. Schools are held accountable for the items on this in-

ventory through the Texas Assessment of Academic Skills (TAAS) exams that measure the performance of their students. The professional teaching component of the ExCET exam will be aligned with the Beginning Teacher Activity Profile in Texas (BTAPT), a performance-based assessment now entering the piloting stage.

Beginning in 1998, educator preparation programs within the state were required to secure targeted passing rates on the ExCET exams. The 1998 targets were set at either 70 percent for those taking the exam for the first time, or an 80 percent cumulative passing rate for each demographic group (as defined by the SBEC) taking the exam, regardless of the number of times the test was taken. The targets for 2002 have been set at 75 percent and 85 percent, respectively.

History

The ExCET exams were explicitly developed as an integral part of an overall strategy to ensure that the state's educational system is capable of providing the knowledge, information, and skills necessary to effectively prepare students for participation in a sophisticated, diverse, and internationally interdependent society. Good teachers are clearly the hallmark of such an educational system, as they are linchpins of intellectual and social development. To its credit, Texas has always been concerned with assuring that its teachers are capable and prepared to meet the educational needs and interests of its citizens.

Perhaps the earliest attempt to ensure high-quality teachers in Texas occurred in 1823 when the Mexican government sought to establish competitive examinations for teachers in public schools. The plan proposed no required course of study, and Texas preserved the Mexican plan upon gaining independence. The school law of 1840, for example, required that each county's chief and associate justices examine the qualifications of those desiring to teach in county schools but required no course of study. The 1858 school law shifted the examination of prospective teachers to a three-member board of examiners appointed by each county court, but still required no particular education.

Reconstruction centralized education in Texas. A state board was established composed of the superintendent of public instruction, governor, and attorney general. The superintendent appointed one district supervisor for each of the thirty-five established school districts, and these supervisors examined prospective teachers.

In 1873 teacher certification was returned to the county level. As the state grew and schools became more differentiated, a minimal degree of specialization began to enter the examination and certification process. The 1879 certification law established three classes of teaching certificate. The type of certificate issued was dictated by the breadth of the examination taken and determined the type of school in which the teacher could instruct. First-class certificates, the

highest level issued under this law, required examination in "school discipline and methods of teaching" for the first time.

The twentieth century witnessed a rapid series of changes in teacher certification processes and requirements. A 1911 change in certification laws ended the county examination-certification process. All certificates were issued by the state superintendent and were valid throughout the state. By 1921, passing a written subject matter examination was no longer considered sufficient and all future certificates were to be based on college studies alone. In 1955 a baccalaureate degree coupled with the completion of a state-approved teacher education program became the minimum standard for teacher certification, and over the next thirty years the 1955 standards were refined and expanded. Additional certifications, based on graduate study, were established for an increasing number of specialties.

Responding to nationwide school reform during the 1980s, Texas reintroduced examinations to the certification process. In 1984, all certified teachers were required to sit for a basic skills competency test (the Texas Examination for Current Administrators and Teachers [TECAT]). In that same year, the legislature toughened certification requirements for new teachers. Prospective teachers were required to perform satisfactorily on a basic skills exam both prior to entering an educator preparation program and upon exiting. The exit exam covered both content and pedagogy, and the current ExCET exams are a refinement of these original exit exams.

Since 1991, prospective teachers have been required to obtain a major in an academic subject or interdisciplinary academic major related to the core curriculum in addition to passing the relevant exit exams.

Promises and Concerns

The ExCET exams have not been in place sufficiently long to say anything definitive about their impact. Nevertheless, given their nature, purpose, and method of implementation, certain points about their promise and certain concerns about their implications are fairly clear. Realizing the potentials and promises of the ExCET exams depends largely upon how certain we can be of their validity, reliability, and ability to bring diverse interests together in a discourse concerning the common good. Concerns revolve about the risks inherent in the governmental management of education, the limitations upon validity and reliability intrinsic to their form and function, and the justice and educational desirability of what they require and imply.

Promises

First, school districts and principals could have an additional gauge in their quest to identify outstanding teachers. Assessing teaching potential and predicting classroom success requires an inductive leap from available indicators that no one is completely

comfortable making. Employing both multiple indicators and an array of different kinds of indicators (quantitative and qualitative, time series, and time slice) increases the validity of such inferences and certainly mitigates this concern to some extent. Should the ExCET exams prove valid and reliable indicators, it would make sense for school districts and principals to employ ExCET scores as such an additional gauge.

Second, valid and reliable ExCET exams could be the keystones of a flexible framework meeting individual student and teacher needs. If targets are set at the state level and if educator programs are free to experiment and devise creative ways of meeting those targets, the opportunity is opened to devise programs targeted at specified groups and meeting their particular needs and interests.

Third, the ExCET exams could set the stage for improved teacher salaries, benefits, and working conditions. Arguably, those teachers demonstrating a greater command of their content area and a more solid pedagogy will be in greater demand. To draw these teachers, school districts will need to devise attractive employment packages. Moreover, as people are attracted to a given field not by more stringent entrance requirements, but by improved working conditions and higher salaries (Hyman, 1984), the ExCET's potential impact on salaries could set the stage for improved recruitment and retention as well.

Fourth, it is no secret that outstanding candidates for teaching are often discouraged by the hurdles erected by schools of education. In his February 1999 State of American Education Address, U.S. Secretary of Education Richard Riley urged state policy makers to rethink teacher licensing requirements. "Too many potential teachers," he observed, "are turned away because of the cumbersome process that requires them to jump through hoops and lots of them." If expectations are clearly identified, and if the ExCET exams prove a clear indicator of attainment, and if they are woven into a flexible and pluralistic approach regarding the means for reaching those results, the ExCET exams could encourage both fruitful experimentation among educator preparation programs and a larger supply of truly able teachers. Instead of requiring a long list of courses, degrees, and certifications, for example, future programs may simply be tested for the knowledge and skills they impart to their students. Moreover, focusing on results for certification purposes allows teacher preparation programs to streamline the entry and certification process for people with expertise and experience outside the area of education. Many of the requirements in place to ensure content and pedagogical sophistication will not be necessary for these people.

Finally, perhaps the most socially significant impact of the ExCET is the broad-based discourse provoked by its creation, implementation, and revision. Over the last two decades, many have expressed a concern that intelligent debate about common concerns

has been supplanted by ideological quarrels, dogma, and name-calling. The opportunity to speak, to discuss public issues, and to deliberate about the common good is vital to the proper functioning of a democracy. The energy of the democratic idea, as Lewis H. Lapham put it, "flows from the capacity of its citizens to speak and think without cant, from their willingness to defend their interest, argue their case, say what they mean" (1993, p. 41). Without general, meaningful, deliberative conversation across socioeconomic, racial, ethnic, and political lines, groups increasingly speak to themselves in a dialect of their own, inaccessible to outsiders. (Lasch, 1995). Consequently, the opportunity is lost to test ideas about the common good against an array of experiences and interests, to sift out weak or eccentric ideas, and to prioritize and finally bring to consensus sound policies and approaches.

The process of ExCET development advertised by the State Board of Educator Certification intended to involve thousands of people across the state. Committees of Texas educators and interested citizens were to direct the development of the ExCET tests by participating in each stage of the test development process. These committees of approximately twenty people each were to be formed for each content area and to represent Texas educators, educator preparation programs, professional educator organizations, content experts, the business community, and parents. The committees were to be balanced in terms of social position, affiliation, years of experience, ethnicity, gender, and geographical diversity. Membership was to be rotated during the development process so that numerous Texas stakeholders could be actively involved. Additionally, the SBEC invited comments on proposed ExCET standards from all visitors to its Web site and provided a link for making nominations to each committee (www.sbec.state.tx/certstand/new_standards_intro.htm).

Concerns

- The notion that government should determine both what students learn and what universities teach seems diametrically opposed to American ideals of liberty, innovation, individualism, self-determination, and academic freedom. It also opposes the ideal of child-centered classrooms where teachers build the curriculum around the student's talents, abilities, skills, and interests. State standards are by their nature prescriptive, and they certainly give the state a curriculum control that many argue properly rests with individual schools. It is a question not of opposing high standards, but of locating the responsibility for establishing and attaining those standards in the proper place. Many argue that the responsibility properly rests with school faculties and professional organizations, not the state. What is

more, a robust democracy is probably best served if schools teach diverse contents and skills in diverse ways.

- The demand for high standards and accountability in Texas seems to boil down to passing one long, high-stakes test replete with particulars, facts, and details. Student performances that do not meet targeted rates on this single instrument affect student employment, single out preparation programs for state oversight and "special assistance," and may be sufficient to remove program accreditation. Schools of education, in turn, are for practical purposes required to hurtle through the school year in preparation, without pausing for deep inquiry.
- There is reason for concern that a "Hawthorn effect" is occurring with regard to ExCET performance. Some evidence suggests that scores will increase in the first few years of any such program (see, e.g., Linn, Graue, & Sanders, 1990) with or without real improvement in constructs that the tests are intended to measure.
- While the ExCET spells out what prospective teachers should be able to do, it relies upon multiple-choice questions, including no tasks requiring candidates to demonstrate their knowledge in practice. Classroom performance, both as to content and pedagogy, requires a synthesis of information, method, and "on-the-spot" critical thinking not easily captured within the structure imposed by the multiple-choice format. Conversely, students may recognize the correct approach when it is presented as a discrete item in a test format, but prove inept at employing that approach correctly in classroom contexts. In this case, the ExCET may make the prospective teacher appear more proficient than performance would suggest. Only recently are we seeing promise of a performance-based assessment in the form of the BTAPT. However, in its present draft form, it appears too labor-intensive and is unlikely to be ready (and effective) any time soon.
- Apart from the form of the ExCET exams, is there a definitive, positive relationship between scores on the ExCET and performance in the classroom? Arguably, this question is moot, as the expressed intent of the ExCET exams is not to identify the most effective teachers. Their only purpose is to ensure that prospective teachers are "minimally qualified." Still, it is only realistic to suspect that prospective employers will employ ExCET scores to make choices among candidates whose resumes are otherwise equally strong. Consequently, ensuring some relationship between effectiveness and the scores seems the responsible thing to do.

- Do the ExCET exams measure what they seek to measure? ExCET exams seek to measure both the candidate's knowledge of particular fields and the candidate's grasp of the theory of good pedagogy behind the test. Thus, both content and construct validity are at issue. There seem to be no publicly available studies addressing either of these concerns. Moreover, an unambiguous evaluation of the benefits may remain elusive because it is always difficult to determine if gains are specific to the tests or if they can be validly generalized to the constructs the tests are intended to measure. This problem is compounded as teacher preparation programs "teach to the test" because of concern over losing state certification.
- Such validation studies would be particularly useful in shielding both the state and educator preparation programs against suits under either Title VII of the Civil Rights Act of 1964 or the equal protection clause of the Fourteenth Amendment. If a disproportionate number of minority candidates fail any ExCET exam, they may attack the tests by alleging that their impact is racially discriminatory. The legally effective rebuttal is to demonstrate through validation that the ExCET exams are job related (*Connecticut v. Teal*, 457 U.S. 440 [1982]).
- Learning depends on the interest, efforts, and abilities of both the students and the teachers. As ExCET exams effectively assign responsibility for the prospective teacher's success to the educator preparation program, poor scores resulting from student disinterest, inaction, and middling abilities become evidence of a poor program. Of course, motivation and behavior have an extrinsic dimension. They may be enhanced by techniques calculated to create and maintain interest, by the provision of nonthreatening classroom environments, by conveying knowledge germane to the student's aspirations, by involving the learner in learning activities, by setting reasonable goals, by developing enjoyable activities, by enhancing teacher participation, by sincere praise, and by communicating clear expectations. Nevertheless, there is an intrinsic dimension to student motivation and interest as well. Students are to a significant extent responsible for their own active involvement and ownership of the learning process, and individual students certainly differ greatly in what they find enticing. Because the ExCET requires educator preparation programs to secure absolute target passing rates, limitations on learning that might stem from a lack of student interest are essentially assumed surmountable and limited only by the pro-

gram's energy and ingenuity. Consequently, the educator preparation program's priority becomes teaching that which first and foremost guarantees success on the ExCET exams. Student acquisition of knowledge and skills becomes a secondary consideration. This problem is exacerbated by the fact that much of what prospective teachers need to learn is not inherently interesting. Basics are often no more than prerequisites to that which is interesting. Classes on phonics, for example, are not the sort of thing that students are apt to find attractive.

- Do the ExCET exams place undue emphasis upon verbal sophistication? Some significant discussion revolves about questions of the fairness of an exam based heavily on language proficiency to students with a limited proficiency in English (LEP students) and students with less of a verbal orientation to teaching and learning. The point is not that teachers should be permitted a limited competency at English, but that tests of content knowledge and pedagogical sophistication should not be biased in such a manner as to preclude a clear demonstration of those competencies.
- Apart from the question of linguistic proficiency, standardized tests like the ExCET exams have been criticized for including questions that are biased against allowing certain kinds of students (e.g., ethnic minorities, rural students, inner-city students) a fair opportunity to demonstrate what they understand. The basis for this criticism is that the items reflect the culture and learning style of the middle-class majority (Neill & Medina, 1989). Although test companies have attempted to write culture-free items, the removal of questions from a meaningful context has proved problematic for minority students. This is a critical issue in Texas as the two populations experiencing the greatest difficulty with the ExCET exams are Hispanics and Black Americans, and as Texas is actively recruiting these minorities to the teaching profession for sound sociological reasons.
- What is the justification for the requirement that a target percentage of identified demographic groups pass the ExCET? Prima facie, expending more resources on groups not meeting the target rates seems to go against any concept of merit or equality in the sense of treating everyone with dignity and respect. Similarly, ensuring equal opportunity to become educated and participate in this society would not result necessarily in everyone's reaching the same level of knowledge or skill.
- There seem to be two conflicting impulses behind ExCET development. Continually assem-

bling massive teams of diverse "stakeholders" to write ExCET standards threatens to result in immense lists of teacher competencies accommodating every team member's pet interest. At the same time, the notion that teachers should share a core of knowledge encourages the state to load up its standards with lists of facts to be learned. Neither is an especially desirable prospect.

- Historically, social plurality approaches aimed at arriving at agreed upon values, beliefs, and social "goods" often translate into political relations of domination and subordination. The "differences" that comprise plurality are frequently manifested in the form of binary oppositions marked by hierarchy and marginalization. Additionally, ad hoc balancing of interests and opportunistic political behavior often obviates consensus and prevails over the "public good."

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A LEGAL CHALLENGE TO STANDARDIZED TESTING IN TEXAS

Raymond A. Horn Jr.

In October 1997, on behalf of seven students who did not receive a high school diploma because they did not pass the Texas Assessment of Academic Skills (TAAS) Exit-Level Test, the Mexican American Legal Defense and Educational Fund (MALDEF) filed a suit in a federal district court against the Texas Education Agency (TEA) and the Texas School Board of Education. On January 7, 2000, United States District Judge Edward C. Prado[1] dismissed the case against the TEA and the School Board of Education. The plaintiffs (nine students and MALDEF) were asking the "court to issue an injunction preventing the TEA from using failure of the exit-level TAAS test as a basis for denying high school diplomas" (Prado 2000, p. 2).

This decision greatly impacts not only Texas public school education, but also any other state engaging in high-stakes testing.[2] For all concerned, the first impact is that a legal precedent has now been set that specifically supports the effects of a standardized exit-level test on minority students. Secondly, despite the adverse opinion toward minority students, the evidence provides compelling documentation supporting the deleterious effects of high-stakes testing on minority students; in this case, African-Americans and Hispanics.

My presentation of this case is centered on two documents: Edward C. Prado's opinion (2000), and the Plaintiffs' Post Trial Brief (1999) submitted to the assistant attorney general of Texas. These two documents are instructive for two reasons. First, the Court's decision is the final decision for Texas students at this point in time[3] until further legal challenges to high-stakes testing are made. Second, these documents show the significant difference in political philosophy between the Court and the Plaintiffs. This difference is significant in understanding the current reality of our po-

litical system and the impact of this reality on disadvantaged minorities.

Supporting State's Rights

The Court "has determined that the use of the TAAS examination does not have an impermissible adverse impact on Texas's minority students and does not violate their right to the due process of law" (p. 2). The Court's decision was primarily based on the fact that "it is clear that the law requires courts to give deference to state legislative policy, in the educational context, such deference is even warranted. Education is the particular responsibility of state governments" (p. 3). The Court's insistence of the right of the state to set educational policy, and the inappropriateness of judicial involvement unless "a state uses its considerable power impermissibly to disadvantage minority students" (p. 3), was reiterated throughout the Court's opinion as evidenced by these statements:

- "This Court has no authority to tell the State of Texas what a well-educated high school graduate should demonstrably know at the end of twelve years of education. Nor may this Court determine the relative merits of teacher evaluation and 'objective' testing" (p. 8).
- "The articulated goals of the implementation of the TAAS requirements are to hold schools, students, and teachers accountable for education and to ensure that all Texas students receive the same, adequate learning opportunities. These goals are certainly within the legitimate exercise of the State's power over public education" (p. 41).
- "In addition, the Court finds that it is an exercise well within the State's power and authority. The State of Texas has determined that, to graduate, a senior must have mastered 70 percent of the tested minimal essentials" (p. 44).
- "The Court finds that the question of whether the education of minority students is being limited by TAAS-directed instruction is not a proper subject for its review. The State of Texas has determined that a set of knowledge and skills must be taught and learned in State schools. The State mandates no more than these 'essential' items. Test-driven instruction undeniably helps to accomplish this goal. It is not within the Court's power to alter or broaden the curricular decisions made by the State" (pp. 46–47).
- "In short, the Court finds, on the basis of the evidence presented at trial, that the disparities in test scores do not result from flaws in the test or in the way it is administered. Instead, as the Plaintiffs themselves have argued, some minority students have, for a myriad of reasons, failed to keep up (or catch up) with their majority counterparts. It may be, as the TEA argues, that the TAAS test is one weapon in the fight to remedy this problem. At any rate,

the State is within its power to choose this remedy" (pp. 53–54).

- "It is not for this Court to determine whether Texas has chosen the best of all possible means for achieving these goals. The system is not perfect, but the Court cannot say that it is unconstitutional. Judgment is GRANTED in favor of the Defendants, and this case is DISMISSED" (pp. 56–57).

To minorities the implications of the Court's state's rights position is clear. If minorities contest the actions of the State, they will find no relief from the Court unless it can be proven that the State has used its power to disadvantage the minorities; and, of course, the burden of proof is on the Plaintiffs.

The Case and the Court's Opinion

In this case, the Court determined that "a state could overstep its bounds in implementing standardized tests as graduation requirements. Specifically, the Court found that a test that did not measure what students were actually learning could be fundamentally unfair. The Court also found that a test that perpetuated the effects of prior discrimination was unconstitutional" (p. 4). In fact, the Court held "that a state could violate the constitution if it implemented polices that violated accepted educational norms" (p. 4). The Court also held "that regulation, in clear, unmistakable terms, prohibits a federally funded program from implementing policies that have a disparate impact on minorities" (p. 4).

In deciding the issue of discrimination, the Court defined its task in four ways. First, the Court had to consider a standardized test that measured knowledge rather than one that predicted performance. Second, the Court had to decide the amount of "deference to be given to a State in deciding how much a student should be required to learn—the cut-score issue" (p. 6). Third, the Court had "to weigh what appears to be a significant discrepancy in pass scores on the TAAS test with the overwhelming evidence that the discrepancy is rapidly improving and that the lot of Texas minority students, at least as demonstrated by academic achievement, while far from perfect, is better than that of minority students in other parts of the country and appears to be getting better" (p. 7). And, finally, the Court had to determine whether the TAAS Exit-Level Test is fair.

In relation to this issue of discrimination, the Court determined the following:

> Thus, the Court has carefully considered the claims that Texas schools still offer widely diverse educational opportunities and that, too often, those opportunities depend on the color of a student's skin or the financial resources of the student's school district. To some degree, as discussed below, the Court must accept these claims. But that finding, alone, is an insufficient basis for invalidating this examination. There must be some link between the TAAS

> test and these disparities. In other words, the Plaintiffs were required to prove, by a preponderance of the evidence, that the TAAS test was implemented in spite of the disparities, and that requiring passage of the test for graduation is therefore fundamentally unfair. The Court believes that this has not been proven. (pp. 8–9)

The Court viewed this case as one that "presented widely differing views of how an educational system should work. One set of witnesses believed that the integrity of objective measurement was paramount; the other believed that this consideration should be tempered with more flexible notions of fairness and justice" (p. 10). The Court continued:

> After a review of the expert testimony, the Court determined that ultimately, resolution of this case turns not on the relative validity of the parties' views on education but on the State's right to pursue educational policies that it legitimately believes are in the best interests of Texas students. The Plaintiffs were able to show that the policies are debated and debatable among learned people. The Plaintiffs demonstrated that the policies have had an initial and substantial adverse impact on minority students. The Plaintiffs demonstrated that the policies are not perfect. However, the Plaintiffs failed to prove that the policies are unconstitutional, that the adverse impact is avoidable or more significant than the concomitant positive impact, or that other approaches would meet the State's articulated legitimate goals. In the absence of such proof, the State must be allowed to design an educational system that it believes best meets the need of its citizens. (pp. 12–13)

It is once again interesting to note that, even though the Court found an initial and substantial adverse impact on minority students, the State's right to design and pursue its goal supersedes the impact on the minority students.

At this time, a review of the facts and conclusions of law will be conducted in relation to the Court's findings and the Plaintiff's position. As determined by the Court, the issues are: the test, the passing standard, objective measurement, remediation, accountability, history of testing/discrimination in Texas, educational standards, disparate impact, and the dropout/retention rates.

The Test

After reviewing the construction of the test, test validity, and the administration of the test, the Court determined that "the TAAS test effectively measures students' mastery of the skills and knowledge the State of Texas has deemed graduating high school seniors must possess" (p. 43).

The Court further determined "that the TEA has shown that the high-stakes use of the TAAS test as a graduation requirement guarantees that students will be motivated to learn the curriculum tested" (pp. 45–46).

The Court also determined that the "Plaintiffs have not demonstrated that the TAAS test is a substantial departure from accepted academic norms or is based on a failure to exercise professional judgment" (p. 52). In arriving at this decision the Court accepted the testimony of a Plaintiff witness:

> The item-selection system chosen by TEA often results in the favoring of items on which minorities will perform poorly, while disfavoring items where discrepancies are less wide. The Court cannot quarrel with this evidence. However, the Court finds that the Plaintiffs have not been able to demonstrate that the test, as validated and equated, does not best serve the State's goals of identifying and remediating educational problems. Because one of the goals of the TAAS test is to identify and remedy problems in the State's educational system, no matter their source, then it would be reasonable for the State to validate and equate test items on some basis other than their disparate impact on certain groups. In addition, the State need not equate its test on the basis of standards it rejects, such as subjective teacher evaluations. (p. 52–53)

The Passing Standard

The initial passing standard for the TAAS test was 60 percent and a year later was raised to 70 percent. The Court determined that:

> the TEA understood the consequences of setting the cut score at 70 percent. When it implemented the TAAS test, the TEA projected that, with a 70 percent cut score, at least 73 percent of African Americans and 67 percent of Hispanics would fail the math portion of the test; at least 55 percent of African Americans and 54 percent of Hispanics would fail the reading section; and at least 62 percent of African Americans and 45 percent of Hispanics would fail the writing section. (p. 19)

On the October 1991 exam to tenth graders, 67 percent of African-Americans, 59 percent of Hispanics, and 31 percent of whites failed to meet the cut score (p. 20).

The Court concluded "that the passing standard does bear a manifest relation to a legitimate goal" (p. 43), and it is well within the State of Texas's power and authority to require seniors to attain a mastery level of 70 percent of the tested minimal essential standards (p. 44). The Court's opinion was further supported by the Court's determination that "Texas relied on field test data and input from educators to determine where to set its cut score" (p. 45). In addition, "while field test results suggested that a large number of students would not pass at the 70-percent cut score, officials had reason to believe that those numbers were inflated. Officials contemplated the possible consequences and determined that the risk should be taken" (p. 45).

Objective Measurement

The Court recognized that "the TEA determined that objective measures of mastery should be imposed in order to

eliminate what it perceived to be inconsistent and possibly subjective teacher evaluations of students" (p. 20). Also, the TEA "presented testimony that subjectivity can work to disadvantage minority students by allowing inflated grades to mask gaps in learning" (p. 20). They further argued that "a student's classroom grade cannot be equated to TAAS performance, as grades can measure a variety of factors, ranging from effort and improvement to objective mastery. The TAAS test is a solely objective measurement of mastery" (pp. 42–43). Based on this evidence, the Court found that "the test accomplishes what it sets out to accomplish, which is to provide an objective assessment of whether students have mastered a discrete set of skills and knowledge" (p. 43).

In addition, the Court found that the TAAS Exit-Level Test met currently accepted standards for curricular validity, and did so with a sufficient degree of reliability (pp. 51–52).

Remediation

The Court found the evidence concerning remediation by the Defendants' experts credible. Consequently, the Court found that, on balance, remedial efforts were largely successful (p. 22). The TEA's expert estimated "that 44,515 minority students in 1997 were successfully remediated after having failed their first attempt at the TAAS test in 1995" (p. 6). The issue of remediation was very important in the Court's considerations. The Court determined that "all students in Texas have had a reasonable opportunity to learn the subject matters covered by the exam" (p. 52). The Court determined that the Court's conclusions in this case were supported by the State's efforts at remediation, especially the fact that students are given eight opportunities to pass the examination from the time of their first testing in their sophomore year to the end of their twelfth year.

Accountability

The Court recognized that "administrators, schools, and teachers are held accountable, in varying degrees, for TAAS performance" (p. 21). The Court also recognized that the scores are disaggregated into subgroups, "so that schools and districts are aware of the degree of success or failure of African American, Hispanic, and white students.[4] If one subgroup fails to meet minimum performance standards, a school or district will receive a low accountability rating" (p. 21).

In relation to accountability, the Plaintiffs argued that the determination of the State's accountability of administrators, schools, and teachers is based on the first administration of the exit test, and that the State does not consider cumulative pass rates or final pass rates on the test when they determine whether a school district is exemplary, recognized, acceptable, or low performing.

History of Testing/ Discrimination

The Court recognized that standardized tests have been used in educa-

tional contexts to disadvantage minorities. However, the Court determined that the Plaintiffs presented insufficient evidence that the TAAS test is designed to or does impermissibly disadvantage minorities (p. 22). The Court agreed with the Plaintiffs "that Texas minority students have been, and to some extent continue to be, the victims of educational inequality" (p. 23). The Court found the reasons for this inequity disturbing but inconclusive, and concluded "that socioeconomics, family support, unequal funding, quality of teaching and educational materials, individual effort, and the residual effects of prior discriminatory practices were all implicated" (p. 23).

In addition, the Court found that the Plaintiffs presented insufficient evidence to support a finding that minority students do not have a reasonable opportunity to learn the material covered by the TAAS because of unequal education in the past or present (p. 23). However, the Court did find that the Plaintiffs presented evidence to show that, in a more general sense, minorities are not provided equal educational opportunities, and that minorities are underrepresented in advanced placement courses and in gifted-and-talented programs (p. 23). "However, because of the rigid, state-mandated correlation between the Texas Essentials of Knowledge and Skills and the TAAS test, the Court finds that all Texas students have an equal opportunity to learn the items presented on the TAAS" (pp. 23–24). In fact, the Court's opinion is "that the implementation of the TAAS test, together with school accountability and mandated remedial follow-up, helps address the effects of any prior discrimination and remaining inequities in the system" (p. 24).

The Court considered that "Texas's difficulties in providing an equal education to all its students are well-documented. It is only in the recent past that efforts have been made to provide equal funding to Texas public schools. Several schools in the state remain under desegregation orders" (p. 55). In relation to this past history, the Court

> has determined that the use and implementation of the TAAS test does identify educational inequalities and attempts to address them (remedial efforts help dispel the link between past discrimination and poor performance on standardized tests). While lack of effort and creativity at the local level sometimes frustrate those attempts, local policy is not an issue before the Court. The results of the TAAS test are used, in many cases quite effectively, to motivate not only students but schools and teachers to raise and meet educational standards. (p. 55)

Educational Standards

The Court determined that the primary issue was that the "current prevailing standards for the proper use of educational testing recommend that high-stakes decisions, such as whether or not to promote or graduate a student, should not be made on the basis of a single test score" (p. 24). What was disputed at the trial was whether the TAAS test is actually the *sole crite-*

rion for graduation. The Court found that

> graduation in Texas, in fact, hinges on three separate and independent criteria: the two objective criteria of attendance and success on the TAAS examination, and the arguably objective/subjective criterion of course success. However, as the Plaintiffs note, these factors are not weighted with and against each other; rather, failure to meet any single criterion results in failure to graduate. Thus, the failure to pass the exit-level exam does serve as a bar to graduation, and the exam is properly called a "high-stakes" test. (p. 25)

However, the Court determined that since students are given at least eight opportunities to pass the examination prior to their graduation date, a single TAAS score does not serve as the sole criterion for graduation (p. 25).

Disparate Impact

Concerning the impact of the TAAS on minority students, the Court found "an inescapable conclusion that in every administration of the TAAS test since October 1990, Hispanic and African American students have performed significantly worse on all three sections of the exit exam than majority students. However, the Court also finds that it is highly significant that minority students have continued to narrow the passing rate gap at a rapid rate" (p. 26).

In determining whether a legally significant statistical disparity did exist, the Court considered the Four-Fifth's Rule[5] and whether a cumulative pass rate or the pass rates on a single administration of the TAAS at the tenth-grade level should be considered. In this context, the Court agreed with the Plaintiffs that "on first-time administration of the exit-level test, a legally significant adverse impact exists," and that, "while an examination of cumulative pass scores in more recent years does not evince adverse impact under the Four-Fifths Rule, the disparity there, too, is sufficient to give rise to legitimate concern" (p. 28).

The Court further distinguished between the statistical impact and the practical impact. In relation to the statistically disparate failure rates, the TEA argued "that, because of the presence of largely successful remediation, the practical significance benefits minorities. The Plaintiffs note that failure to graduate has serious economic, social, and emotional effects on students" (p. 29). The Court found that "the effect of remediation, which is usually eventual success in passing the examination and thus receipt of a high school diploma, is more profound than the steadily decreasing minority failure rate" (p. 29). The Court agreed with the TEA argument that each individual student is given at least eight tries to pass the exam and that even though many students fail on the first attempt, many eventually succeed (p. 39).

However, the Court found that

> whether one looks at cumulative or single-administration results, the disparity between minority and majority pass rates on the TAAS test must give pause to anyone looking at the numbers. The variances are not only large and disconcerting, they also apparently cut across such factors as socioeconomics. Further, the data presented by the Plaintiffs regarding the statistical significance of the disparities buttress the view that legally meaningful differences do exist between the pass rates of minority and majority students. (pp. 39–40)

The Court continued by stating that "given the sobering differences in pass rates and their demonstrated statistical significance, the Court finds that the Plaintiffs have made a prima facie showing of significant adverse impact" (p. 40).

Because of the prima facie showing of significant adverse impact, the Court had to determine "whether the TEA has met its burden of production on the question of whether the TAAS test is an educational 'necessity'" (p. 41). The Court determined that "an educational necessity exists where the challenged practice serves the legitimate educational goals of the institution" (p. 41), and that the TAAS test indeed serves the accountability goals of the TEA.

Dropout/Retention Rates

The Court agreed with the Plaintiffs' position that "Texas students, particularly minority students, drop out of school in significant numbers and are retained at their current grade level in numbers that give cause for concern. Moreover, the Plaintiffs presented evidence supporting their contention that drop-out and retention rates for minorities are peculiarly high at the ninth grade, just before the first administration of the exit-level TAAS" (p. 30). However, the Court determined that "Plaintiffs have failed to make a causal connection between the implementation of the TAAS test and these phenomena, beyond mere conjecture. In other words, Plaintiffs were only able to point to the problem and ask the Court to draw an inference that the problem exists because of the implementation of the TAAS test" (p. 30).

In focusing on the State's goal of motivating students, the Court determined that, even though the Plaintiffs offered evidence of other approaches (such as a sliding-scale system), the Plaintiffs could not offer evidence that these alternatives could sufficiently motivate students to perform to their highest ability (p. 48). The Court determined that "in addition, and perhaps more importantly, the present use of the TAAS test motivates schools and teachers to provide an adequate and fair education, at least of the minimum skills required by the State, to all students" (pp. 48–49).

The Case and the Plaintiff's Argument

The Plaintiff's position, as follows, was summarized in the introduction of the Post Trial Brief (1999).

The TAAS Exit Test wreaks havoc with the educational opportunities of the State's African American and Hispanic students. The results of the TAAS Exit Test since its implementation in the State demonstrate that African American and Hispanic students consistently do worse than whites, whether the results are viewed on a single administration or cumulative basis.

The TAAS Test has even more insidious effects on students who may not even have taken the test. Because the test is touted as a part of the State's accountability system, school districts, schools and teachers have an incentive to encourage student retention or to exempt students in order to "improve" TAAS Exit Test performance. High retention rates, in turn, have led to overaged students in high school, which is a major reason for increased drop out rates. In addition, schools have tended to focus on the "bubble kids" on the cusp of passing the TAAS Exit Test rather than students who need much more help reaching the passing score of 70. These students—the retained, the tracked, the limited English proficient, the dropouts—all tend to fall through the cracks of the State's accountability and educational system. It is no wonder that they cannot pass the TAAS Exit Test. It is on behalf of these "olvidados" and "desaparecidos"—victims of an educational system harmful and arbitrary in its effect on minority students—that Plaintiffs seek relief from the TAAS Exit Test requirements.

The State has failed to show how the TAAS Exit Test meets the standard of educational necessity. Because the TAAS Exit Test is an invalid test, it cannot serve in a significant way the State's goals of determining whether students have mastered higher order thinking skills. The State has the duty to show that the material covered on the test is covered in the State's classrooms—including its lower educational tracks and its ESL [English as a Second Language] tracks. The Court must scrutinize the State's duty more carefully when the State has a history of past discrimination, as does the State of Texas. As described below, Plaintiffs have demonstrated that the State did not ensure that the material covered by this test was actually taught in the classrooms across the State. Plaintiffs, in turn, have met their burden of showing that there are equally effective and less discriminatory alternatives to the TAAS Exit Test.

It is important to note that the Plaintiffs are not asking the Court to diminish educational standards or to make decisions about educational policy. Contrary to Defendants' arguments during the trial, Plaintiffs are not against high standards. Fifth Circuit law governing the use of standardized tests in this context requires that Plaintiffs show that the test has an adverse impact, there are less discriminatory alternatives, and that the test is invalid. The Plaintiffs have met their burden. On the other hand, the State has failed to show that its test is educationally necessary and that it did what was necessary to ensure that the test fairly covers what the State's children are taught. The Court has the power and the duty to strike down educational

> policies such as the use of the TAAS Exit Test as a graduation requirement when those policies unnecessarily infringe on students' constitutional and statutory rights. Plaintiffs ask this Court to take that step here. (pp. 2–3)

The argument of the Plaintiffs, as organized in their Post Trial Brief, takes three parts. First, that the TAAS Exit Test has had a continuous adverse impact on Hispanics and African-Americans. Second, the Plaintiffs maintain that the State has failed to show educational necessity for its use of the TAAS Exit Test, in relation to the argument that there is no manifest relationship between Texas's use of the test and the State's legitimate interest. Finally, the Plaintiffs assert that there are equally effective and less discriminatory alternatives to the TAAS Exit Test.

A Continuous Adverse Impact on Hispanics and African-Americans

The Plaintiffs argue that adverse impact can be determined by the U.S. Equal Employment Opportunity Commission's (EEOC's) Four-Fifths or 80-percent rule, by statistical significance, or by practical significance.[6] Plaintiffs further argued that even under the EEOC guidelines, ratios greater than 80 percent may constitute adverse impact in circumstances where the differences are significant in both practical and statistical terms (p. 6), and that, indeed, adverse impact can be proven in all three measures. The Defendants' witnesses not only conceded that there is an adverse impact in the first administration of the test, but also that there is a continuous pattern of adverse impact on minorities from 1990 through 1999 in the first administration of the test.[7]

The Plaintiffs noted that the Defendants' witness presented evidence that there was, in fact, adverse impact on minorities at the last administration of the test. In fact, they further noted that "his materials failed to include the numbers of students who dropped out of school before the end of their senior years or students who have given up and stopped taking the TAAS Exit Test after their junior year even though they have continued to remain in school and pass their courses" (p. 10). The record shows that the State's calculations did not include sophomore students who were supposed to take the test but didn't, sophomore students who repeated their sophomore year and again failed the test, and sophomore students who took the test but were later determined by their special education committees to be exempt from the test.[8] The former commissioner of education in Texas testified that since 1994 there are at least 45,000 students who would have completed their high school diplomas but for the TAAS Exit Test.

Concerning the adverse impact of the TAAS on minorities after socioeconomic factors were removed, the Plaintiffs presented evidence that after removing students who fit the socioeconomic categories,[9] there were still

violations of the 80-percent rule, the statistical significance rule, and the practical significance rule. The Defendants did not criticize or rebuff this assertion or the fact that of the remaining "cream of the crop"—92 percent of whites, 76 percent of Hispanics, and 64 percent of African-Americans passed the TAAS Exit Test. The same pattern of achievement occurred from 1993 to 1996 (p. 13).

Evidence was presented that shows "the TAAS Exit Test has an especially negative effect upon students of limited English proficiency (LEP)" (p. 14). "Between 1994 and 1998 on all tests taken, LEP students improved from 14% *passing* to 26% *passing*. During the same time, white students went from 67% passing to 85% passing" (p. 14). In fact, one witness of the Defendants "agreed that students of limited English proficiency had problems with the TAAS Exit Test math problems even though they knew the mechanics of mathematics" (p. 14).

Concerning the adverse effect of the TAAS on minorities, the Plaintiffs argued that the TAAS Exit Test has led to increased attrition rates among Hispanic and African-American students. This topic has been explored in detail in a previous chapter. However, there are additional salient points that inform our understanding of this case. The Plaintiffs argued that "the increased attrition rates of African Americans and Hispanics are relevant to this case in at least 3 ways: (1) they are direct evidence of adverse impact of the TAAS Exit Test; (2) they significantly weaken the Defendants' claims that there has been a significant improvement in minority test scores on the TAAS Exit Test that reflects real improvement in education; and (3) they weaken the State's argument that the TAAS Exit Test is manifestly related to legitimate state goals" (p. 15).

Both the Plaintiff and Defendant witnesses testified that there were only 52 percent as many African-Americans graduating from high school in 1998 as entered in the ninth grade in 1995. Even the former commissioner of education in Texas agreed that TAAS failure can add to a student's decision to drop out. In fact, the TEA's witness testified that TEA's dropout statistics are not valid numbers. He admitted that the TEA's dropout numbers are the biggest weakness in their accountability system (p. 17). The Plaintiff continues by reporting that "for example, TEA does not count a student as a dropout if the student has left school because he has not passed the TAAS Exit Test. Nor does TEA include a student as a dropout if the student left school and later passed the GED test. Defendants also admit that their dropout statistics are very weak because they are based on numbers that are self reported by school districts to TEA" (p. 17).

Related to the dropout problem is the problem of ninth-grade student retention rates. Information presented by the Plaintiffs and the TEA show retention rates of 25 percent of minority students in the ninth grade in Texas public schools—more than in any other grade in the Texas public school system (p. 17). The Plaintiffs

indicate that "TEA's data shows that there is a very high correlation between the students' scores on the eighth grade TAAS test and their scores on the tenth grade TAAS Exit Test. Districts have an incentive to retain students in the ninth grade who are likely not to pass the TAAS Exit Test in the tenth grade in order to improve their tenth grade exit test scores" (p. 18). Evidence shows that overaged students are most likely to drop out of high school.

The Educational Necessity for the Use of the TAAS Exit Test

In relation to the issue of educational necessity, the Plaintiffs' main points are as follows:

> The state has not come anywhere near meeting its burden to show a manifest relationship between its use of the TAAS Exit Test and its legitimate interest in high standards and accountability in education in the State. Defendants' educational necessity arguments fail for several reasons: (a) the State does not need to use the TAAS Exit Test as a diploma requirement in order to meet objectives of accountability and the legitimacy of a high school diploma; (b) the TAAS system, especially the TAAS Exit Test have many very strong negative effects on educational progress in the State; (c) the state failed to show that the TAAS Exit Test is the reason for any alleged improvements in minority achievement; and (d) the TAAS Exit Test and its use are invalid. (p. 23–24)

One aspect of the educational necessity issue is that of grade inflation. In other words, the grades students achieve in their courses do not reflect their real level of achievement; the grade is higher than their actual performance, and therefore, not a valid indicator of achievement. The Plaintiffs rebutted this assertion by pointing out that Texas law requires the admittance of all students into any Texas university who are in the top 10 percent of their high school class, regardless of the student's test scores, personal evaluations, or courses taken in high school (p. 26). In addition, TEA officials admitted that they were not aware of any empirical studies indicating grade inflation in schools. In fact, nine witnesses of the Defense were cited as stating that there is not a grade inflation problem in their respective school districts. The Plaintiffs pointed out that "all of the Defendants' witnesses agreed with Plaintiffs' witnesses that a student's high school grades give good and reliable information whether the student has mastered the state curriculum" (p. 26).

The Plaintiffs argued that there are strong negative effects on Texas schools because of the TAAS. They report a substantial narrowing of the curriculum in Texas, especially in minority schools. This consists of a deemphasis of the parts of the Texas curriculum not covered on the TAAS test, and on enrichment activities. They supported this assertion with a policy statement by the Texas Counseling Association criticizing the TAAS because of its negative effects

on curriculum, and a Houston survey of 10,000 teachers that showed 68 percent of the teachers viewed TAAS "as an obstacle to instruction and thought that the test drives the curriculum, rather than the curriculum driving the test" (p. 28).

The argument that the TAAS is not related to real improvements in achievement is first supported by the assertion that "much of the improvement in the scores can be attributed to the increased dropout rates and increased retention rates in the ninth grade. Indeed, a minority student has only a 45 percent chance of getting through high school without being retained one year, while Anglo students have a 72 percent chance of getting through high school without being retained one year" (p. 29). The former commissioner of education "agreed that he was very concerned about the increase in exemptions for special education in Texas schools from approximately 100,000 to approximately 150,000 in one year" (p. 29). Another argument is that schools have been instructed by the TEA on how to quickly raise their TAAS scores by concentrating on the "bubble kids" (those students who are most likely to pass the next TAAS test). In addition, part of the improvement has to be attributed to the significant improvements in the equality and level of funding in Texas's public schools between 1987 and 1995, according to the Texas Supreme Court (p. 30).

The Plaintiffs also challenged the educational necessity of the TAAS based on the validity of the test. Plaintiffs reported that the worse minorities do on a TAAS Exit Test question, the more likely the question is to be placed on the test (p. 32). The Defendant's psychometrician testified that she found the same correlation. An analysis of the test questions showed that on one question 71 percent of whites, 44 percent of Hispanics and 32 percent of African-Americans answered the question correctly. On the same test, for a question with the same objective and the same instructional target, the passing rates were 90 percent for Whites, 86 percent for Hispanics, and 84 percent for African-Americans. One witness reported, "The test construction methods employed by Defendants not only fail to detect and reduce potential item bias, but actually incorporate, generate, perpetuate and enhance any existing or potential item bias and overall test bias for both African American and Hispanic test takers" (p. 35).

The Plaintiffs challenged the test construction process. The director of the organization that develops questions for the test testified that not only did she not know the qualifications of the actual question writers, but the writers did not have to be from Texas nor did they have to have any particular knowledge of the curriculum (p. 35). In addition, none of the writers were Hispanic or African-American.

Plaintiffs pointed out that the State relies heavily on revolving committees composed of about twenty teachers to review TAAS test questions for potential bias and for adequacy of preparation (p. 36). The committee members

are not experienced in statistics, question development, or test construction. The Plaintiffs questioned how twenty teachers can adequately represent the 6,000 campuses and approximately 200,000 classrooms in Texas schools (p. 36). In fact, "the committees meet for approximately two days, and on average have about three minutes to review the language and the statistics for each of the questions that they do review" (p. 36).

One witness used factor analysis to "show the difference between creating items that are theoretically related to certain objectives of the State curriculum and how students actually perceive the items" (p. 37). He found that the racial groups are perceiving test items differently. He summarized his findings as follows: "The Exit level TAAS administered in the spring of 1997 has such a divergent factorial structure by ethnic group, especially in the Reading and objective Writing sections, that one can only conclude that the test generally measures different factors for the different ethnic groups. Some of the problems involve both item design and selection" (p. 37).

The content validity of the test was challenged by the admission of the Texas Commissioner of Education that when the test was implemented in 1990 it covered matters that were not taught in the curriculum (p. 40). "Thus, the State validated the test and set the cut score based on a set of items which may not have been part of the classroom content at the time the TAAS Exit Test was first implemented. This fact is important. Later versions of the test are based on the subpopulation statistics developed from the field test items, so each version of the TAAS Exit Test locks in the inequities created by the first test that had improper content" (p. 40). In addition, the curricular validity was challenged by the fact that when the test was being developed during 1989–1990, "Texas did not undertake any sort of comprehensive survey of school districts, teachers, students or the actual textbooks that it used in its classes in order to determine whether the TAAS Exit Test was in line with the curriculum being offered in Texas public schools" (p. 40). The Texas Commissioner of Education and the head of assessment for the TEA agreed that in 1990 the TAAS Exit Test was covering matters that were not being taught in the public schools (p. 41).

The instructional validity was also challenged for a number of reasons. The Plaintiffs assert that "there is very significant evidence in the record that there was not an opportunity to learn what was on the TAAS Exit Test" (p. 41). Another reason is the significant difference between the availability of certified teachers in high-proportion minority schools versus high-proportion white schools (p. 42). This is related to the fact that "Anglos are much more heavily concentrated than minorities in districts labeled exemplary and recognized" (p. 42).

Finally, the issue of educational necessity was challenged when the "defense witnesses agreed that there is no

information showing a relationship of TAAS test scores to performance in later life either in the work world or the college world" (p. 46). This is discrepant with the mission of the State, which was "to create a curriculum that would prepare students for success after high school, and to use the TAAS Exit Test to measure that competence" (p. 46).

Alternatives to the TAAS Exit Test

The Plaintiffs presented less discriminatory and equally effective alternatives to the State's use of the TAAS, which would also meet the State's objectives.

These alternatives fit into five categories: (1) Returning to the system used in Texas before 1987 and used in thirty of the fifty states granting a high school diploma based upon students' successful completion of their high school course and other state requirements; (2) using a sliding scale combining the various TAAS Exit Test scores and a student's GPA into a system that would allow a higher grade point average to offset TAAS scores below the 70 percent cutoff; (3) implementing the alternatives outlined and described in detail in a 1996 TEA study of alternatives to the State's use of the TAAS Exit Test; (4) implementing the alternatives to the State's exit test that were recommended by TEA to the state board of education, 1992–1993; (5) adopting individual witness recommendations on less discriminatory alternatives to the TAAS Exit Test; and (6) establishing parent-teacher review committees to determine whether students have mastered the curriculum despite failing the TAAS Exit Test (p. 48).

Plaintiffs reported that "in 1996, TEA hired a private consulting firm to present a series of alternatives to the state legislature to the TAAS Exit Test. The Texas legislature has not adopted any of these alternatives" (p. 50). These included:

- Allowing students who receive an associate degree to receive a high school diploma
- Allowing students who pass the Texas Academic Skills Program (TASP) and who have met all other requirements to receive a high school diploma
- Requiring that remediation plans be filed for students scoring below a certain level on the TAAS
- Contracting for a professional development system to assist school districts with the development of remediation programs
- Allowing workplace certifications
- Judging students' performance based on portfolios of their work
- Basing a passing score on the TAAS on a cumulative score from the three parts of the test (p. 51)

Also, the Plaintiffs reported that in 1992–1993, TEA staff recommended to the state board of education a redesign that would be based on performance tasks, projects, portfolios,

criterion-referenced tests, and a norm-referenced program. These were not adopted.

Questions and Commentary

After reviewing all of the legal arguments and opinions, I think that it is important to recognize that this isn't just a clinical exercise of intellectual argumentation, but a situation that has adversely affected tens of thousands of people over a period of ten years. Unfortunately, most of those tens of thousands have been and will be African-Americans and Hispanics. The human cost of this standards initiative is amazing, especially in light of the fact that the deleterious effects continue throughout the individual's life.

What is also disconcerting is that everyone is aware of this cost. Regardless of the Court's decision, the Plaintiffs raised concerns substantiated by evidence that were also recognized to be problematic by both the Court and the Defendants. If the State maintains its course and does not respond to the minority concerns, will this be due to the classic bureaucratic intransigence to change, to a stubborn arrogance by the controlling majority, or to a racially motivated agenda?

This debate over standards is about more than student achievement. It is also about defining the role of minorities in Texas and in the nation. It is also about providing access to societal roles that lead to money and power. I wonder if this battle in Texas over TAAS is nothing more than an extension of the culture wars between the Right and the Left. Is this battle merely a skirmish in the greater conflict centered on cultural pluralism or the assimilation of minorities into white majority culture?

From a psychological viewpoint, the standards initiative in Texas is almost entirely motivated by negative reinforcement. In classic negative reinforcement, the subject responds the correct way (correct determined by the experimenter) only to avoid a negative or adverse outcome. However, an argument could be made that the TAAS situation is not an example of negative reinforcement but actually punishment. Punishment occurs when the subject cannot do anything to avoid the adverse outcome. Undoubtedly, the evidence presented by the Plaintiffs clearly indicates that some children are being punished. If some children haven't been taught the test content in school, some questions are constructed in a way that means some children can't possible answer them; and some children are not allowed to compete because they are tracked or labeled; then there is nothing that these children can do to avoid the punishment that will stay with them their whole lives. Psychologically, negative reinforcement is considered an effective behavior modification tool but less desirable than positive reinforcement, but punishment, in this case, is unconscionable. It appears that the TAAS can not only be challenged as it has been by the Plaintiffs, but also challenged by its poor use of psychology.

The people of Texas should be con-

cerned about another aspect of TAAS. As we enter the new millennium it has been made clear by pundits of all stripes that we need to move beyond the old factory system of education toward a more relevant model—one that produces autonomous, creative, and critically skilled individuals. The evidence provided by both sides indicates that the TAAS is deeply entrenched in the factory system paradigm of education. It is important for us to remember that the factory system of the past century had a strong racially biased component that was not challenged until the 1960s. Is this the direction that the people of Texas are comfortable with—the direction in which they want to go?

Finally, as I reviewed this case, I was struck how this situation represents a classic example of our political system—right out of an old "problems of democracy" course. Essentially, a group of United States citizens feels oppressed by the actions of their legislative branch and unsuccessfully seeks relief from their judicial branch. What is the political lesson to be learned? First, the legislature must be targeted through lobbying, campaign contributions, and voter registration drives. Second, presidential elections need to be taken seriously due to the ability of the president to appoint federal judges. If a conservative president has the opportunity to appoint an inordinate number of young and conservative judges, the effect of his or her action will last a long time. In fact, because of the judges' ability to develop an imposing legal precedence supporting conservative interpretations of legislative action, the effect will indeed last for a long time.

This legal action by the Plaintiffs was especially significant due to the fact that the legislature in Texas only meets every two years. Also, the position of governor in Texas is a constitutionally weak position. Therefore, the regulatory agencies established by the legislature have great power. Without the support of the Court and with the political structure of Texas, things do look bleak for those represented by the Plaintiffs.

As I studied this information through the context of history, I wondered what position Dr. Martin Luther King Jr. or even Lyndon Baines Johnson would have taken on this issue. I wondered what they would have said or done about the consequences of the high-stakes test for the African-American, Hispanic, and poor white children of Texas?

Notes

1. The *Houston Chronicle*, on January 9, 2000, reported that "Prado, 52, a graduate of the University of Texas School of Law, was appointed to the federal bench in 1984 by President Reagan. He was one of the first Hispanics in San Antonio to ally himself with the Republican Party." The *Chronicle* also reported that "he refused to slice the Alamo Heights school district into single-member voting districts last year, which would have concentrated minority voting strength. But he also declined to free Midland public schools from federal oversight of their school desegregation efforts."

2. High-stakes testing is when failure

to pass an exit-level exam bars a student from graduation. In the case of Texas, if students successfully complete all course work and meet all other school requirements, they still cannot graduate if they fail the TAAS test. One witness testified that TAAS is the single highest stakes test because it not only determines who gets a diploma but because it is also used to rate schools and evaluate teachers.

3. MALDEF has decided not to appeal this decision. In an interview for a newspaper article in the *Houston Chronicle* on February 8, 2000, MALDEF lead attorney Albert Kauffman stated that "this has been an extremely difficult decision for us. We feel there are serious errors in the facts and law of the decision, but we have to weigh the chances of success against the chances of creating a bad (precedent) in this area of the law." In the same article, Jim Nelson, the education commissioner of Texas, said that "it means that the litigation surrounding the test is now over and those of us at the Texas Education Agency can concentrate on continuing to prepare our schools for the changes and challenges that lie ahead." The article included a comment on the current project of the TEA. "TEA is in the process of developing a new and more difficult exit-level test that will be administered beginning in the year 2004. At that point, a new test will be added at the ninth grade and the exit exam will be moved to students' junior year and will become more rigorous with the addition of tests in Algebra, geometry, social studies and third-year English. The changes in the test were mandated by the legislature. Once they are enacted, it will mean that students face high-stakes testing from the third grade through the 11th grade."

4. In most Texas schools and communities, the problem of student achievement that in many cases dominates the local educational system is centered on the African-American and Hispanic students. The rating of the school, which is a reflection on the community, is directly associated with those students who do not pass the TAAS Test. This unequivocal focus on minority achievement is due to the disaggregation of the test results into racial categories. One outcome of this focus is to perpetuate the invisibility of whiteness. African-American and Hispanic children are perceived to be the problem due to the perception that it is their *personal* inability to do what is necessary to achieve. Rendered invisible by this focus is the fact that the policy makers and primary decision makers of this standards system, who are predominantly white, are complicit in the problem. Because of the rules of the game, established by the white majority, the minority children and poor white children are held accountable for the educational woes of Texas. The burden and pain of accountability falls squarely on the shoulders of the minorities, once again hiding the participation of the majority.

5. In 1984 the Texas legislature passed the Equal Educational Opportunity Act (EEOA), which was designed to impose an accountability system on Texas public school administrators, teachers, and students (p. 13). "The Four-Fifths Rule finds an adverse impact where the passing rate for the minority group is less than 80 percent of the passing rate for the majority group" (C.F.R. § 1607).

6. The Plaintiffs "defined practical significance both in terms of the number of minorities who would have passed had their passing rates been the same as whites and by the importance of the interest implicated by the test, i.e., receiving a high school diploma or being discouraged from continuing high school education" (p. 9).

7. In Texas, a second way of satisfying the testing part of the graduation requirements is to pass end-of-course tests in designated courses such as algebra I, English II, and biology or U.S. history. These tests are given at the end of the courses and can be retaken if a failing score was made. The Plaintiffs argued that "in addi-

tion, the results of the alternative tests, i.e., the set of end-of-course tests that a student may pass to avoid the TAAS Exit Test requirement, show significant adverse impact against Hispanic and African-American students. Specifically, on the first 'live test' of the algebra exam 40 percent of whites, 14 percent of Hispanics, and 11 percent of African-Americans passed the test. On the latest administration of the algebra I test, 52 percent of whites, 26 percent of Hispanics and 20 percent of African-Americans passed the test. There was also significant adverse impact in the results of the biology alternative tests" (p. 9).

8. The Plaintiffs noted that "students who have not been identified as eligible for special education and are later determined special education exempt after failing the test raise the concern of arbitrary 'reconsiderations.' These students are also predominantly minority students" (p. 11).

9. "These categories, often referred to as the real causes of test performance differences include: (1) economically disadvantaged; (2) eligible for Chapter I/Title I financial support; (3) participating in special education programs; (4) identified as At-Risk; (5) participating in vocational education programs; (6) foreign exchange students; (7) participating in bilingual education programs; (8) participating in ESL programs; (9) designated as limited English proficient; and (10) designated as migrant students" (p. 12).

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A POSTFORMAL CONVERSATION ABOUT STANDARDIZATION AND ACCOUNTABILITY IN TEXAS

Raymond A. Horn Jr.

As the presidential election of 2000 moved into high gear, once again education became an important political issue with each side vociferously promoting their differing panaceas, pausing only to agree that the current state of education is inadequate at best and in some cases deplorable. One problem with this continuation of the politicizing of education is that educational policy, based on this contentious electoral debate, will actually be established. Another problem is that these policies will affect American education for many years to come. Does this mean that these policies represent poor educational decisions?

History suggests that indeed many of these politically driven policies will prove to have little or no effect on the quality of our education, and some will actually decrease the quality of our education by promoting inequitable policies that are in reality detrimental to large segments of our population. However, the main purpose of this discussion is not to critique the political positions of the candidates in relation to educational issues, but to look at an even greater problem—that of the conversational process that characterizes public discourse about education.

The nature of the conversation used by the public to engage educational issues is significant, not only in relation to particular educational issues, but also in relation to decision making in a democracy. How we discuss public issues, such as educational issues, defines the type of democracy in which we live. How we discuss public issues defines how we view ourselves, those like us, and the Others. How we discuss public issues is indicative of our knowledge base and skill level concerning our ability to think independently and critically of politi-

cal, economic, and ideological interests that vie to control our thoughts and behavior.

The argument presented in this chapter is that the public needs to develop postformal conversational skills that will allow them to sift through the politically superficial rhetoric about educational issues, and base their decision making on a deeper and more complex understanding of the issues. This argument will be developed by first deconstructing the nature of current educational conversation.

Initially, current public conversation about education will be explored. This will be followed by an example of a critique of the Texas standardization and accountability system through a postformal lens. The Texas situation is an exemplary example of the politicization of an educational issue, and of the public's inability to critically converse about an educational issue. The standards initiative in Texas has had a deleterious effect on large numbers of Texans, and due to George W. Bush's election, has the potential to be introduced on a larger national scale. The critique of the Texas standards initiative will then facilitate the theoretical explanation of postformality, which will include an explanation of postformal conversation and the understandings gained by those who postformally converse.

Standardization and Accountability in Texas

Starting in the late 1970s, Texas has evolved a system of educational standards that apply to kindergarten-through-twelfth- grade public schools and higher education institutions that certify teachers and administrators. Accompanying these standards is a comprehensive accountability system that relies on high-stakes exit-level tests. The phrase "high-stakes exit-level tests" refers to the situation where to graduate from high school, acquire a certification to teach in a public school, or acquire an administrative certification that allows one to be a principal or a superintendent depends solely on your ability to pass a standardized test. Therefore, the stakes are high when you take the test at the end of your program. Course grades, university degrees, class rank, or any other type of assessment is not a factor in your ability to graduate or receive the certification. It all depends on the test.

Public school students are tested in grades three through eight to determine their mastery of the reading and math portions of the test and take the exit-level test in grade ten. After the tenth-grade test, students have eight more chances to pass the test. If they fail to pass, they do not graduate, and exit school without a diploma. In the 2002–2003 school year, a law now in place will require all third-grade students to pass the test before they may be promoted to fourth grade. All test results are disaggregated according to racial and economic categories.

Initial accountability starts with the school in that each individual campus in a school district receives a rating from the state based on the test re-

sults. Campuses can be rated academically unacceptable/low performing, academically acceptable/acceptable, recognized, or exemplary. Because each school is rated, the accountability system connects student performance to the professional evaluations of teachers and administrators. In many cases, teacher and administrator job security and pay increases depend on the test results. The professional development of teachers almost exclusively revolves around techniques that will secure better test scores.

In teacher and administrator preparation programs, students once again must pass an exit test to be certified by the state. As on the public school level, test scores are racially and gender disaggregated. The preparation programs are held accountable by an intricate interpretation of the results, and can be placed under review if all racial and gender categories do not attain the target score. If placed under review, the program has two years to get off of review, or a monitor is assigned by the state to oversee the program. If the program does not get off of review the following year, the program loses its ability to certify teachers and administrators. In almost all cases, this would be a deathblow to the preparation program, if not to the institution of which it was a part.

On all levels of standardized testing in Texas, Hispanics, African-Americans, and poor Anglos invariably score the worst on the tests. The state also monitors school attendance and dropouts, and these statistics are part of the accountability rating system for the public schools. Traditionally, Texas has had a high student attrition rate among minorities and the poor, in many cases ranging in the 50 and 60 percent range. During the standardized testing of the 1990s, student attrition has remained high.

The state-mandated public school curriculum that represents the standards is not currently aligned with the tests. Therefore, teachers utilize class time to repetitively drill students on sample questions from the test. It is common practice for schools to offer prizes and awards for student performance on the test and to engage in pep rallies and other motivational activities in the weeks prior to a testing date. Setting aside part of the school day where all teachers drill the students on test-taking procedures and test facts is also a common practice.

This short synopsis of the Texas system does not adequately profile the complexity and rigidity of the system. Further reading would provide additional details as to the pervasive control of the State of Texas over its educational system. The intent of this synopsis is merely to provide an overview of the system that will inform the larger purpose of this chapter.

Current Public Conversation about Education

There is a difference between conversation aimed to achieve a political goal and conversation whose purpose is to foster a deep and critical understanding of an issue. The term "critical" is a key concept in our conversation. In

this case, it relates to the ability of the conversants to uncover and understand the implications that a proposal or action has in relation to the power arrangements among the people affected by the proposal or action. Actually, all public issues have a critical component in that all public policy making affects the power arrangements among segments of our society. In the case of educational standards and accountability, the type of standards, technical or complex,[1] and the purpose, organization, and structure of the accompanying accountability system[2] can empower some segments of our population while disempowering others.

Unfortunately, technical standards with rigid and inequitable accountability systems not only reproduce existing oppression of traditionally oppressed groups but also limit the quality of education of the majority of students.[3] In addition, voluminous arguments critical of the Texas standards and accountability system have been made in print media and in the courts. However, the continuation of the Texas system and its spread to other states indicates either a pervasive agreement with the system or ignorance of the system's deleterious effects on large segments of the Texas population. To understand this phenomenon, we need to examine the nature of the public conversation about educational standards and accountability. What then is the public conversation in Texas concerning this important public issue?

Dueling Monologues

Actually, conversation about the Texas standards movement has recently greatly increased due to the presidential election. However, the nature of the conversation primarily has been a discussion, in that both sides (those in favor and those against standards) have staked out strong positions and used emotion and logic to strengthen their position and strive to win the debate. This type of conversation is characterized by defensive behavior used to protect one's position, by controlled discussion that advocates one's position and competes with the opposing position, and by debate that is resolved to beat down the opposing view and win the conversation (Isaacs, 1999). This type of conversation was showcased in the recent federal court case over the public school standards (*GI Forum v. Texas Education Agency (TEA) et al.*, 2000). What conversational form is not evident is dialogue.

Dialogue is when differing groups suspend their mind-sets and engage in a conversation in which both groups listen to what each is saying and try to connect with each other's position. In dialogue, people do not treat each other as objects but recognize the humanness of the other's existence (Sidorkin, 1999). Another way to define dialogue is to see it as "a conversation with a center, not sides. It is a way of taking the energy of our differences and channeling it toward something that has never been created be-

fore. It lifts us out of polarization and into a greater common sense, and is thereby a means for accessing the intelligence and coordinated power of groups of people" (Isaacs, 1999, p. 19). William Isaacs further describes dialogue as "a conversation in which people think together in relationships. Thinking together implies that you no longer take your own position as final" (1999, p. 19).

According to Alexander Sidorkin's (1999) explanation of monologism, the position of the State of Texas and its supporters on the standards initiative has been and continues to be monological. Sidorkin maintains that "the first feature of monologism is the separation of ideas from individuals," in which the other person becomes objectified, or, as Sidorkin continues, the other person is explained "in a way that robs this other of very important aspects of the human way of being" (1999, p. 28). In the more than twenty years in which the Texas standards have unfolded, one continuity in the state's actions has been the lack of regard for individuals. In other words, the state's rigid adherence to accountability procedures, even though tens of thousands of people have been affected in a deleterious way, indicates their ability to treat people as objects to be used for their ends. This is evident in that people are seen and projected as percentages and numbers with a significant percentage of these determined to be an acceptable loss in relation to fulfilling the state's mission.

Sidorkin (1999) also describes monologists as those who subscribe to a singular consciousness. Simply, this is when people do not see or value a multitude of consciousnesses. Their reality, or how they see reality, is the only reality. This was evident in the lack of response by the state to the legitimate concerns raised by the plaintiffs in the court case. After the court's decision sustained the Texas system, the state continued with its program without any recognition of the plaintiff's position. Perhaps Sidorkin's comment explains the state's behavior: "In the monological world, the conception of truth is different. There exists a singular truth, a singular ownership over meaning there, either by an individual, by a group, or by *no one* (God)" (1999, p. 30). Sidorkin (1999) proposes a polyphonic truth in which many different voices join together in a higher dialogical unity that may not lead to consensus, but does lead to voices that "argue each other's real, and not imagined positions" (p. 30). This polyphony is in contrast to the cacophony that is created when both sides misrepresent each other and objectify each other.

A final way to discern dialogical conversation from monological is through the lens of morality. Sidorkin (1999) argues that in the dialogical perspective, morality is twofold. "The first position is in accordance with whatever principles or moral rules one possesses. In the second position, a person also would judge any possible solution from the point of view of conscience (love, mercy), trying not to

inflict harm on other people involved" (p. 47). Certainly, over the last twenty years, the incredibly large number of students who have not graduated from high school or have not gained teaching or administrative certification because of one high-stakes exit-level test indicates an adherence to principles exclusive of conscience.

If the State of Texas is engaging in monological conversation, what about their critics? The monological position of the State of Texas directly affects the conversational options available to their critics. All attempts to engage in a dialogue about standards and accountability have been rebuffed by the state. As an example, in the recent court case, the plaintiffs were clear that they were not against the standards, the accountability system, and the use of the test, but merely wanted the test to not be the only determinant of a child's academic success. As in all cases, the state responded by reiterating their position. This singular consciousness necessitates a conversational response other than dialogue. The argument will be made that an appropriate response would be for the opponents of the current system to engage in postformal conversation. However, before we move to a postformal perspective, where is the general public in this conversation?

Public Acquiescence

To understand the conversational position of the general public, it is necessary to understand the educational context of the public. Except in rare instances, the general public's educational experience consists of traditional, teacher-centered, and transmissional curriculum, instruction, and assessment. The public is more familiar with schools as places housing authoritative bureaucracies than schools as places of democracy and creativity. Most people have experienced education as largely inauthentic and irrelevant to significant aspects of their lives; undoubtedly, the greatest relevance occurred in their extracurricular activities. At least within the last two decades, their schools were greatly affected by the efforts of the business community to utilize schools in achieving their economic goals. Generally, the schools experienced by today's parents were not centered on the development of the individual in relation to the individual's needs and wants. Business interests, not the individual, drove the policy making related to curriculum and instruction.

In addition, since the 1980s the public has been conditioned to be responsive to conservative code words and conservative spin. They expect, almost demand, sound bites of information instead of substantive commentary. Simplicity rather than complexity create comfort and security. Participation in education is defined as supporting one's child's extracurricular activities, and perhaps occasional attendance at required formal functions; not as participation in a complicated conversation about educational policy. Those who are concerned for ideological or religious reasons move their educational experience to the

private sector or home schooling. Some become politically involved in PTAs and school boards, but, in relation to the vast number of parents who have minimal contact with policy making, they are a distinct minority.

Within this rather bleak but accurate portrayal of public involvement in educational policy lies part of the answer to the public's position in the conversation. Another part is related to the previous context in that, because of their prior educational experience, the public is more receptive to simplistic policies, such as technical standards and inequitably rigid accountability systems, merely because they understand them better. This understanding is fostered not only by the relatedness of their experience to the simplistic policies, but also because those promoting the simplistic policies are better positioned to and more adept at communicating their positions to the general public. An analysis of the commentary concerning the court case in the Texas newspapers clearly reveals a public receptivity to not only code words but also to attitudes about minority groups, the poor, and ideas such as rugged individualism and survival of the fittest.

In Texas, the state bureaucracy is an example of domination by a serving agency (Sidorkin, 1999). Here parents and students are "in a position of clients not quite capable of taking part in determining what is good for themselves" (Sidorkin, 1999, p. 35). Concerned only with its own smooth operation and the reproduction of its needs and culture, the bureaucracy "defines a 'needy class,' and creates a group of people personally powerless. The bureaucracy establishes certain means of control over the clientele, first by the power of a selecting process. The bureaucracy decides which services are to be provided without much inconvenience and convinces the clientele that their perception of their own needs is fallible, that they cannot adequately judge the services they are receiving" (Sidorkin, 1999, p. 35). Through a testing accountability system the State of Texas has defined a needy class (those who cannot pass the state-constructed test at the levels determined by the state), and rendered students, parents, teachers, and administrators powerless through the requirements and sanctions of the accountability system. The result is that the clients essentially have no control over the services provided by the bureaucracy, and are in essence controlled by the bureaucracy. The monologic conversation that characterizes bureaucracies "is not merely a philosophical position, but a selfishly motivated way of thinking" (Sidorkin, 1999, p. 35) that hurts individuals at the expense of the bureaucracy's agenda.

To this point we have seen that the current public conversation about standards and accountability systems is generally monological. Those favoring standards, such as the Texas educational policy makers, use emotion, logic, and bureaucratic structure to solidify their position, and monologically do not listen or include others in the policy making. Those opposed to

aspects of a system like the Texas system are required to conversationally reciprocate the same kind of emotion and logic, which once again is inherently monological. Conversationally, the two camps never connect. In addition, the public acquiesces to the dictates of the state bureaucracy because of past experience, the current attitude toward education, and the effectiveness of the bureaucratic attempts to disempower it.

This is the conversational context of education as election 2000 continues, and this is the context in which educational decisions that will have a long-term effect will be made. Whether standards, vouchers, or privatization of schools, is this the conversational context that produces the best decisions for all segments of our society? The argument will now be made that another type of conversation needs to be promoted—postformal conversation. Instead of explaining postformalism, first an example will be presented of the type of inquiry present in a postformal conversation, and this will be followed by a theoretical explanation. Since a postformal conversation would be difficult within the confines of this chapter, questions will be posed that reflect the nature of a postformal conversation about the Texas standards initiative. The questions represent the types and direction of inquiry that is characteristic of postformal conversation. However, this inquiry needs to be understood in relation to the two potentials of postformal conversation.

First, postformal conversation can potentially facilitate dialogue. If all of the participants agree to temporarily suspend their mind-sets, listen to each other, and attempt to connect as human beings, postformal conversation can facilitate deeper understandings. However, if an oppositional relationship is maintained, then the disempowered group can use postformal conversation to strengthen themselves and their oppositional position toward the oppressor. Within their postformal conversation they will utilize diverse processes to broaden their knowledge about the context of their situation, delve deeply into the origins of the beliefs and knowledge about their situation, and uncover deep, hidden patterns that will lead to a more complex understanding of the situation. And, through this complexity, they will find power.

Texas Standards through a Postformal Lens

Questions about Context

What about the context of the Texas standards initiative? What am I not seeing? What do I not know? What am I hearing and not hearing? What is the history of standards in Texas, in the USA? Are there different types of standards and accountability structures? Who (individuals, groups, political parties, special interests) initiated and promoted the standards and accountability movement? What are the conservative, liberal, and radical

positions on standards? Who had no voice in the policy making? What outside influences have affected education in Texas? What is the human and financial cost of this standards and accountability system? How do the costs compare to the benefits? Who pays the costs and reaps the benefits? If the money and energy that has been committed to the current standards system supported other types of educational reform, how would the benefits to our children be different? What kind of knowledge is being tested? Is this what our children need to know? What kind of test is used? Is the test valid and reliable? Who wrote the test? What are the consequences and are they fair for all segments of the population? Are the public school and higher education standards aligned? What is the significance of this alignment or nonalignment (in relation to state control over curriculum, instruction, and the knowledge base)? What effect has the test had on minorities and the poor? Is the high dropout rate reinforced by the standardized tests? Does the high dropout rate reinforce youth gang activity and juvenile delinquency? What power arrangements within our population are being reproduced? Whom does this testing empower and disempower? How will this affect our community? What kind of community do we want and will the testing promote this? Are the standards relevant to our current and future needs? Is the standardized system forward-looking or rooted in the past? What kind of schools do we want, ones in which we transmit knowledge or ones in which we transform individual students? What is the purpose of school, to meet our children's needs or those of the business sector? What are the moral and ethical implications of the standards? Are they just and caring?

Questions like those in this short list would reproduce countless other questions whose answers would form a broad knowledge base, a highly detailed landscape that would quickly move the issue of standards from one of simplicity to one of complexity. Intertwined with context is etymology, or the inquiry into origins.

Questions about the Origins of Related Knowledge and Beliefs

What is the history of standards in Texas, in the USA? How did they come about? Where did my current opinions and interpretations about standards originate? Where did the current opinions and interpretations about standards held by my neighbors, people who are different from me, local educators, and state officials originate? How accurate are these opinions and interpretations? How do my opinions and interpretations about standards and accountability relate to my opinions about people who are different from me? How do my opinions about standards compare to my core beliefs and values? Are the outcomes of the standardized accountability system compatible with what I believe? What social forces are shaping my

opinions? Is there knowledge that I need to acquire that will challenge my current view of the standards system? What are the implications of the standardized accountability system for race, gender, and social class? What are the problems that are supposed to be resolved by this system? How did these problems come to be? Will this system resolve these problems? What new problems are created by the system? What are the contradictions between what this system is supposed to do, and what is actually occurring?

As people converse postformally (exploring and expanding the context and origins of the issue), patterns emerge, not the simplistic easily seen ones, but patterns that are more complex and harder to discern.

Patterns That Provide Deeper and Broader Understanding

In relation to the Texas standards and accountability system, a postformal conversation would search for and assuredly uncover patterns and structures that are not readily discerned. A rule of thumb is that little is as it appears to be on the surface. Where would patterns emerge? Overt or covert or intentional or unintentional patterns would emerge linking various groups and philosophies. Political, ideological, and economic interests are undoubtedly linked in supporting hidden agendas and in creating societal structures not easily seen. An examination of coalitions between these segments of our society and bureaucratic organizations would reveal patterned behavior. Historical patterns of racism, ethnocentrism, and sexism may emerge within a locality or on a national scale. Seemingly unrelated cultural patterns may actually reinforce the acceptance or rejection of beliefs and outcomes related to a standards and accountability program. For instance, if historically African-Americans, Hispanics, and poor Anglos represented a society's underclass, would the general society show significant concern if these same people were most effected in a harmful way by a standards system? Would their lack of concern in relation to this current issue of standards merely be an extension of a historical cultural pattern of behavior?

What Is Postformal Conversation?

Postformal conversation is based on a thinking process, postformal thinking, that moves the individual beyond the formal thinking of the industrial age. It is a process required for those who want to more fully understand the information age. As in postformal conversation, there are no formalized rules or stages in postformal thinking. The four-part structure reported by Joe L. Kincheloe and Shirley R. Steinberg (1999a, 1999b; Horn, 1999) is a view instead of a formula. Through the use of multiple processes, the exploration and expansion of one's knowledge about a situation (as represented by the context and origins of knowledge) allows the discernment of complex and hidden patterns. How-

ever, this is not a linear or stepwise process, but a dynamic, interrelated, and ongoing mix of affective (emotion) and cognitive (reason) activity. Emotion, reason, context, origins (etymology), and process are all intertwined.

What drives postformal conversation (when people individually or collectively converse postformally) is the postformal thinkers' concern with social justice and caring. Sidorkin's twofold lens of morality is an appropriate expression of the postformal center. A postformal exploration of context and origins, and a continuous critique of emerging patterns, is securely centered on moral principles *and* conscience. Just as the Texas standards system can be perceived as utilitarian and pragmatic, so can postformal conversation. However, the significant difference lies in what centers each view. As a political project, postformal conversation seeks to effect change that is socially just and caring to all segments of society. As a political project, initiatives like the Texas standards seek to effect change that promotes the interests of particular segments of society. An additional difference is in the processes utilized to achieve their political goals. A postformal process is holistic and continuously critical of the holistic image that has been generated. A formal project is reductionist in that parts of the whole command all the attention, therefore obscuring the larger picture, which more accurately portrays the truth of reality at a given point in time. In addition, the views of reality developed through this reductionist process are not critiqued or challenged but rigidly become the ongoing view of reality.

The nature of postformal thinking is to broaden our understanding of complex situations by broadening our inquiry into the complex reality of that which we seek to understand. Unlike the myth of formal modernistic thinking, which claimed absolute truth could be discerned, postformal thinking understands that, due to the dynamic ever changing condition of reality, understanding is also an ongoing process. The four explanational categories of postformal thinking must be understood as interactive, integrated, and ongoing. Postformal thinking is a continuing process, not a mechanism to reach an end state. The four categories that characterize postformal thinking are intended as *moving* guideposts that require continuous reflection.

Context

First, context refers to the interrelated conditions in which something occurs: setting, environment, place, people, events, past, present, future, and so forth. What do we know about the context? How has/does the context affect the current situation? How do we enlarge our understanding of the context?

Contextualization is what makes a story, in book or movie form, a good story. What are the circumstances? How does one particular setting or place create a different understanding

of the same phenomenon that occurs in another place? Would a standards model in one place be appropriate for another place? What are the broader temporal, spatial, or ideological aspects? How is indigenous knowledge utilized and valued? Who are the "players" in the story? What is their interest, and how do they achieve that interest? How have the standards affected all of the people in the system? These questions in addition to the previous questions represent an exceedingly short list of contextual questions. A postformal thinker generates contextual questions that provide a wealth of information. A postformal thinker searches for and values details.

Kincheloe and Steinberg (1999a) write about the subtle interaction of particularity and generalization. This refers to the valuing of the unique experience of each individual and of each place. Highly generalized and rigid standardized educational systems sacrifice this uniqueness or diversity, which is the essence of humanity. Diversity, not sameness, has the higher survival value (Gould, 1996). In the formal realm of modernistic thinking, personal emotions and personally constructed knowledge are devalued in favor of expert opinion, which is mostly derived from research that seeks generalizations. In a rigid standardization system the general is valued and the personal discounted. Herein lies the origin of two problems with systems of this nature. First, discounting the personal ensures a level of artificiality that guarantees a lack of relevance and authenticity in the system. In other words, the system is, in reality, disconnected from the people it is trying to serve, from the problems it is trying to solve, and even from its own goals. It just isn't real. Secondly, devaluing the personal facilitates injustice and a lack of caring about certain segments of the society the system is supposed to serve. It becomes easy to write off percentages of types of people as "acceptable losses." In other words, it is easier to treat people like objects or means to your own goals than as people, which, of course, they are. Context is about more than collecting additional facts; it is also about expanding our awareness of the personal—our awareness about how our actions affect other *people*.

It seems that context, like all aspects of postformal thinking and conversation, is about morality—specifically about social justice and caring.

Origins (Etymology)

Etymology is the study of origins and to understand any standards movement requires a critical study of how the standards came about. What are their antecedents? Who originated the idea/process? What was the agenda of these people? How has knowledge about standards been produced? How have social forces shaped our understanding of standards? What were the original problems that created this apparent need for standards? How have those problems changed over time? All of these questions, like the previous ones, deal with the origins of knowledge, values, ideology, and hidden

agendas. These are some of the etymological questions that a postformal thinker would ask about standards.

The postformal activity of exploring origins is a challenging process because to become aware of origins is to become aware of the hidden cultural patterns that are deeply engrained in our individual and collective emotions and thoughts. Our constructions about reality, or how and why things are like they are, are social constructions in that they were formed by our interaction with the culture in which we are embedded. The act of seeking origins invariably challenges not only our constructions of reality but also those aspects of our culture that are complicit in our constructions. Do we become uncomfortable when the possibility of a culturally and historically entrenched racism or sexism appears to support our current constructions about educational change initiatives? Of course we do because through this awareness we are now consciously aware that we are complicit as long as we continue to support a change that is even marginally supported by a historical and cultural pattern of racism. As Kincheloe and Steinberg write, "postformal teachers [thinkers] struggle to become aware of their own ideological inheritance and its relationship to their professional lives" (1999a, p. 62).

Another unsettling aspect of etymological research is what it tells us about our identity—who we are individually and collectively. As mentioned in the previous paragraph, what we discover when we etymologically dig deep may contest who we think we currently are. This is a significant challenge for those who wish to converse postformally, but also a liberating challenge.

Postformal thinking/conversation also requires us to think about our thinking. As cultural patterns and challenges to our identity emerge from our etymological explorations, we are required to critique how our thinking allowed us to be like that and later how we arrived at our new understanding. This thinking about thinking (metacognition) also has an emotional component that is clearly evident in the previous discussion of cultural patterns and challenges to identity. Exploring origins is not simply discovering origins and understanding how they affect our current ideas and behavior, it is also about exploring how our thinking and emotions facilitated the whole process.

Patterns

In conversing about the patterns that become visible through our exploration of context and origins, the participants in the conversation will acquire an ecological view in which the interrelatedness of all people and activity, in relation to the issue, will become apparent. Seeing the whole instead of focusing on the parts and recognizing the interconnectedness of the parts allows the conversants to factually and morally move to a more complex level of understanding.

Patterns imply continuity, regularity, and once again, agendas. What are the surface patterns of a standards

movement in relation to its organization, structure, and implementation? What are the hidden patterns, the deep structures, and the tacit forces that need to be made visible? How can we penetrate the "curtain of ostensible normality" (Kincheloe & Steinberg, 1999a, p. 68) that cloaks deep and hidden realities? What metaphors are used to promote standards and what metaphors can be used to more critically understand the patterns created by a standards movement, and the patterns that superficially represent the movement? Discovering and critiquing these patterns leads to a more complex understanding of standardized educational systems.

As patterns emerge, the postformal thinker applies the lenses of justice and caring. This is a difficult task because as patterns emerge we recognize our involvement in these patterns, and applying those lenses means that we are examining our own behavior through these lenses. There is no moral dilemma with the superficial patterns that are easily evident on an everyday level, because society in general, our place in particular, and our cultural history help us mediate the incompatibility between our actions and standards of justice and caring. However, when we engage the hidden patterns, we also become aware of the disingenuous complicity of society, of our local place, and our cultural history in masking injustice and a lack of caring. Discerning and confronting hidden patterns becomes a moral challenge that can be quite disconcerting.

Process

Postformal thinking and conversation is not magic. There are processes that can be used to uncover context, origins, and patterns. However, in the postformal context, process indicates new ways of reading the world. To transcend the simplistic notions of cause and effect (Kincheloe & Steinberg, 1999a, p. 76) requires the use of a toolbox of methodological diversity. To seek the truth in a postmodern world requires the use of all kinds of quantitative and qualitative method. Statistical analysis and postmodern deconstruction all have a situational applicability. The eclectic array of methods used by the postformal thinker may include ethnography, textual analysis, semiotics, psychoanalysis, content analysis, poststructural feminist perspectives, contextual analysis, critical hermeneutics, interviews, survey analysis, and phenomenology (Kincheloe, 1998, pp. 1198–1199).

The world and reality as we see it is complex. The inherent complexity of an issue like standardization of education requires an equally complex process of reading the world. Kincheloe sees this reading as an expansion of one's critical consciousness, which requires a bricolage of methods. Kincheloe (1998) writes that bricolage involves taking research strategies from a variety of disciplines and traditions as they are needed in the unfolding context of the research situation. Such a position is pragmatic and strategic, demanding a self-consciousness and

an awareness of context from the researcher. Through this bricolage one's consciousness encounters criticality, which is all about the power arrangements within one's society.

Power

Postformal thinking critiques and extends formal thinking by including considerations of power arrangements as contextualized by issues such as race, gender, class, sexual preference, age, and ethnicity. Additionally, postformal conversation is a dynamic investigation of our selves, our relations with others, and the political implications of the type of conversation in which we are engaged. Since the political implications affect gender, class, age, race, sexual preference, and ethnicity, postformal conversation includes a crucial ethical and moral component.

The political implications of conversation and the accompanying moral component must be framed by a consideration of power. Therefore, postformal conversation is a conversation about power. All conversation has a political or power component, and postformal conversation about education is about people becoming aware of how educational change is often only peripherally about the education of children, and more frequently about the realization of a special interest's political agenda. A postformal examination of the monological conversation of the standardization policy makers reveals no mention of power, which is sharply contrasted by a postformal reading of their policy and the policy's implementation.

Why Promote a Postformal Conversation about Standards?

There are advantages to conversing postformally about standards and accountability. If the goal is to gain a deeper understanding of a cultural and political phenomenon that will greatly affect our society, postformal conversation will facilitate this understanding. If a group has determined that the current standards and accountability system oppress them, engaging in this type of conversation will be empowering. If diverse groups desire to craft an equitable and caring standards and accountability system that will benefit all segments of our society, postformal conversation will foster this outcome.

Notes

1. Technical standards are standards based on facts, inferences, and opinions that are posed as concrete, valid, and reliable representations of past, present, or future reality. Included in technical standards are decontextualized critical thinking skills such as analysis, synthesis, and evaluation. These skills are considered decontextualized when their use is restricted to only one aspect of a problem situation. For example, when students are required to deductively or inductively evaluate an environmental problem in science class, but the activity is structured to avoid using these thinking skills to engage the political, economic, or ethical considerations of the problem, the students' critical

thinking has been decontextualized. Their critical thinking is decontextualized because a deeper understanding of any environmental problem requires engaging the activities of the political, economic, and other interest groups that benefit from the actions that are causing the environmental problem. Also, an activity such as this science activity is decontextualized if the student's own knowledge is not valued and solicited, and the only valid interpretations are those of the expert as represented by the teacher, the textbook, or the state-mandated curriculum.

Whether for mathematics, science, social studies, or language, technical standards represent what is known by society at that point in time and are essential elements in our understanding of the world. The problem arises when this knowledge base becomes a curriculum that is viewed as absolute and when this knowledge is simplified by isolating it from the larger context in which it is embedded. The problem is exacerbated when transmissional, teacher-centered instruction is used to "deliver" this knowledge to the student. Transmissional instruction is characterized by rote memorization—the "drill and fill" method of instruction. Also, in transmissional forms of instruction, critical thinking is structured as decontextualized, inauthentic activity that has no relationship to the deep, complex patterns in which all problems are embedded.

On the other hand, complex standards also require critical thinking, such as analysis, synthesis, and evaluation. The difference between technical and complex standards lies in the pedagogical intent to develop a critical ability in each student. Critical ability means that the students can utilize critical thinking skills to discern the deeper and hidden patterns of which their object of study is a part. It also means that students have the skills and knowledge to see existing power arrangements and how these are affected by changes in our beliefs and actions. Complex standards utilize the same knowledge base and array of critical-thinking skills found in technical standards. However, the significant difference is that complex standards are not intended to transmit politically and ideologically contextualized knowledge to students, but facilitate the development of the critical ability of each student to discern these contexts and therefore see the knowledge as it is situated in a broader, more complex system.

One criticism of complex standards is that they are political in nature. Indeed, like all of education, they are political. However, unlike technical standards, which can be used to reproduce certain ideologies or political agendas, complex standards are emancipatory in that they facilitate the critical skills that allow students to think for themselves. In addition, they are emancipatory because, as knowledge becomes more complex, issues of social justice and caring become more visible.

2. The Texas standards accountability system is a highly developed and rigidly structured system (Horn & Kincheloe, Eds., 2001). Just as there are standards for all levels of education (kindergarten through higher-education teacher and administrator certification programs, including standards for school board members), there are accompanying accountability structures. The purpose of the accountability structure is to guarantee that all people in the system will either adhere to the standards or not receive their diploma or certification. The accountability structure is based on high-stakes exit-level tests. This means that student success is determined solely and exclusively by one test at each level. In other words, regardless of a student's grade point average or class rank, if that student does not pass the test, the student does not graduate from high school or get certified as a teacher or administrator. Depending on the validity and reliability of the test, language or other cultural biases could discriminate against certain

segments of the population. Also, the knowledge base and academic skills required for passing the test can be manipulated to represent only certain types of knowledge and narrowly contextualized skills. The biases and manipulation of the knowledge base and academic skills create a situation where performance on the tests can greatly vary among segments of the population. If social advancement is dependent upon test performance, then the disenfranchised segments of the population are disempowered.

Alternative accountability systems include a variety of performance indicators (such as grade point average, class rank, portfolios) working in concert to determine achievement of the standards. Utilizing a variety of performance indicators creates a complexity level that diminishes the possibility of bias and inequity, and indicates a caring attitude for all segments of the population. This does not mean that the standards are less rigorous, it means that their accountability procedures are fairer. For a detailed look at the Texas standards accountability system see *American Standards: Quality Education in a Complex World—The Texas Case* edited by Raymond A. Horn Jr. and Joe L. Kincheloe, published by Peter Lang Publishers.

3. In Texas, besides having high minority student attrition rates (how many students are lost by the time of graduation), many low-performing minorities are entrenched in endless drill and memory work geared to passing the exit-level test, and consequently never experience curriculum and instruction that can add to their future success in society. Between 1995–96 and 1998–99 in Texas, 53 percent of Hispanic students and 48 percent of Black students, as compared to 31 percent of White students, were lost prior to graduation. In addition, because administrative and teacher jobs and salaries are tied to student performance on the exit-level test, significant amounts of time for quality curriculum and instruction for all students is transferred to the rote memorization of test facts.

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ASSESSMENT OF TEACHER PREPARATION PROGRAMS IN TEXAS

The TxBESS Activity Profile

William A. Jasper

Texas has initiated a new support system for teachers—the Texas Beginning Educator Support System (TxBESS). One component of TxBESS is the TxBESS Activity Profile (TAP), initially called the Beginning Teacher Activity Profile in Texas (BTAPT). The Activity Profile provides formative information to first-year teachers and also results in a rating for teacher preparation programs, in its current form. This rating may be used in the future to determine whether teacher preparation entities are accredited and whether these institutions can continue to prepare teachers for certification in Texas. Draft standards were developed and a pilot study is underway.

This article will cover Texas standards and accountability programs in education, a description of the Activity Profile instrument, training requirements for a program of this nature, and issues/concerns. The Activity Profile is a dynamic, evolving instrument that will certainly change from its present format as lessons are learned and improvements are made. The purpose of this article is not to make the reader an expert on the details of this instrument in Texas. Rather, the intent is to help the reader understand the issues, concerns, and complexity of the high-stakes TxBESS program. Deciding that educator preparation programs will be held accountable is an easy decision, and developing standards by which to measure these programs is certainly workable. The real difficulty comes in the implementation of a standards-based performance measure like the Activity Profile—to ensure that it is a fair system, that it does provide incentives to improve educator preparation programs, and that it is supportable by those in the field.

Background

The state of Texas is a leader in setting educational accountability standards. The statewide Texas Assessment of Academic Skills (TAAS) Test is required for students in grades three through high school in every public school in Texas, and passing the exit-level TAAS test is required to receive a high school diploma in Texas. Texas also was the first state to create accountability standards for teacher preparation programs.

In September 1998, the Texas State Board for Educator Certification (SBEC) initiated the statewide accountability system for the evaluation of teacher preparation programs at universities, school districts, and regional service centers. The Accountability System for Educator Preparation (ASEP), as provided for in Texas statute (Texas Education Code 21.045), involved the use of Examination for the Certification of Educators in Texas (ExCET) test scores. These tests are required not only for teachers to become certified to teach in Texas, but also for evaluation of teacher education programs. Test results, disaggregated by gender and ethnicity, are used to rate educator preparation programs as either accredited, accredited-under-review, or not accredited. In September 1998, thirty-five of the eighty-six programs in the state of Texas were rated accredited-under-review; the number of programs receiving this rating was reduced to ten in September 1999. Preparation programs failing to meet Texas State performance standards for three consecutive years will lose the authority to prepare educators for certification.

A pilot study began in January 2000 for the second phase of the ASEP program, which is used to evaluate educator preparation programs. The new program, called the TxBESS Activity Profile (TAP), is entering its first full pilot year in fall 2000. Eventually, all educator preparation programs in Texas will be held accountable for the actual on-the-job performance of their new teachers who become certified to teach in Texas and who actually teach there.

Texas has not received state funds to implement the TxBESS but has been awarded almost $12 million by a federal grant in August 1999, which was the largest award from the United States Department of Education under the Teacher Quality Enhancement Grants Program, Title II of the Higher Education Act. This three-year grant will enable Texas to develop a support structure under the TxBESS, which will involve collaboration among the twenty education service centers, educator preparation entities, Texas schools, and the business community. TxBESS objectives include:

1. Support and assess beginning educators through TxBESS
2. Implement the Activity Profile, an instrument that will provide formative information for the beginning teacher and summa-

tive information for that teacher's preparation program
3. Retain beginning educators by providing support and training
4. Improve the professional development of all educators
5. Facilitate partnerships with effective mentor programs in Texas schools
6. Improve student achievement

The TxBESS Activity Profile

The first purpose for the TxBESS Activity Profile (TAP) is to provide a formative profile of the actual on-the-job performance of beginning teachers, so that mentors and other members of the beginning teacher's support team will be more effective in improving the teaching skills of the beginning teacher. The TAP instrument will provide the structure for providing feedback to beginning teachers and will help in their professional development. The second purpose is to provide summative information about the quality of preparation provided to beginning teachers by their preparation programs. How well a beginning teacher does during an observation of his or her lesson planning, teaching, reflection, and professional growth will eventually serve as an indicator in the rating of the teacher preparation program.

The TAP instrument is based on the Texas Learner-Centered Proficiencies, which delineate what the beginning teacher in Texas should know and be able to do. The proficiencies are grouped into four major clusters on the instrument, which include:

1. Planning and preparation for learner-centered knowledge and instruction
2. A classroom environment that promotes equity, excellence, and instruction
3. Instruction and communication
4. Professional development and communication

For Cluster 1, the beginning teacher completes a class background information form, a beginning teacher profile, and an instructional plan form before the lesson is taught. These forms should take approximately 2–3 hours to accomplish. A trained observer will record Cluster 2 and Cluster 3 performance while the lesson is being taught. For Cluster 4, the beginning teacher will complete a reflection form after the lesson and will also complete a professional responsibilities form, with attached samples of record-keeping procedures and family communication. Cluster 4 paperwork should take the beginning teacher approximately 2–3 hours to accomplish. In addition, the mentor teacher will complete a professional responsibilities mentor questionnaire, which describes the beginning teacher's interaction with professional colleagues, how active the beginning teacher is in school and district projects or events, and how well the beginning teacher responds to student needs. The trained observer (which may be the

mentor teacher) will then evaluate, summarize, and rate the beginning teacher (informal) and the teacher preparation program (formal scoring that will be used for the ASEP in Texas, as currently planned). All of the Activity Profile forms and the instrument are currently scheduled during the first semester of teaching for the beginning teacher, with the lesson being taught in the third month of the first teaching assignment. However, during the spring and fall of 2000, this will be piloted at various points to provide information about the appropriate time to administer the Activity Profile.

TAP Training

Implementing this initiative requires extensive training for many educators at various levels in the education system of Texas. To initiate the program, Educational Testing Service personnel trained sixty education service center personnel, university faculty and staff, and public school administrators and staff during November 1999. This training consisted of observation techniques, detailed explanation of the instrument, and actual practice evaluating video clips of lessons. Four days were needed to train these personnel, most of which were already accustomed to evaluating teachers in the classroom. After this training, these sixty personnel were then certified to conduct training for the TxBESS Activity Profile. The main focus for further training is the observers—the personnel who will perform the formative evaluation of the beginning teacher and who will also make the summative evaluation of the teacher preparation program, as the program is currently designed. School administrators will first select the observers (many of which may also be the mentor teachers for the same beginning teachers), who will then be trained in the process. This training requires three days, whether the observer is a mentor or merely a trained observer who performs observations for the same school district. In addition, school administrators themselves should receive a certain amount of familiarization training on the Activity Profile, so that they can place the proper emphasis on the program and select only the best teachers for mentors and observers, as well as provide better support and assistance to beginning teachers. This extensive training for observers, mentors, and school administrators should take place at every public school in the state of Texas.

The impact of an initiative as complex as TxBESS is nearly as extensive for educator preparation entities as it is for public schools. First of all, key personnel in the college of education need to become thoroughly familiar with the TxBESS program, since the ratings by the observers of beginning teachers may soon be a standard for deciding accreditation of teacher preparation programs. Without proper understanding and involvement, teacher preparation programs will not have a voice in the development of the system by which they will be rated, when and if these ratings are added to the ASEP

system in Texas. Training will need to be conducted for deans, associate deans, department chairs, and other faculty members, primarily in the college of education. In order to properly prepare preservice teachers for TxBESS Activity Profile requirements, university supervisors of student teachers need to be well trained on the program itself, the forms, and the observation instrument. This training will take approximately one day. In addition, familiarization training of all college of education faculty members, encompassing approximately a half day, is needed to drive curriculum changes that will best prepare preservice teachers to not only become successful first-year teachers, but also to enable them to perform well during the observation and evaluation. Feedback from the evaluation of beginning teachers, although somewhat limited in its present form, will also require modifications and improvements in each teacher preparation program. All of the above requirements will result in additional overview and management responsibilities by key personnel involved in preparing teachers for the classroom.

Concerns

Just like any program at the developmental stage, the TxBESS program has some growing pains. As more educators are trained on the TAP, and as the pilot study becomes more extensive, concerns are being voiced. Since TxBESS will eventually provide accountability for universities and other teacher preparation entities based on standards, and since the ratings may determine whether these institutions will be allowed to continue preparing teachers for classrooms in Texas, it is a very high-stakes program. The main question with a program of this size and complexity is how to provide a fair evaluation of a beginning teacher's preparation program without making the system so labor-intensive that it is unsupportable. University-level educators do not argue that teacher preparation programs need high standards, and good educators would agree that teacher preparation programs should be held accountable for the success or failure of the teachers that they produce.

Most of the concerns addressed in the following discussion deal with how the assessments are determined and how the TxBESS program can be supported with qualified personnel. Program managers are aware of these concerns and are trying to meet the twin goals of establishing accountability and ensuring supportability.

1. The observation instrument. TxBESS uses an observation instrument that is complex and somewhat subjective. An extensive three-day training program is required to teach observers how to properly document and evaluate twenty-two different components. Even educators who had extensive experience in observing and rating teachers did not always agree with the "answer" provided during the training. The instrument uses self-reports by the beginning teacher for approximately half of the twenty-two compo-

nents as portfolio-type evidence. Accordingly, beginning teachers who are able to write well will probably be rated higher than those who do not. In addition, how do observers in small schools, which do not have beginning teachers every school year, maintain their proficiency with the instrument? For these reasons, there is some concern at the university level about whether the instrument is a valid measurement of a beginning teacher's preparation program. Such issues will be addressed as the instrument is refined during the pilot stages and after evaluation studies of validity and reliability are undertaken.

2. Inter-rater reliability. Observers come from different backgrounds, with different experiences, and therefore have different standards concerning whether the beginning teacher is performing at an acceptable level or not. Some observers may show rater leniency, whereas others may be overly harsh in their ratings. Observers are trained to assign ratings based on "a preponderance of evidence." For example, if a beginning teacher has four positive interactions with students, but then gets angry with another student, is this "at standard" or "below standard"? Some observers would rate this beginning teacher "below standard," feeling that a teacher should never get angry with her students. Another observer might rate this beginning teacher as "at standard" because almost all of her interactions with students were positive. How much subjectivity in ratings is acceptable, when these ratings may be used to determine accreditation ratings of teacher preparation programs? As scoring rubrics are refined and training is fine-tuned, these issues must be addressed. Studies of this nature will be undertaken as the pilot study progresses.

3. Availability of qualified observers and mentors. Public school teachers are very busy. The best teachers are the busiest, serving on campus improvement committees, on academic specialty committees, as student teacher supervisors, and performing a host of other important duties at the campus and district levels. We also need the best teachers to serve as mentor teachers for beginning teachers, to provide support and assistance particularly during the critical first year of teaching. The observers also need to be selected from the best teachers at the school to ensure that good feedback is provided to mentor teachers and that evaluations that may affect accreditation of a teacher preparation program will be fair and representative of the training that the beginning teacher received. Are there enough of these "best teachers" in each school to accomplish all of these important tasks well? Even if the mentor teacher and the observer are the same person, is the TxBESS Program supportable with highly qualified personnel?

4. Training. Training is required for educators at many levels, including teacher preparation program personnel, education service center man-

agers, school administrators, mentor teachers, and observers. This training takes a large amount of time for people who are already very busy. Issues that are being worked on at the state level include how to make this training both shorter and more effective. In addition, training should cover examples of beginning teachers who are below standard, at standard, and above standard. All three ratings should be used when comparing beginning teachers with approved standards and expectations for beginning teachers.

5. Schedule for observing the beginning teacher. Beginning teachers would develop a lesson, prepare documents, teach the lesson, and then reflect on the lesson, all within the first three months of their initial teaching assignment as presently scheduled. On one hand, there is a need to observe beginning teachers early in their teaching experiences, so that judgement can be made concerning their preparation for teaching. On the other hand, beginning teachers are being observed at a time when they are likely to be very busy and may also be more concerned with survival in the teaching profession. This issue of timing is being studied in the spring and fall 2000 pilots. Educators from teacher preparation programs are also concerned that only one observation is made on one lesson in the current plan, and then a rating may be assigned to that teacher preparation program. Again, the pilot studies and participant feedback will provide information that may alleviate this concern. Additional observations may help improve the reliability of the measurement, but this would also take additional time for observers, mentors, and beginning teachers—time that may not be reasonably supportable.

6. PDAS versus the Activity Profile. The Activity Profile instrument and the Professional Development Appraisal System (PDAS) observation instrument are different. Even though similar components are evaluated, the forms used are different. The beginning teacher's performance would therefore be evaluated using the Activity Profile instrument for formative purposes by observers, and would also be scored using the PDAS instrument for meeting performance standards by principals in the public schools. The most important concern for many beginning teachers is how their principal rates them, since this may decide whether they are hired to teach another year. Consequently, the beginning teacher's motivation to do well on the Activity Profile may be secondary to PDAS performance, and they may not put forth their best effort when completing TAP forms. Conversely, the Activity Profile may enhance performance of beginning teachers, since it will be formative and is accomplished prior to the initial PDAS appraisal in most cases. This scenario has proven to be the case in California where an instrument very similar to the Activity Profile is administered prior to the teacher's initial observation for contract purposes.

Summary

The state of Texas has initiated excellent standards by which beginning teachers can be measured and evaluated. These standards are designed to help beginning teachers know what to teach and how to teach it. Extensive training of mentor teachers and observers for the TxBESS program is underway and program modifications are being made to address the concerns mentioned above. TxBESS has the potential to meet the dual goals of helping beginning teachers during their first year and also providing for accountability of teacher preparation programs. It is not easy to meet both of these goals, but a large number of competent educators in Texas are working on this critical program. It is necessary for educators at all levels to become familiar with some of the growing pains involved with a program of this size and complexity. The issues of how teacher preparation programs can be fairly evaluated and held accountable for the success of their students are very important to the future of Texas.

TEACHER PERSPECTIVES ON STANDARDS AND HIGH-STAKES TESTING

From the Urban to the Suburban

Rob Linné

My job uniquely positions me between two wildly diverging American educational systems. Through the teachers I work with in a graduate education studies program divided between two campuses, I am privy to some of the school lives of teachers working in affluent, well-appointed suburban schools as well as the lives of teachers working in crowded, underfunded urban sites. Our university encompasses both a Long Island, New York, campus set amid leafy, beautifully maintained neighborhoods as well as an urban education center in Lower Manhattan. Although the two campuses are thirty minutes apart (on a good traffic day), the classroom discussions make the distance seem infinitely greater.

The teachers I work with from Long Island schools are generally more satisfied with the American educational system. The teachers I work with in the city are impatient with the status quo and vehemently argue the necessity of major changes in the structures of American education. Far from satisfied, teachers in the city boroughs often express strong feelings of anger regarding their work environments and the treatment of their students by the system. Despite the new focus on education in the public discourse, especially the improvement of urban schools, many city teachers perceive their situations as declining rather than improving. Those working directly with students in urban classrooms corroborate the "consensus" proffered by the media, politicians, and state and district administrators that the standards movement is effecting drastic changes in our urban schools; the teachers, however, are much more cynical about the results

of these changes. The emphasis on high-stakes testing as the central component to reform has—in the eyes of these teachers—exacerbated the problems facing urban educators.

Much of the difference in opinion among educators regarding school reforms and the general state of our schools stems from the well-documented inequities in physical resources allocated to schools in different areas (Kozol, 1992). New York City teachers share stories of crowded classes (sometimes convened in hallways); class shelves bereft of books (let alone current technology); and crumbling, dangerous infrastructure. Thirty minutes out the Long Island Expressway, perceptions of the American school are far more sanguine. Long Island teachers seldom bring up the topic of school buildings or resources in class discussion. Current books and magazines, speedy Internet connections, and basic art supplies are "givens" that are expected on the suburban campuses where they work. Discussions begin with curriculum and pedagogy out on Long Island, not with ideas for scrounging the basic materials of schooling.

Although New York City teachers are more likely to have to reach into their own pockets more for class supplies, they begin earning 25 percent less on average than their peers in the suburbs and they realize that the gap only increases with time. The median pay for teachers working in the school district encompassing our Long Island campus is 40 percent more than the median pay for our city teachers (Goodnough, 2000). All told, when teacher salaries and resource allocation are figured, New York spends close to $8,000 per student in contrast to the affluent white suburbs of Long Island where an average of $18,000 per child is spent.

And yet, despite these glaring inequities most of the urban teachers I work with do not cite material limitations as their top concern. Teachers from Brooklyn to the Bronx often seem somewhat resigned to make do with fewer resources than their suburban colleagues while working in substandard buildings. These educators demonstrate remarkable resilience under the most trying working conditions, as well as strong commitment to working with New York City youth. The compromises they make daily due to lack of basic resources and technologies are certainly disheartening to urban educators but the continued erosion of their status as professionals represents the cruelest blow to many who try to keep their faith in public education. When I ask New York teachers to talk about the changes they would most like to see in their schools, the most frequent answers are smaller class sizes and greater academic freedom. These experienced teachers strongly believe that with manageable class sizes they could move further away from the American factory model of schooling, and with empowerment to create their own curriculums they could best match their teaching to their students' individual needs and cultural backgrounds. Asked to envision the class-

room of their dreams, many urban teachers describe the progressive learning environments their colleagues out on Long Island experience as reality.

Earlier studies have uncovered the dynamics (beyond resource allocation) that explain why teacher and student realities within one educational system can be so divergent (Anyon, 1981; Apple, 1979; Foley, 1990). Jean Anyon's study, for example, outlined the daily routines and learning environments of five public elementary schools in five New Jersey neighborhoods that spanned the socioeconomic spectrum. Two of the schools were located in working-class areas. Many of the families in this area were supported by blue-collar work and a small minority was on unemployment assistance. A third school closely matched the overall description of middle class. Family members in this neighborhood tended to possess relatively high-paying blue- and white-collar jobs that demanded a high level of skill, such as education, government, or social work. A fourth school was centered in a neighborhood designated "affluent professional." Incomes in this area represented the top 10 percent of national averages. Children in this school were likely to have parents or caregivers who worked in professional fields such as law, medicine, or architecture. In the fifth neighborhood, designated "executive elite," community members were likely to be executives at the top levels of multinational corporations or Wall Street financial firms. Although Anyon observed many similarities across the schools in these very different neighborhoods (e.g., the same math textbooks and prepackaged reading programs), striking differences were documented as well.

In the two working-class campuses, schoolwork involved following steps in a procedure. Teachers placed heavy emphasis on routinized control of students. Children were ordered to remain in their seats unless given permission to move and materials were under the control of the teacher at all times. Classroom procedures often involved filling in worksheets or copying notes or rules from the board. Knowledge in this context was presented as a series of unconnected facts decontextualized from the complexities of their wider subject areas or from the experiences of the students and their cultural backgrounds. Students were most often evaluated not so much on the quality of their work, but according to whether the student closely followed the prescribed steps.

For example, the language arts curriculum in both working-class schools consisted almost entirely of drill in the mechanics of punctuation (commas, periods, question marks, and exclamation points), capitalization, and "the four kinds of sentences." Instruction in punctuation relied heavily on dittos laying out the rules for where to put commas as opposed to periods. No discussion ever took place among teacher and students regarding the rhetorical context of using punctuation or phrasing. Writing was presented as a drill in following rules, not

constructing ideas or communicating meanings. Such instruction aligned well with teacher expectations for their students. As one teacher explained, "Simple punctuation is all they'll ever need."

Indeed, creative or expository writing was extremely rare in these classes. For "creative writing," students were sometimes given dittos on which they wrote answers to short questions. For example, students wrote their autobiographies by answering such questions as "Where were you born?" "What is your favorite animal?" on a sheet entitled "All About Me." Social studies, math, and science classes mirrored such curricula as students passively took notes or filled in work sheets rather than engaging in authentic learning experiences such as hands-on science labs or research and debate in social studies. Again, class curricula aligned with teacher expectations for working-class youth. A mathematics teacher skipped any pages exploring mathematical reasoning or inferencing with the rationalization, "Those pages are for creativity—they're extras." The social studies teacher explained away her social studies curriculum that required students to endlessly copy notes from the board in this way: "Because the children in this school don't know anything about the U.S., so you can't teach them much." Teachers routinely made such categorizations despite the fact that students in the two classes studied were measured to have typical IQ scores as well as higher-than-average intelligence scores.

Anyon (1981) believes the attitudes and aptitudes these students were developing through their schooling mirrored the traits expected of those who labor. Their schoolwork prepared them for their (expected) adult roles as laborers in routinized, low-paying jobs. Their capacities for creativity and planning were ignored just as their parents' capacities were probably ignored at the work site.

In the middle-class school, the goal of schoolwork is to get the *right* answer. Similar to the expectations of working-class students, middle-class students were taught to follow directions in order to come to the correct answer, but the directions often called for some figuring, choice, or decision making. Although students were rarely encouraged to take on sustained inquiry into a topic, their work was more contextualized than in the working-class schools. Questions did move beyond simple rote copying of isolated facts in that they asked students to locate information in the text and demonstrate basic understanding of the material presented. For example, in social studies the daily work followed a pattern of reading the assigned pages, listening to the teacher's summary of the "main ideas," and answering short comprehension questions. Like the working-class school, however, creative thinking was not highly valued. Students were not asked to develop and defend their own thoughts on the subject at hand in this curriculum that focused on seeking information and recounting this information in clear, neat prose.

The schooling these students received was appropriate for young people destined for white-collar, working-class, and middle-class jobs: paper work, technical work, customer service, and social service in the private and state bureaucracies. In these positions one is rewarded for knowing where to find answers and for knowing which form, regulation, technique, or procedure is correct.

In the affluent professional school, creativity, critical thinking, and personal development were obvious goals set before the children. Schoolwork in these classrooms was creative activity carried out independently. The students were continually asked to express and apply ideas and concepts. Classroom products went well beyond the dittoed worksheets found in the working-class schools and often included stories, essays, and visual representations such as artwork or graphs. For example, in a study of ancient civilizations students made a film of Egypt. Along with reading and responding to stories set in the time period, students wrote and exchanged letters in hieroglyphics and created stories written in cuneiform. Social studies class also involved almost daily presentations and discussion of current events.

Again, the relationships to learning and knowledge these students were developing in their schools closely matched the attitudes and skills expected of the positions their family members held. Their schooling was developing in these children the capabilities to become society's successful artists, lawyers, doctors, technical experts, as well as professionals in other areas.

Knowledge in the executive elite school was complex, contextualized, and rigorous. Work in this school was developing one's analytical intellectual powers. The main themes heard in this school were excellence, mastery, and control. Children were given the opportunity to learn and to utilize the intellectually and socially prestigious discourse systems such as the grammatical and the mathematical and they were expected to master them for future use. For example, the language arts curriculum emphasized language as a complex system over which one should strive to attain mastery. The children were expected to diagram complex sentences and to learn and practice proper grammar. Many of the writing assignments were expository in nature, including research reports, experiment analyses, and write-ups for science. The curriculum also included a large amount of practice in presentation of the self and in managing situations where the child was expected to be in charge. For example, each child had to assume the role of "student teacher" at times. Students were evaluated on their presentation style and clarity as well as how well they kept control of the class.

This type of education obviously prepares young people for a life at the top. The activities that children in the executive elite school engaged in affirmed and developed in them the human capacities for analysis and planning. These children were made

ready for ownership and control of capital and the means of production in society.

In short, the varied types and levels of work the students in the different schools were asked to produce illustrate the ways in which social strata are often reproduced. Children of professionals and corporate executives are rewarded for assertiveness and creative thinking, while children of the working class are rewarded for obedience. It should come as no surprise then that young people from working-class schools are often resistant to schooling and do not perform academically at as high levels on average as their peers in wealthy schools. And yet, in a clear example of "blaming the victim," politicians, school board members, and members of the media often conclude the fault lies with poor students and their parents, as well as those who teach them. This line of reasoning allows the more pernicious elements of the standards-based reform movement to go unquestioned. For example, if the uneven results of our education system can simply be traced to underachieving students (mostly poor) and undisciplined teachers (mostly working with poor students), then a simple solution can be found: firmer control of these individuals. The dominant solution being proffered at the turn of the new millennium is standardized curriculums and high-stakes testing. If mastery of a basic curriculum is demanded of all students and if their teachers are made to teach to that curriculum, then as bureaucratic logic would have it, things would even out. All boats would be lifted on a rising tide of higher standards.

However, as most educators working closely with students understand, such a simple solution is not likely to overcome the complex problems of our school system. Indeed, research is emerging that documents the detrimental "side effects" of the standards movement. Linda McNeil's (2000) study of public high schools in Texas during the state's early stages of standards-based reform, for example, uncovers the ways in which such reforms widen the gaps between rich and poor schools that Anyon outlined in her research. Although rising test scores have been offered in political speeches and in the media as the only proof needed that reforms are working, McNeil's work suggests that any discussion about the new standards and testing must be situated within actual schools and the everyday activities of those working and learning in the classrooms. By offering qualitative research to contextualize the quantitative data of standardized tests, McNeil demonstrates how the innocuous-sounding language of standardization ("high standards" and "accountability") masks the reductions in academic quality (especially for poor schools) and transforms what is schooling for our most vulnerable youth in negative ways.

McNeil had been conducting long-term research on some of Houston's highly regarded "magnet schools" when the Texas reform movement of the late '80s and '90s swept the state.

Magnet schools were progressive public schools that were originally chartered to attract diverse student populations to schools in the inner city in order to meet desegregation goals. McNeil was interested in documenting the kind of learning working-class, urban youth can accomplish when they are afforded opportunities to experience curriculums and pedagogies very similar to those in the affluent-professional and executive-elite schools of Anyon's study. The Houston schools, although not nearly as well funded as the executive-elite schools, provide a powerful record of the ways a noncontrolling administrative organizational structure can enable teachers to work together with their students to create highly successful academic experiences for youth normally denied access to quality schooling.

Standards at these schools were extremely high before the Texas legislature deemed it necessary to prescribe "minimum standards" on all schools across the state. For example, one school located near Houston's prestigious medical center exemplified engagement with a curriculum that has credibility in the world outside the school walls. Skills in the laboratory and the ability to communicate and understand complex concepts were essential inside the school because the students knew they would have responsibilities for carrying out important "real world" tasks during their rotations through labs and clinics in the medical center. Another school focused on the congruence between classroom knowledge and personal knowledge as students and teachers coconstructed a curriculum out of their individual and shared experiences. Students explored their cultures and family histories such as work or immigration and brought their diverse perspectives to bear on traditional subjects such as the branches of the U.S. government and elections as well as on emerging topics such as changes in immigration laws and the political and naturalistic ecologies of the coast of the Gulf of Mexico.

The learning environments nurtured in these schools were "individualized" to speak to their diverse students through culturally relevant curriculums (Ladson-Billings, 1994). The history and literature teachers worked to include all voices, not just mainstream, white middle-class perspectives. As well, the open-ended curriculum allowed teachers to draw attention to connections between school learning and outside areas of interest to the students. The science teachers made connections between their course content and the explosion of breakthroughs in medicine, ecology, genetics, and biochemistry. Students were encouraged to explore school concepts and local issues in depth and to make connections across various fields of study. Students responded with enthusiasm, rigorous study, high graduation rates, and high levels of college matriculation.

Ironically, once the Texas standards began to be enforced such mandates made it increasingly difficult for the magnet teachers to maintain the high standards they and their students had

established. Teachers could no longer customize their classrooms to be culturally informed, wide-ranging, or current with events of the day. Once the school administrators began pushing the "proficiency curriculum," the in-depth, interdisciplinary inquiries that had exemplified good teaching in these schools often had to be left behind or at least scaled down. The new standardized curriculum rewrote all subjects not as narratives (history, literature) or systems (earth science, biology, languages) or conceptual domains (chemistry, physics, mathematics), but as discreet factoids or reductive skills to be learned in a linear order. This new basic curriculum was not merely a minimum on which they could build their more complex teaching, but a barrier that prevented teachers from engaging in the more substantive teaching they and their students had embraced so enthusiastically.

For example, one teacher had built part of her biology course around habitats. She and her students would study local environments such as urban spaces or Gulf Coast estuaries. The new curriculum, however, parsed the wide range of concepts and terminology into different semesters and different testing periods. To diverge from the standard linear sequence of generic topics and study local ecologies would risk low scores for her students, so the teacher felt compelled to acquiesce. The teaching of literacy was also seriously compromised by the reductive curriculum. One teacher at a Latino-majority high school had spent much of her own time and money building a rich collection of historical and literary works of importance to Latino culture. Her students responded to her initiative with a similar enthusiasm for reading, discussing, and writing. However, this initiative was not appreciated by administrators concerned only with raising test scores. When she returned from lunch one day her novels and poetry books had been set aside and replaced with a stack of test-prep booklets with a note explaining, "Use these instead of your regular curriculum until after the TAAS Test," even though the test wasn't to take place for another three months. (The prep materials bore the logo "Guerilla TAAS" as in making war on the test and later the Guerrilla TAAS consultants came to school in full camouflage gear to lead a pep rally for students and teachers.) So now the students who had been analyzing the poetry of Gary Soto and exploring the generational themes in *Bless Me Ultima* had to put away their authentic literature and "practice" reading canned passages to answer multiple choice questions.

Such overemphasis on test preparation at the expense of authentic learning has become the norm for many urban schools where student scores are tied to rewards and punishments for educators and administrators. These largely minority schools, already limited by meager budgets, now spend much of their funding on test-prep materials, test-prep consultants, test pep rallies, and reward days or trips recognizing performance on the tests.

In schools where artificial test preparation replaces local curriculums, students receive even more of the vacuous, decontextualized skill and drill that exemplified "learning" in the working-class schools Anyon studied. Although the short-term effects may be improved student scores, many urban teachers fear the long-term effects are more negative than positive.

For example, when students are coached to improve their reading scores by daily readings of short, disconnected passages followed by multiple-choice comprehension questions about the "main idea" or the "correct sequencing," their scores on standardized reading tests often do rise. However, experienced teachers report that such inauthentic literacy *exercises* actually undermine students' abilities to learn to read for meaning outside the test setting and decrease students' abilities and motivations to engage substantial texts. For example, one teacher reported that after months of reading test drills, her students could not read a novel for extended time periods. Accustomed to reading very brief, disjointed passages, her students simply stopped a few minutes after opening the book. They had difficulty carrying over information from the first chapter to a later one and obviously did not exhibit the characteristics of capable, lifelong readers.

Of course, the effects of this mind-numbing curriculum should affect students and teachers in areas other than their test scores. Indeed, McNeil (2000) found evidence that many teachers and students simply disengaged from the schools. Some experienced teachers simply quit the profession or reported serious plans to move on. There may be a correlation as well among the new test-driven curriculum and minority student dropout rates. In 1978 more than 60 percent of Blacks and almost 60 percent of Latinos graduated high school in Texas. After four years of the standards reforms fewer than 50 percent of all Blacks and Latinos made it to graduation and the level has remained low throughout the '90s. (The graduation rate for White students dipped when the reforms were introduced but have returned to prereform levels.) As a side note, rising dropout rates of ethnically and linguistically diverse students do have one positive effect: they further inflate rising test score averages in the schools.

McNeil (2000) posits that although there is some abuse of teaching through test preparation in wealthy suburban schools as well, teachers on these campuses do not have to alter their curriculums much as their students traditionally perform well on standardized tests. Even if administrators were to attempt such reforms, the professional and executive parents of these school communities would not tolerate months of simple skill and drill instruction for *their* children. Standardized curriculums and tests are sold to the public on the notion that the "sameness" of the curriculum will make the educational system fairer. However, the same state curriculum looks much different in a Westchester classroom than it does in the South Bronx. My research with

educators from across urban and suburban lines in metropolitan New York looks at these dynamics through the eyes of the teachers.

In discussing and writing about the new city and state standards in New York with local teachers, two contrasting stories emerge. Teachers from the city tell a story of being "run over" by the current wave of reform, a story in which they are victims with very little control over events in the narrative. Educators from the suburbs tell a simpler story of minor disruptions to their everyday work lives. In their stories they keep control of much of their power to manipulate the way things end up after all is said and done.

The dominant theme recurring over and over in city teacher narratives is *pressure.* Teachers feel pressure from above to increase scores and demonstrate that they are "team players" by joining in the schoolwide efforts of test preparation. When we first began the discussions, I was somewhat taken aback by the vulnerability tough New York City teachers expressed. They seem to operate now under constant fear—fear of dismissal or fear of some other type of retribution. The symbolic message of dozens of school administrators being fired by the New York City chancellor after low test scores came back was not lost on these teachers. In journals, essays, and class discussions, teachers often worried about the choices they were forced to make. "Either I teach the way I think is best and risk [low] test scores and then I lose my job, or I work on that test from the minute they enter my door." When I asked teachers if they actually believed they were in danger of being fired if they did not demonstrate commitment to packaged programs their schools were using to raise test scores, they detailed for me the myriad ways principals could "make [their] lives Hell" even if they did not actually lose their paid positions. Administrators can harass teachers, have them reassigned to an undesirable position in a far-off location, or assign them difficult duties within the school. From further above, the state can designate their site a "school under review," meaning take over the school with drastic reforms that can include closure and displacement of faculty. Schools can also earn or lose monetary incentives depending on their test scores as well. "The pressure is *on*. So many people are examining my scores and so much is riding on them sometimes it is all I think about."

This environment can lead teachers to act in ways they are not particularly proud of. One recurrent topic of discussion revolved around cheating. All of the teachers knew the stories about city teachers caught cheating on the state tests. Most believed the teachers who were caught represent only the "tip of the iceberg" concerning the levels of unethical behaviors surrounding the test. "There are many ways to get your scores up beyond teaching." The emergence of cheating scandals concurrent with the introduction of competition among educators for resources and jobs was one of the developments of most concern for city

teachers and their profession. "Teaching has become a contest. No wonder some people do anything to win." "This is shame on all of us. What kind of message is this sending out?"

City teachers lamented the fact that their students were receiving inappropriate messages about learning and life in general from the new reforms. They reported that the pressures they felt were redirected toward the children in their care. "Teachers feel the pressure from the principal and from the superintendent. The pressure is then displaced on to the students. I am finding less and less time to address children's concerns, questions, and needs." "This past week we took another citywide test called the EPAL. The amount of pressure these children felt about the test was unbelievable. These are only eight-year-olds who are stressing out. I think we tend to forget these are children we are putting the heat on." "Many were so stressed when they saw their students failing the practice exams. Consequently, they vented their tensions on the children. Before the real tests there was more hollering, more punishing, taking away rewards and so on. I found some of our students were so anxious they got sick." In discussion we agreed that young children would not "naturally" have a fear of tests. The anxiety can only come from the adults around them. In this light, many felt the testing mania was exacerbating problems for their students beyond the classroom. "My children come from very stressful lives and I don't like making it worse."

Another theme that emerged through our discussions was loss—loss of professionalism, academic freedom, and a "true" sense of purpose. Now that control of curriculum had been largely taken away from teachers and given to bureaucrats, New York City teachers did not feel as *professional* as they did in the past. Teachers used terms like "robots" and "cheerleaders for the test" to describe themselves professionally in their current situations. Few felt like they held the power to resist the "testing cycle" and none brought up collective action for change before I introduced the topic. Teachers simply felt "trapped" in the system and unable to fully make use of their expertise. "Teaching in this city has become a business enterprise where programs are bought (at enormous cost) and so called teacher-made materials have replaced us." "The system is not blamed for failures. Who is? The teacher of course. Education no longer maintains the social status it once had."

New York City teachers—who I have found to be a very creative cohort with many rich life experiences to share—especially seemed to regret the loss of their creative expression as teachers. "We are no longer considered capable enough to be creative or innovative." "My creativity has quickly eroded. I no longer have enough time or liberty to run my classroom the best way I know how and that is appropriate for my students. I believe in connections between art and learning. Art is out now." Sadly, the teachers who struck

me as among the brightest and most intellectually curious were the ones who tended to indicate they may choose to leave our schools because of the changes reform has brought. "Teaching was much more enjoyable and interesting before. I don't know how long I will stick with it now."

A third theme that emerged in our discussions at the urban education center was the belief that the reforms created a much too narrow conception of curriculum and learning. Most obviously, teachers felt their subject matter studies were compromised by a focus on easily testable objectives. Teachers told of having to suspend "all normal reading" in novels, magazines, and other media in order to focus on the commercial test preparation materials. In addition to test practices, many schools had purchased large-scale reading programs that teachers were to strictly follow. This "tunnel vision" did not allow for interdisciplinary study, in-depth inquiry, or arts-infused exploration. "Students are learning the art of test-taking instead of studying the arts and sciences and social studies."

Even the cultural riches of New York City are no longer allowed to be part of the curriculum. A surprising number of teachers reported that field trips to museums or plays were no longer encouraged or even allowed. "I used to approach each concept or subject in a variety of ways: through a novel, visual art, or a trip to a museum when I taught in another school. Now I have only one way to teach and that is to read, summarize, organize through a graphic organizer, and develop a five paragraph essay. All so they can pass the regents. Is this teaching? I don't think so." Teachers did not feel the "whole child" was being developed through such a curriculum. The "multiple intelligences" of students that cannot be easily evaluated via multiple-choice testing were not valued, so visual art, drama, and oral presentations were not valued. There was no room for the cultural backgrounds of students in the curriculum either. When all students study the same test materials, the unique diversity of a city like New York is neglected. Teachers reported that they no longer had much time for localized, multicultural education or development of social awareness in students. "I see so much spark when I use the multicultural methods, but it is just an add-on now, not the daily focus." "Because we are not helping them develop socially, they will not be able to get along in our diverse world." "As these students become adults, they will be unprepared to handle the challenges of real life in society."

In contrast, the suburban teachers I work with were more ambivalent about the test-driven reforms, not nearly as angry or demoralized. In fact, the topic generated much less dialogue and writing among Long Island teachers. Standards are just not the focus of their concerns. When the topic was discussed, opinions seemed split between those who believed the reforms were negative on balance and those who believed the reforms were basically benign with some flaws that

could easily be addressed or circumvented.

Long Island teachers often agreed that their curriculums only needed to be adapted to the state curriculum, not drastically changed. Teachers described rather progressive classroom environments and learning activities in their schools. Although almost all mentioned some test preparation before the test or for a portion of each week, all seemed to have time for long-term inquiries and the reading of full-length novels and books. The main adaptation seemed to be the addition of a documentation process. Many suburban teachers told of having to label elements of their lesson plans according to which standards they address. Others had to identify the standards addressed on the blackboard along with the objectives for the day. Some teachers found this structure helpful. "The standards help you make sure all areas are addressed throughout the year." Although other teachers complained of the inconvenience, most did not feel they had to alter their classroom practices all that much.

These teachers did feel that their professional standing and status were threatened by state mandates, but they maintained more confidence that they could circumvent the system or outwit the bureaucracy. Teachers talked about paying lip service to much of the state mandates, but ultimately they felt they could maintain control over their curriculums. More than one teacher suggested quietly subversive means of maintaining power. "You can attend all of the in-service trainings and agree with them, but when you shut your class door you can do what you really want to." None of the teachers mentioned feeling threatened about losing their jobs for not teaching to the test. I heard no stories of teachers or principals being fired on Long Island for low test scores and no reports surfaced in the media that I know of. Teachers did discuss the stress that tests can cause students but they did not express much concern that they were pushing their children too hard.

Clearly the standards-based movement, which was aimed primarily at "problem students" (the poor, often urban and minority), has hit the mark. Schools serving young people from wealthy backgrounds seem to be the least affected by the reforms while schools serving the poor seem to be suffering serious "collateral damage." Access to the kinds of education needed to enter the top rungs of the professional or executive worlds has become even more elusive for working-class youth and minorities. The high-level skills that the "new economy" demands and which school reforms were meant to elevate *cannot* be developed in urban school curriculums centered around multiple-choice and short-answer driven exams.

New York City teachers hold strong beliefs about what kind of reforms would best serve their children: manageable class sizes, equitable distribution of resources, quality professional development, and the freedom to create engaging curriculums that would

demand truly high standards of their students. Sadly, nobody seems to have asked them.

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(ILL)EQUIPPED FOR THE FUTURE

Standards and Adult Education

Sharon L. Howell, Vicki K. Carter, and Fred M. Schied

The Background

During the past decade, the needs of industry and corporations have driven adult basic education policy in ways that far exceed any effort in the past (Gee, Hull, & Lankshear, 1996; de Castell, Luke, & Egan, 1986). At the federal level, adult basic education programs have been folded into workforce development and training programs. States, rather than the federal government, have become the focal point of this reorganization, being allowed a great deal of latitude on organizing their adult basic education programs. Moreover, the passage of the Welfare Reform Act in 1996 changed the focus of welfare reform from an approach that invests in building basic job skills to an approach that emphasizes quick job placement (Strawn, 1997). This increasing emphasis on workforce development as a policy goal has had a profound impact on adult basic education programs. Although clearly adults often enroll in adult basic education programs for job-related reasons, the programs themselves have always had broader goals. However, not only have those goals been fundamentally altered, but, as discussed below, adult education programs have now been given the task of creating the ideal employee—a worker that meets the requirements of the new capitalism; a worker that "fits" into the changing workplace without questioning any of the basic assumptions undergirding the new workplace; a worker that will be flexible, adaptable, and most of all compliant.

From SCANS to Equipped for the Future

The Secretary's Commission on Achieving Necessary Skills (SCANS) report issued by the department of la-

bor in 1991 has had enormous impact in directing the economic agendas that are the primary force behind educational policy. The SCANS report sought to clarify competencies required for the workplace of the future. The report identified five categories of competencies that would lead to becoming a "successful" worker (SCANS, 1991):

- Resources—Identifies, organizes, plans, and allocates resources
- Interpersonal skills—Works with others on teams, teaches others, serves clients, exercises leadership, and negotiates and works with diversity
- Information—Acquires, organizes, interprets, evaluates, and communicates information
- Systems—Understands complex interrelationships and distinguishes trends, predicts impacts, as well as monitors and corrects performance
- Technology—Works with a variety of technologies and can choose appropriate tool for task

Since the release of the report, not only school-based programs but adult education programs have been developed around these standards. These standards formed the backbone of the National Institute for Literacy (NIFL) efforts to develop a "customer-driven, standards-based reform process" called Equipped for the Future (EFF) (Stein, 2000, p. 1). According to the Equipped for the Future Standards for Adult Literacy and Lifelong Learning, the standards were developed to answer the question of "What do adults need to know and be able to do in order to carry out their roles and responsibilities as workers, parents and family members, and citizens and community members?" (Stein, 2000, p. 1). Focusing on a "customer driven" approach, NIFL began by proposing a new framework for adult learning based on four purposes and three roles adults face as parents, citizens, and workers. Basing their conclusions on interviews with 1500 students from 152 programs in 34 states, NIFL concluded that the four purposes of learning are access, voice, action, and bridge to the future. These four purposes are very similar to the goals adult basic education has always had as a rationale for their programs, though not expressed in the language of the EFF report (Quigley, 1997). What makes the EFF report different is by using the SCANS report as its basis, NIFL set out to identify standards for adult basic education programs by developing a consensus from various stakeholders (employers, teachers, program administrators, students). The result was that sixteen Equipped for the Future Standards (see Appendix A) were created that "define the core knowledge and skills adults need to effectively carry out their roles as parents, citizens and workers" (p. 17). The sixteen standards, divided into four subsections, form the basis of the EFF and are to guide all adult basic education programs. It is important to note that despite the EFF's call to develop citizens and parents and family members,

as well as workers, the driving orientation behind the development uses a language of fast capitalism: It is customer (not citizen or worker or family) driven. Moreover, the fundamental purpose of the standards also incorporates the language of business: "Being able to use the skills in each category with a high degree of competence maximizes *flexibility*, giving adults a range of choices for how they can meet daily challenges and opportunities" (p. 17). It is to the further use of language that we now turn.

Standards and Language

Looking at the use and constructs of language within the EFF standards is one approach to analyzing their impact and underlying assumptions. The good news concerning the EFF standards is the admirable research effort that has taken place, and continues to be ongoing, that involved stakeholders across a continuum of adult learners and organizations involved with adult learners and workers. EFF developers have recognized the multiple audiences that the standards will affect; they acknowledge that "the issue of values and meaning is integral to the role maps" describing the population of learners (Stein, 2000, p. 13) and that the standards must be "dynamic and capable of change" (Stein, 2000, p. 18). Furthermore, while EFF specifies what is important to learn (not an unproblematic stance in itself), they do not dictate "how the ideas or information should be taught" (p. 18) and recommend contextualized approaches to teaching.

It is, however, difficult to reconcile the recognition of life's complexities in these statements with the effort to guarantee that these "standards sharply focus on application of skills" (Stein, 2000, p. 19) and the instrumental enumeration of three roles, four categories of skills, sixteen EFF standards (core knowledge and skills), thirteen common activities, and four key dimensions of performance. Societal trends that continue to concentrate on the individual—especially the individual who is defined as illiterate, nonskilled, and in deficit—inscribe and demand that adults "identify and respond to change and challenge at work and at home" (Stein, 2000, p. 20) and take responsibility for learning. Although EFF discusses context and complexity, the standards are written out of context; they are limited by the language used, and cannot be integrated into the various realities and agendas of the audience they seek to change in part because there is a continuum of contexts. Learners live within and cope with personal, local, county, state, national, international, and virtual contexts, all of which are socially constructed. In spite of the discussion of context, interconnectedness of skills, and the intermixing of people's roles, standards reflect and represent a sociopolitical totality.

Critical educators find these kinds of trends troublesome when they are not complemented by a parallel demand for corporations and other workplaces to also respond to change

and challenge by creating quality jobs and humane environments for workers. Clearly, not every job is a good one—there is no lack of terrible places to work. How is contextualized teaching possible when, for example, standards developers have uncritically accepted the economic premises of corporatization and globalization and the resulting exploitation of workers, especially workers in the Third World (Tilly, 1998)? The contexts of workers' experiences of their jobs as dehumanizing, stressful, or disempowering, for example, are not factors in EFF's analysis. Instead, EFF literature speaks very much to meeting the demands of the contemporary workplace rather than, at a minimum, considering that the workplace should be asked to adhere to and abide by the same standards that it sets for workers.

The process of creating standards within an instructional system such as EFF frequently involves the breaking down of learning into prearranged modules and linear sequences through the use of discrete models. The language embedded in standards involves terminology such as yardsticks, instructional interventions, benchmarks, outcome and performance criteria, and definitions of nonconformance. Assessment of achievements of the lifelong learners that the standards seek to address is seen as substantive and objective, unconcerned about the processes learners use to construct knowledge and meaning. The standards are replete with business terminology and the jargon of management models and fads. Moreover, when the standards refer to context, it is mainly the context of the designers of the instruction and other "experts" whose language, backgrounds, experiences, ideological groundings, and theoretical underpinnings are embedded in the designs. The inclusion of emotion, for example, would not be understood as a mode of perception in these methods and techniques for building instruction.

Critical educators question the assumptions that undergird the language of standards and the underlying rationale they promulgate as the cornerstone of lifelong learning and a blueprint of what will equip people for the future. Omitted is the concept of positionality—the situation or place where each individual is located. The concept is paid lip service, but direct confrontation with it is evaded. This avoidance is clear in the EFF standard's consistent imitation and incorporation of the globalizing rhetoric of business and industry. By not taking into account the overarching significance of the local, standards promoters avoid directly engaging in situ social and economic realities. In other words, they accept the worldview of corporate America as their political companions.

Exploring the Concept of (Role) Maps

As the language of the EFF standards indicates, its learning processes are mapped, charted, plotted, and blueprinted. In fact, one outcome of the EFF research effort was the develop-

ment of role maps including a "worker role map." This particular mapping discusses broad areas of responsibility for workers including learning to "work within the big picture" so that employees "recognize that formal and informal expectations shape options in their work lives and often influence their level of success" (Stein, 2000, p. 11).

Ken Wilber's (1993) study of consciousness as multidimensional is helpful when considering context and complexity in terms of systems of instruction such as those espoused by EFF. Comparing consciousness to a spectrum, Wilber uses the analogy of a range of electromagnetic radiation made up of many forms such as infrared and ultraviolet; the spectrum is constituted by a variety of bands or levels. In this view, a multilayered range of consciousness coalesces into an integrated continuum thereby uniting disparate schools of thought about the nature of consciousness and knowledge. Wilber contrasts Western dualistic knowledge characterized by the symbolic, objective, verifiable, and quantifiable with Eastern approaches that seek transcendence of self. In order to reconcile these opposites, Wilber suggests viewing consciousness as a single spectrum able to be perceived and experienced at different levels or positions on the spectrum.

Wilber (1993) described at length how Western consciousness confused its map, or heuristic, with the actual territory or terrain, a concept easily applied to a critique of systems and standards thinking. In Wilber's view, the map determines what is discovered. Thus the map, the tool, the heuristic, the model, and the procedures *become* reality, thinking becomes a tool, and these artificial constructions then become naturalized and reified. For learners, the essence of their consciousness is now at the mercy of heuristics.

In standardized systems, the map or symbolic representation functions as a learner's reality, but clearly it is not. Worse, as the rhetoric of corporations, business and industry, and economics is continuously hyped, and the supporting doctrines and modularized development techniques are brought into the extended classroom, educators consciously and unconsciously promote and defend a specific approach to life involving artificial mind-body opposition as well as describing the standards as being located in the "real world." As Wilber (1993) pointed out, this world is then understood as broken and fragmented, "sliced to bits" and afterwards presented as though it had always been that way. Consequently, as Wilber remarks, "social conceptions have become individual perceptions" and Western (and institutional) ways of knowing have "thoroughly overstepped the usefulness of the map by almost totally confusing it with the actual territory" (p. 218). This mapping then governs action because of "the manner in which we divide and delineate reality" (p. 222). Therefore when systems or models of instruction are applied to learning, the process of abstracting necessarily addresses only

what is observable and measurable (of the "real world"), erasing other forms of knowing. Although in many ways practical and useful, the process of making maps must be complemented by critical schools of thought and access to more levels of the spectrum of human consciousness in order to reduce the risk of the maps and roles delineated in EFF standards owning both cartographers and the traveling public or adult learner.

Business Jargon and Language

Butler (1997) discusses how discourse affects worker subjectivity and the complicity of learning organization and corporate rhetoric in creating compliant, flexible workers. As Butler (1997) asserts:

> [D]iscourses of learning, and especially learning for work, are colonized by the dominant discourse of globalization and its discursive practices associated with global competitiveness and late capitalism. Such a stance calls into question the discursive interconnections between globalization, the changing nature, organization, management and distribution of work (and workers) and the knowledge practices and pedagogies associated with learning/work. (p. 63)

Lifelong learning, according to corporations and EFF standards content, purportedly supports effective and improved performance, seeking to shape workers that are flexible and adaptable, and learning becomes the means to improve future performance. Another key assumption is that learning is a way to keep workers aligned with their environment and a mechanism for survival and growth. Thus from this perspective, learning is directly connected to productivity. Moreover, as Zuboff (1988) illustrates:

> Learning is no longer a separate activity that occurs either before one enters the workplace or in remote classroom settings. Nor is it an activity preserved for a managerial group. *The behaviors that define learning and the behaviors that define being productive are one and the same* [emphasis added]. Learning is not something that requires time out from being engaged in productive activity, learning is the heart of productive activity. To put it simply, learning is the new form of labor. (p. 395)

These ideas mesh easily into adult education's and the EFF standard's concepts of continuous and lifelong learning. Concepts such as continuous learning for continuous improvement fit both the corporate learning model as well as the goals of the standards, helping corporations who rely on standards-making bodies to supply them with workers who have the appropriate skills, abilities, behaviors, and psychological attitudes.

Therefore, the standards exhibit no consideration of power and only marginally address the interests of the individual and community versus the interests of economic institutions. EFF fails to locate the standards within broader social and economic systems, instead suggesting that all would be

for the best if only people cooperated in identifying common visions that are in accord with the views of corporate management. Critiquing EFF standards interrogates the notion that this model is what adults need to know, when it appears to primarily serve in constructing a docile, flexible workforce that is willing to expend their energy and personal time toward lifelong learning to benefit the global economy. Fenwick (1996) writes that lifelong learning literature is unappreciative of how "circles of people's lives and learning cross between family, work, household duty, personal relationships, play and spirituality. . . . This orientation is not usually congruent with organizational visions, missions, and continuous learning initiatives" (p. 119) nor is it reflective of how the lived world of different individuals is affected.

Much of the language of the EFF standards embraces such concepts as empowerment, participation, trust, collaboration, and teams. However, these concepts are primarily used by corporations and institutions to regain control of the workplace while taking advantage of increased input/output from workers. The single-minded focus of corporate economics is on survival and profit within the global marketplace, ignoring the increasing levels of poverty and suffering at the one extreme and the massive accumulation of wealth by the few at the other. People become *human resources*, another economic commodity to be combined with other forms of capital to produce increased wealth for owners and shareholders. In fact, the standards refer to constructing a common educational framework that would function as a seamless workforce development system and a human resource investment system for the nation (Stein, 2000, p. 2, 8). In the language of Total Quality Management (a management strategy that purports to be worker friendly, democratic, and inclusive), continuous performance improvement, and International Organization for Standardization (ISO) 9000 standards (expectations that a product or service will meet all needs of the purchaser), individuals and teams are directed to *learn* why they are ineffective and take corrective action. Responsibilities are pushed to workers lower in the organizational hierarchy, and this trend, in turn, requires a particular kind of worker, one who learns and adapts quickly, and communicates effectively. According to Gee, Hull, and Lankshear (1996) this leads to the paradox of needing empowered workers who "will throw themselves heart and soul into the work of the company. . . . Workers must be 'eager to stay,' but also 'ready to leave.' . . . The new capitalism is now quite open about the need to *socialize* people into 'communities of practice' that position people to be certain kinds of people" (p. 19–21).

For workers, corporate discourse and the language embedded in standards involves making meanings from words that are very compelling but also carefully coded. *Perfection* becomes the standard and *change* is the normal way of life. *Knowledge* refers to

"the knowledge it takes to innovate, design, efficiently produce, market, and transform products and services as symbols of identity and lifestyle in a high risk world" (Gee, Hull, & Lankshear, p. 28). Empowerment, trust, collaboration, teams, self-directed learning, and quality, among others, are all used to mold workers to the desired form and foster a common workplace culture. While purporting to place trust in workers, giving them *real control* over their work, rarely are workers allowed "to assess and (re)frame the *goals* of the organization or to generate a more powerful *role* for themselves in decision-making processes." Job knowledge no longer becomes the central point of training, but rather the shaping of attitudes and beliefs to match corporate vision and goals. Gee, Hull, and Lankshear (1996) write:

> The fast-capitalist literature is quite open about the fact that worker participation and worker empowerment in the culture and values of a new-capitalist business are ultimately a *business strategy* for competitive success and, as such, constitute an overt form of hegemony in favor of the leaders and major stakeholders in the business. . . . The paradox . . . is that this same literature claims that new-capitalist businesses need and want workers who are *critical* and who can *think for themselves*. (p. 102)

Participatory initiatives are powerful weapons in the hands of management but may also create a kind of paradox "where loyalty, commitment and critical thinking, as well as allegiance to 'core values,' are at bottom *economic strategies* for the business's benefit" (Gee, Hull, & Lankshear, 1996, p. 103). Butler's research has revealed some of the effects of corporate colonization of learning. Corporate rhetoric, aided by lifelong learning standards for the workforce, works to produce "capitulated corporate subjects" (1997, p. 67).

TQM, ISO, Worker Skills, and Management Fads

As part of a critique of standards, one could ask how deploying specific contemporary master narratives such as role mapping affects workers. The outcomes for workers are similar to the implementation of management methods such as Total Quality Management (TQM) or ISO 9000. First, anything that is described as "total" or "standard" subordinates or erases other narratives that are less powerful or speak with less authority and legitimacy. Similarly, as privileged discourses, these notions closely parallel the very concept of totality in terms of how it erases and silences workers' concerns. In totalized work environments, individuals are simply elements of the production process (Calas & Smircich, 1991; Dennis, 1995; Scholes, 1985). Second, the ideas of quality and standardization are focused specifically on processes, services, and products. These ideas do not overly concern themselves with qualities of democracy or humanity, or the outcomes of

management and standards practices on the *quality* of workers' lives—effects such as less job security, higher stress levels, dehumanizing standardization practices, work speedups, self and group surveillance, the health and well-being of Third World workers, or the ecological balance of the planet. Questions of quality, improvement, and effectiveness for whom as well as for what are seldom raised. These processes and practices are not benign, straightforward, neutral, or simple sets of techniques. They are fraught with elements of power, affecting and circumscribing the subjectivity and everyday experience of millions of workers (Clegg, 1979; Hunt, 1999; Mumby, 1988).

Educators have increasingly become concerned with the ideological dimensions of learning in the workplace and standardization of learning in general (Gowen, 1992; Hart, 1992; Howell, Preston, Schied, & Carter, 1996; Kincheloe, 1995). More recently, American businesses have turned to quality measurement processes that formalize and standardize the production of knowledge in the workplace. Interwoven within the various quality management movements and closely tied to so-called "postindustrial" forms of production, ISO 9000 processes, as certified by an international quality standards organization, view learning as part of production (Hunt, 1994; Rothwell, Sullivan, & McLean, 1995). In one study, workers charged with implementing ISO were often unable to articulate what they were actually doing because it was a foreign way of thinking about their job (Schied, Carter, Preston, & Howell, 1997). For example, some workers did not understand their jobs as linear or a series of nonintegrated minitasks. Similar to what Gowen (1992) found in her research, many workers looked at their jobs in a holistic way. Standards such as ISO 9000, however, purged workers' ways of looking at work from their personal repertoire in their seeking to eliminate nonconformance. Through standardization such as ISO 9000, workers become the keepers of standardized knowledge.

Through standards, guidelines, and management methods, worker knowledge can be formalized and appropriated and thereafter knowledge itself often becomes a way to control workers. Anything outside narrowly defined standards can be, as in the case of the ISO 9000 certification initiative, considered a quality nonconformance whether it is processes, procedures, or people. As Tovey noted, "by starting with a broad meaningless notion like non-conforming product, a tendency towards de-humanizing the situation is largely unavoidable" (1994, pp. 73–74). The ISO 9000 process made workers assessable, measurable, comparable, and able to be judged against international standards of "quality" as defined by corporate interests. Our research study of ISO 9000 certification suggested that education in the workplace is moving toward an international standardization of education based on corporate notions of quality that promises to be-

come the next wave in training and development.

Foucault (1997) wrote that knowledge and power were interconnected. TQM, ISO 9000, and standards are uniform prescribed ways of work life that help to create disciplined subjects while at the same time describing those subjects as empowered and participating fully in the workplace. This disciplined subjectivity evolves through what Foucault labeled technologies of the self in which workers transform and re-form their bodies, souls, thoughts, and conduct. Individual identities are altered when power/knowledge linkages require employees to internalize espoused precepts and conform to them. The power inherent in management practices and standards development is, as Clegg explained, "only the visible tip of a structure of control, hegemony, rule and domination which maintains its effectiveness not so much through overt action, as through its ability to appear to be the natural convention" (1979, p. 147).

Management systems and standards of all varieties purport to be democratic while in reality weakening human rights. Parker and Slaughter (1988, 1990), for example, believed the idea of teams to be a form of dehumanizing standardization. They are basically systems that help to eradicate craft and creativity with requirements to find the one "right" way, and the concomitant suggestion that there was also only one right way to be human. Standardized corporate cultures are more likely to produce frustration and stress in those outside the power elite because workplace experience often bears no resemblance to the management mythology or the content of published standards, and their effects are harder to resist because they are forms of control that are not as apparent as former bureaucratic forms (Barker, 1993).

Workplace philosophies such as TQM and lifelong learning standards affect how meaning is made and how people understand conceptions of "truth" (Alvesson, 1987; Berger & Luckmann, 1966). In this way, lifelong learning standards can be regarded as a form of police state epistemology, an inculcation of bodies and minds, a subordination of will and self, a "deep acting" role in accord with corporate and policy-making behavioral and attitudinal expectations. The development of standards and the implementation of standardizing management practices are ways to control aberrations in the social order (Darrah, 1996; Hochschild, 1983; Mumby, 1992).

As Kincheloe (1995) said, "modernist leaders learned that the best way to produce stable and predictable public behavior was to minimize overt signs of power and to cultivate compliance in the name of reason" (p. 27). Macedo (1994) added that to dissent was "tantamount to committing professional suicide: It is all right to have an opinion as long as that opinion coincides with the dominant ideology" (p. 50). It is also clear that "educational sites are regulated through discursive practices and education pro-

vides sites, such as schooling and increasingly adult continuing education, where regulation through these practices takes place" (Usher & Edwards, 1994, pp. 48–49). In support of socioeconomic discourse, workplace education and lifelong learning standards normalize the "skills" and characteristics of an adaptive and flexible worker, masking new ways to control embedded in skill-oriented language (Noble, 1990). In this way, educational practice in the form of training and development substantiates, certifies, makes concrete this normalization. EFF standards, in addition, seek to make portable this normalization in the form of credentialing. The result of this process is "stationing" or "the placing of the individuated person in the position required by the social order" (Fiske, 1993, p. 67).

Foley (1999) discusses the economic policy developed by the Labor government in Australia. Not unlike EFF, they identified the workplace restructuring as a complex social process that moved beyond the narrow prescriptive technical- and ideology-based solutions of free-market advocates. However, in practical application, the focus was on skill formation and narrow occupational categories that could be translated into specific measurable competencies. Through these processes downsizing, efficiency, and cost cutting are relatively easy to accomplish. However, any real change in the power structures and skill development within the context of work is a much more complex process.

The assumption when we talk about skills is that we understand what is actually occurring on the job; how that job is accomplished; as well as the implications this has for workers, for management, and for work. The result is a discourse on skills as a neutral concept that results in unexamined assumptions about power, control, and human agency. Darrah (1992, 1994, 1997) places the skills discourse within a particular way of viewing and understanding workplaces, workers, and jobs. There are three underlying assumptions. First, skills are decomposed with people and jobs broken up into discrete characteristics. As Darrah (1997) states, "Our attention is thus directed to whether incumbents possess particular skills, rather than to how their jobs shape their learning or the incentives they have to perform work" (p. 252). Second, the job context is viewed independently from characteristics of workers. Accordingly, education is very narrowly defined. There is a single way to perform a job. Just as early-twentieth-century efficiency expert Fredrick Taylor was looking for one best way to do a job, the current process improvement initiatives involve a search for best practices. Accordingly, if a worker does not have a particular skill to perform a job task in the specified manner, the job cannot be done. Third, the workplace is a backdrop for the use of skills. Workers can perform these skills in any work context. How the workplace structures the learning and action is missing. The workplace is a neutral site where skills are used.

It is only the worker who is viewed as a problem.

Work and the concept of skills are much more complex than these assumptions would lead one to believe. For example, at Plastiform (Howell, Preston, Schied, & Carter, 1996) workers identified problems with machinery in different ways. Line workers with years of experience could identify and fix problems because of the feel and sound of their machines. Their skills were not learned from a technical manual, but rather from years of interacting with their machines. Orr (1996) talks about the gap between how Xerox repairmen are taught to repair copy machines and about the day-to-day reality of their jobs. He describes how these workers are required to interact with customers and the copy machines within the context of the workplace and each other in order to be able to do the required repairs. It is to the advantage of the employer that much of the actual work is invisible. Work that is not predefined and connected to a particular skill is not considered work at all. Hull (1997) suggests that skills are less connected to abilities than rights and opportunities; they are linked to structures of authority and "skills change when authority changes" (p. 126). Employers therefore avoid the need to upgrade positions and/or pay high wages. "This approach conflates two separate dimensions of skills; the genuine foundation, which is related only to the competences required to undertake the tasks, and the socially constructed skill labels manifest in the grading structure, which reflect also, and on occasions primarily, the power relations and social values of the parties to negotiation" (Winterton & Winterton, 1997, p. 156).

Cunningham (1993) has critiqued how workplace adult educators speak about "human resources, not people, certainly not workers" (p. 13). She observed that instead of locating themselves in adult education history and acknowledging how the nature of work is socially constructed, experts and professionals "ignore the roots of adult education," which is "historically aligned with the political and social movements that challenge the assumptions of the present" (p. 13). As Cunningham said, these experts now "unabashedly side with management to develop human capital and to make workers responsible for production from which the managerial class profits first and foremost" (p. 24). Critical educators, however, question discursive practices such as standards, TQM, ISO, learning organizations, skill orientation, team cultures and other emerging management practices. These discursive constructs may rob people of agency and "author-i[ze] certain people to speak" while correspondingly silencing others, or making their voices less authoritative" (Usher & Edwards, 1994, p. 90).

Language: Corporate Rhetoric/Double-Speak

Language transmits ideas and concepts. Usually, verbal and written communication function as the means

to convince, manipulate, and/or influence. Language can aid in avoiding accountability, serving to persuade and to make acceptable what people would normally resist. Language can intentionally mislead while pretending innocence. A sophisticated use of language can mask awareness of issues of power while appearing benign. When individuals begin to carefully examine the language in a standards document, for example, they may begin to understand the fine distinctions in how words are used, the different meanings words produce depending on each person's situatedness. When individuals can interpret the language of standards as manipulative or biased toward a certain set of perspectives, resulting behavior may involve cynicism and alienation, compliance and passivity, and, on rare occasions, a desire to change existing circumstances.

The effects of language employed in management rhetoric and standards can be both insidious and relatively invisible as it incorporates authority with learning and reiteration. Over time, words automatically seem familiar, reasonable, and they evoke predefined responses, thereby precluding the reader or listener from having to think carefully about a topic. Concepts become part and parcel of an individual's day-to-day vocabulary and normalcy. The jargon of corporate America and the language of standards assist its authors in disguising and preserving power. It guides people to think about circumstances in specific ways and for specific purposes. For instance, management techniques as well as standards and guidelines projects have redefined words, restructuring them to describe an environment specific to new ways of thinking, and eventually replaced old meanings with a different, and often politically weighted, definition that helps to promote particular perspectives or ways of thinking.

An imperative for workers, citizens, and lifelong learners is to realize the EFF standards are customer-driven and identifying the "customer" will reveal the motivation behind the standard and how it is written. Workers and citizens can also be customer driven. Understanding that they are consuming this language and being critical of the standards they are expected to adhere to is similar to being critical of the fat content in a can of soup, the warranty that is offered on an automobile, or the underlying meaning of the messages in television advertising. Considering the source and following the purse strings are all-important parts of the critical consumer process.

Workers and citizens are, for the most part, always monitoring their behavior and how they express themselves as these relate to accepted practice. For example, what is the impact for a worker who cannot articulate the standards and guidelines that ground daily processes and activities? Most workers learn very quickly that they must be able to express how they go about daily tasks in terms of customary workplace language. Even though workers understand without question that "downsizing" and "reengineer-

ing" mean being laid off or being fired, they conform to business and industry's standardized jargon. Most also know that being "empowered" does not imply any mandate to make important decisions. In these cases, a concept has been reconceptualized by management *and* labor even though it is only management that benefits from employing it. In subtle ways, workers who perpetuate these value-laden terms and phrases help to fortify the perspectives of those privileged few in control of organization.

Of course, creating a population with critical perspectives on standards and corporate language is a project that would necessitate multiple strategies, tactics, and bringing together many dissimilar groups of people with divergent philosophical orientation who may already be involved in other political, social, and cultural struggles. A critical understanding would evolve from the contexts of people's lives including elements of race, gender, class, age, culture, and sexual orientation. The significance of researching the language of standards, policies, and workplace jargon helps people to expose contradictions, ulterior motives, misleading statements, and injustices of all kinds.

Language: Reprise

Management practices and standards development have been praised as helping create accountability, an empowered workforce, and a participatory workplace. However, educators and cultural workers who have critical perspectives would argue that standardization and master narratives such as TQM alienate people from their own agency and ability to define and change their circumstances. This alienation is due, in part, to the workings of power in the form of standards and management philosophies, language, methods, hegemonic structures, and practices of discursive and ideological control (Gergen, 1982; Macedo, 1994; Mumby, 1988; Townley, 1994). Language is never just a tool or an objective construction; it is imbued with power—power to help and power to control, impose, or oppress. Gee et al. (1996) dubbed the process of conforming to rules and standards as "mastering identities" because in essence, workers are required to personify management ideology. Wartenberg (1992) described such power-laden situations as follows: "the presence of power relationships causes human beings to make choices that determine the sorts of skills and abilities they will develop" (p. 100).

With a world incrementally defined by technology, hyper-reality, and the search for maximization of profit, questioning the purpose and origin of the EFF initiative is vital. Standards, including educational standards, are put into place by large societal institutions and stakeholders and they tend to benefit privileged and powerful sectors of society. Given EFF's totalizing "nature" and the powerful stakeholders who developed it, it is incumbent upon educators and cultural workers to understand how the "effective" "customer-driven educational system"

they wish to construct coincides and collides with the ideas espoused by those who believe in education for social justice. The spotlight on the economy and achieving corporate goals overshadows, if not entirely erases, the growth and development of human agency of workers, and may have the effect of canceling possibilities of transformative effects of workplace education or creating organizations that are both productive and democratic (Kincheloe, 1995). The use of business-oriented language and the tendency to validate corporate goals brings up questions such as: In what ways can a social-justice, philosophical perspective benefit from or coexist with standards such as EFF and likewise take advantage, when appropriate, of its precepts? Alternatively, how do the standards inhibit, suppress, or devalue alternative ways of thinking about education and its purpose?

Complex Standards for Complex Workplaces

EFF standards are billed as "what adults need to know and be able to do in the 21st century." They are all about lifelong learning. Yet, real learning cannot occur and workers cannot learn to use critical-thinking skills or accept the mapping of their workplace roles without questioning and/or researching assumptions (Kincheloe, 1995). Consequently these initiatives may actually create possible sites of learning that can be turned in favor of workers. Therein lie opportunities to find new meanings for quality, empowerment, commitment, participation, trust, collaboration, and teams. There is the challenge of taking a close look at standards workers are expected to adhere to and meet and working with policy makers and management to improve them. A critically oriented citizenry and research-oriented workforce would learn to be vigilant in terms of the stakes involved in implementation of management techniques, new laws or policies, or recommending of standards. Workers and citizens who are critically aware participants, versus those who blindly accept standards, question how the processes they follow on a daily basis have been developed, why particular populations are obliged to learn them and abide by them, and how they are deployed. Enforcement of standards may be via duress, salary or promotion incentive, threats, or hegemonic means but inevitably they exert pressure to establish norms and build conformity among the population. The ability of workers to conceive how enforcement works and to increase their critical perspective about their jobs will help to ascertain self-knowledge and power as well as build confidence in their ability to take control of their lives, their work, and their communities. In the long run, wouldn't a workplace or community that embraces questioning and rigorous analysis of issues actually create even higher and better "standards" because each and every person is not held to a single definition of what constitutes quality, excellence, and effectiveness? After all, the nature of democracy is to allow a variety of

legitimate definitions of good citizens, workers, and students.

Cunningham (1998) said that so-called personal transformation is not enough because "what is not formed by action on oppressive structures is suspect even though the involved individual may feel good or even autonomous" (p. 17). Hopefully, what this effort to critique language has conveyed is the idea that education is intimately involved in the epistemological processes that ultimately guide and direct the lives of citizens and workers. Processes of education can be personally and socially transformative and freeing, but may also routinely create standardization and social regulation. A so-called participatory and humanistic workplace education conceals an "instrumentalism which underpins the increasingly dominant training and enterprise culture" (Usher & Edwards, 1994, p. 29). Cherryholmes (1988) helps to illuminate the deep-seated conflicts embedded in management rhetoric and in the contradictions of capitalism:

> In many ways . . . contemporary education is constructed on outmoded and dangerous structural, utilitarian, and instrumental assumptions. They are outmoded because they make rhetorical claims for textbooks, teaching, research, and practice that their logic subverts. They are dangerous because they rhetorically promise foundational, final, and efficient answers about which their logic is silent. They dehumanize by demanding that we adjust to structures imposed upon us while remaining silent about the exercise of power within those structures. (p. 186)

Adult educators who are "handmaidens to business" (Baritz, 1960) and their use of methods that constitute a "one best way" within performance-conscious corporations focused on efficiency, productivity, and profit are antithetical to critical educators and cultural workers. Fundamentally the disconnect, although extremely complex, exists at the level of questioning whether or not standards whose language reflects the goals of corporations and their profit and productivity must come at the expense of worker freedom, creativity, solidarity, and dignity.

Hull (1997) notes: "The kinds of literate activities that a person engages in at a workplace may have more to do with workers' rights and responsibilities and the limits and constraints set by the company hierarchy than with the nature of the work per se" (p. 124). She believes that literacy activities relate fundamentally to hierarchies and power structures while masking workers' "literate identities" and the role and importance of literacy as a part of the texture of the myriad social roles that govern literate activities. Hull's research points to the necessity of viewing workplace literacy (and EFF standards) in ways that are poles apart from the criteria currently proposed and are part and parcel of complexity and workplace power structures. Hull (1997) writes about literacy as a repertoire of literate practices and workers "taking part in discourse around text,

participating in the flow of information, problem solving—and then to include using literacy in the exercise of critical judgment, using literacy to acknowledge, exercise, or resist authority" (p. 126).

Those that provide an analysis and critique of standards are often accused of being against accountability, excellence, creating tougher/higher standards, raising the bar, (compulsory) lifelong learning, improving performance. We would argue that this critique in reality is about raising the bar, creating standards of complexity that recognize the complex reality of workers' lives at work, at home, and in their communities.

Declining Job Quality

Despite the fact that EFF claims to have surveyed all stakeholders in the development of its standards, the report, in fact, ignores what is actually happening in the American workplace. The report argues that it is the workers that need to adapt, become more flexible, and develop positive attitudes. Yet the realities of the American workplace are quite different from those painted by the EFF report. For example, real wages fell by 13 percent between 1973 and 1996, despite the fact that the United States has had the greatest economic expansion in its history. Moreover, decreasing real wages represent a fundamental shift from the years of 1959 to 1973 when wages rose every year, during both recession and expansion. As Tilly (1998) notes, the role skills played in this decline is not due to a decline of skill level:

> The great irony is that this wage loss took place at a time of increasing skill levels. Thus, an apparent paradox: income gaps between workers with low and high levels of education widened dramatically even as the workforce as a whole failed to gain a payoff from its increased educational attainment and skill. Minority workers' education increased as well: in fact blacks narrowed the education gap with whites, but experienced a widening pay gap. (p. 1)

Moreover, looking at other measures of job quality such as fringe benefits, due process, flexibility, job performance, mobility, and control over the work process strongly suggests that jobs are getting worse. Regarding fringe benefits, the paradox remains that an increasing share of workers' compensation goes to health insurance and a declining share of the working population is covered by employer health insurance. With the decline of the union penetration (from a high of 30 percent in the 1950s to approximately 16 percent now), union-enforced guarantees of due process in arbitrary action by employers has declined. In fact, adults are working more hours and more are working at part-time jobs.

Evidence also suggests that adults "are primarily flexing to meet the needs of business, not to please themselves" (Tilly, 1998, p. 1).

The goal of portable credentials for adult learning means more federal,

state, and corporate dollars expended or invested in the enterprise of adult education in order to develop a seamless adult workforce development system. The EFF standards become an instrument, based on policy, of economic rationalism and learning reforms. In addition to lining the pockets of this form of adult education, the purse strings can also be traced to policy makers, politicians, book publishers, standardized testing agencies, experts who have the authority to mandate and control change, and "other stakeholders" who have expectations, based on the standards, for "what students know and are able to do" (Stein, 2000, p. 19). Moreover, it is highly questionable that creating lifelong learners as proposed in EFF's corporate model will create an economic utopia for most workers. Is the notion that workers are unprepared in the realm of higher mathematics really the cause for reengineering and downsizing, or is it because a corporation like Disney can pay Vietnamese workers to make Happy Meal toys less than 8 cents an hour for 9- to 10-hour shifts, 7 days a week, in a highly toxic environment with poor ventilation (Tilly, 1998; http://www.heureka.clara.net/gaia/global02.htm)? Will workers with better backgrounds in trigonometry "fix" our alleged economic problems?

Thus, despite the claims of the EFF report, developing appropriate competency in the sixteen standards will not necessarily result in better-paid, high-performance workers. On the contrary, the EFF standards, by ignoring the realities of the twenty-first-century workplace, promise to create workers that are adjusted to accept a decline in job quality, rather than develop skills to improve their job quality. Different, more worker-oriented standards need to be created to achieve the goal of real job improvement.

Kelley (1997) describes how corporations do not respect boundaries separating community and work, home, and public spaces, saying "the battle for living wages and fulfilling jobs is inseparable from the fight for decent housing and safe neighborhoods" (pp. 125–126). A need for coherent visions (now even a vision for one's family) also becomes a part of the standards—business-speak invades the increasingly permeable boundaries between life at work and life not-at-work. The assumption that all workers, parents, and citizens need to learn the same utilitarian things as part and parcel of a human-capital accounting model is fundamentally repugnant and objectionable; the consequences of the ideas and philosophies behind standards are largely unexplored.

We ask if standards are partially a diversion—a way to obscure the useful activities of dissenting; of fostering competing dialogues; of developing real intellectual rigor/inquiry; of facing and changing issues of democracy, equality, and social justice; of appreciating more than a wage and salary; of having enthusiasm for learning? Gaventa (1991) discusses the idea of "literacy from the top" and how it does not alter the power structure or position of workers within the work-

place or society at large. It gives them skills desired by the dominant society but in reality disenfranchises workers.

Kincheloe (1995) promotes the idea of workers as researchers and Gaventa (1991) describes worker-researchers as "guerilla research." Workers investigate and ultimately are able to develop ways of gaining information about the power structure. Three outcomes are described: first, confronting experts and demystifying that form of knowledge; second, owning and reflecting on the knowledge they gain; and third, identifying active strategies to effect change.

Toward Standards of Complexity

Critical educators and cultural workers would ask whether worker standards help to create a sustainable society—a society that satisfies its needs without diminishing the prospects of future generations. Critical workers or workers as researchers would also ask if the corporation they work for produces something they believe in, looking critically at the purposes of its product and *how* it is produced. Finally, and fundamentally, EFF standards do not critique the concept of the overall goal of a "bottom line"—the maximization of profit and valuing of acquisitive materialism as ultimate goals. Although we understand that economic activity is basic to any society, we must question the *nature* of that economic activity—whether a materialistic society is suited to human needs. The interests of economic experts; their political counterparts; the business elite; and technicians in the fields of productivity, quality and certification, literacy, standards, and adult education as a means of facilitating corporate productivity combine to support globalized capitalist interests along with an extremely limited social critique. Standards based on a consciousness of complexity would establish democratic nonoppressive workplaces not just in one organization, not just in the United States, but for workers everywhere.

Standards would focus on workplaces as well as workers. Rather than listing discrete competencies, we suggest that in order to reflect the complexity of the new workplace, standards developed within the context of the workplace revolve around and address these types of questions (Cunningham, 1998; Hart, 1992, 1995; Schultz, 1997; Tilly, 1998):

- Is corporate economic activity ecologically sound?
- Are gender discriminations in the workplace addressed?
- Is the corporation socially responsible?
- Do workers share the benefits from their labor?
- How might a program of full employment make available decent jobs at decent pay to all who want one?
- How might the labor movement be revitalized as the agent most invested in pressing a good job agenda?
- Who benefits from the knowledge

that is developed in the workplace and what is its purpose?
What knowledge is included and what knowledge is excluded?
Who selects the knowledge and who is excluded from the selection process?
Why is learning organized and taught in a specific way, and what other possibilities are there for teaching and learning in the workplace?
Is there an effective means to strengthen labor legislation and enforcement that ensures worker and union rights?
What are true high-performance work organizations and how may they be achieved?
What means can be found to strengthen provisions designed to protect those disadvantaged in the labor market (i.e., minimum wage, gender pay equity, antidiscrimination)?
Will institutions be willing to invest in training that is broadly defined?
How can a broader, stronger safety net of social benefits be constructed?
Can work/family flexibility be expanded so that not just the corporation but the worker and the family are beneficiaries?
Has work been defined in ways to suppress greed?
How can a wider range of socially productive work, such as "mother work" be acknowledged and connected to decent pay?

Appendix A

The Sixteen EFF Standards

Communication Skills
- Read with understanding
- Convey ideas in writing
- Speak so others can understand
- Listen actively
- Observe critically

Decision-Making Skills
- Use math to solve problems and communicate
- Solve problems and make decisions
- Plan

Interpersonal Skills
- Guide others
- Resolve conflict and negotiate
- Advocate and influence
- Cooperate with others

Lifelong Learning Skills
- Use information and communications technology
- Learn through research
- Reflect and evaluate
- Take responsibility for learning

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LEARNING FOR THE TWENTY-FIRST CENTURY

Raising the Level

Stan Lester

In *The Fifth Discipline* (1990), Peter Senge applies the idea of learning disabilities to organizations as well as to people. He suggests that they can be just as damaging to companies or institutions as to individuals, and can quickly become fatal as the organization fails to innovate or keep up with its operating environment. Although the notion of organizations learning—or failing to learn—is problematic, there is value in considering how not learning quickly enough or at a deep enough level is affecting organizations, people, and the world as a whole. If inadequate learning can lead to the decline and closure of formerly successful businesses, what impact is it having on our economies, our well-being, and our environment?

The thesis of this chapter is that collectively we are rapidly becoming, for all intents and purposes, "learning disabled" as our collective rate of learning fails to maintain adequacy for the rate of technological, social, and economic change. The problem is to some extent a quantitative one, in terms of the numbers of people who are not responding effectively to change; but it is also a qualitative one, as much thinking and learning that has been sufficient for the twentieth century may no longer be effective as we enter the twenty-first. If we are to escape this disablement, we need to lift the level of our thinking and learning, with profound and far-reaching implications for our systems of education and training.

Twentieth-Century Learning: Model A

To generalize with any sense of practical meaning about human thinking

and learning is an exercise doomed to failure, for it is attempting to encapsulate an almost infinite diversity of activity across millions of individuals and a multitude of cultures. To do so in a short chapter is potentially even greater folly. However, if "thinking and learning" is narrowed to the kind of thinking and learning regarded as valuable in "mainstream" Western cultures, and the author's immersion in those cultures is acknowledged, it at least becomes more possible to produce an analysis of sorts. The type of generalization about learning that can perhaps be made with some validity is one based on discerning patterns of activity—in business and public service environments, in schools, colleges and universities, and in interactions among people more generally—and seeking underlying assumptions and structures that influence or govern them (cf. Argyris & Schön, 1974; Fritz, 1994).

The theories-in-use and social and institutional arrangements that underpin dominant twentieth-century approaches to education manifest themselves through the presence of taught, subject-based courses, claims to bodies of knowledge, preset written examinations and other forms of testing, and an obsession with curricula, syllabi, and "standards" or lists of competencies. Beyond compulsory schooling there is little change, with for instance the presence of professional qualifying bodies that seek to establish bodies of knowledge or competency frameworks, and a general tendency toward credential inflation in which qualifications act as proxies—reliable or otherwise—for actual abilities. These phenomena all point in the direction of an underlying set of technical-rational assumptions (Schön, 1983, 1987), in turn based on positivist epistemologies and structuralist social assumptions. This is not to ignore the many examples of educational practice that are other than technical-rational in nature, but to suggest that how we think about facilitating learning is broadly dominated—particularly at a policy level—by a technical-bureaucratic paradigm, or what I have termed "Model A" (Lester, 1995).

This dominant perspective is primarily normative and hierarchical, both epistemologically and in terms of the assumptions about roles, modes of action concerned with learning, and modes of practice. It sees knowledge as being stable, general, and separate from the learner or knower; capable of being separated into disciplines and codified into bodies of knowledge. It maintains a linear view in which research and deduction reveal theoretical or scientific knowledge, from which applied knowledge is developed and finally put into effect through practice. Educationally, it is expressed in terms of curricula, syllabi, lists of skills or attributes, and more recently, competence frameworks, i.e., either as theories as to what knowledge and theory is to be learned, or as theories about what constitutes good or effective practice. The socioadministrative assumptions of Model A are also nor-

mative, with what is to be learned being largely decided through expert or bureaucratic authority. The learner's position is further down a hierarchy of action than the learning decision maker, a situation that is tacitly reflected to a greater or lesser extent within the aim of the learning itself: the learner is developed to operate *within* whatever system the learning relates to, rather than to operate *on* it.

Model A thinking is suited to situations where people have clearly defined roles—both economically and in wider contexts—and stability is provided by an "external" system of administration or market relations. It assumes a stable state or predictable rate of change, allowing knowledge to be researched, codified, and disseminated in time to enable effective action to be taken. It essentially assumes structured social and employment relationships; defined roles and responsibilities; and technical, administrative, and expert approaches to work: thinking and working rationally within frames of reference dictated by wider contexts, conventional wisdom, and taken-for-granted assumptions. It also assumes that cultural differences are either unimportant or can be normalized in a rational way that is assumed to be culturally independent.

This approach perhaps has a form of degenerate if oppressive validity in industrial or preindustrial contexts where the rate of change is slow enough to enable a small minority of people to shape systems and processes while the majority work within them. However, it is increasingly apparent that accelerating rates of change are invalidating many industrial-era assumptions about organizing and doing (e.g., Schön, 1967, 1971; Toffler, 1980, 1990; Handy, 1989). At the same time the major issues we face are less often amenable to linear, problem-solving modes of thought, but more often contain "messes," divergent problems, and conflicts of value that require more systemic and creative ways of thinking and acting (Ackoff, 1974; Schumacher, 1977; Schön, 1987).

There are many easily observed instances of the effect of failing to respond adequately to underlying change. A topical example is the phenomenon of "restructuring," whether in terms of the organization of companies or educational establishments, or of policies and administrative systems. While reorganization may be carried out at increasingly frequent intervals, the result is rarely more than qualitatively similar modes of organizing, which are then quickly outmoded as pressure builds toward further reorganization. There is commonly plenty of first-order learning in reaction to (or anticipation of) situations for which the existing configuration is no longer effective, but little higher-order learning that seeks alternatives to stable-state assumptions about organizing. The result is a spiral of fire fighting and dysfunction as incremental changes are made within a conceptual framework that is inadequate for what it is being asked to achieve. Indeed, the entire technical-rational

project is itself a mode of organizing that requires and necessitates frequent overhaul, because it is built on assumptions that fail to account for change and difference.

A perspective that is focused on technical standards and problem solving is self-limiting both because of its ignorance of the need to first construct or "set" problems, and because of its entrapment within the frame of reference that defines the problem itself. Russell Ackoff comments that "we fail more often because we solve the wrong problem than because we get the wrong solution to the right problem" (1974, p. 8); this issue of finding the right problem is more than an exercise of analysis and logic. Problems exist within contexts and frames of reference that give them their definition, making them value and perspective dependent. A technical-rational approach provides little help in problem construction, because it has no human or ethical dimension and therefore no adequacy for dilemmas of value or conflicts of perspective. While it might suggest the means by which an outcome can be attained, it provides little help in deciding whether it is desirable, ethical, or "good."

Unfortunately, much formal education is heavily influenced by modes of thinking that offer to provide right and wrong answers—the solutions to problems—and formulae for arriving at them. Robert Reich (1991) argues that many learners are put through a sanitized curriculum in which reality is simplified through the imposition of meaning, denying them the responsibility to "interpret and give meaning to the swirl of data, events and sensations which surround us" and retarding their "ability to thrive in a world brimming with possibilities for discovery" (p. 230). This kind of education, with its antagonism to high-level learning, is a totally inadequate response to the needs of the twenty-first century.

A Case of Inadequacy

To put forward a general principle, if an individual's or society's learning is equal to the rate at which its environment is changing, on balance the result will be functionality and effectiveness: the individual or society will, for most of the time, be equal to the challenges of the environment rather than a victim of events. If learning exceeds the rate of external change, the result will be a dynamic "meta-stability" in which there is a degree of choice and control. On the other hand, if learning is inadequate for the context, it will produce ineffectiveness, dysfunction, and structural blocks, leading in a downward, pathological direction. Feedback loops exacerbate the situation as learning affects the environment, so that for example, rapid technological change will typically demand learning at a higher level in order to be able to use the technology wisely.

Presently, our situation might be summarized as a rapidly changing environment with human action both collectively and individually capable of high impact, yet with a dominant paradigm of learning that is failing to

produce answers adequate to our most pressing social, environmental, and economic problems. It is perhaps inevitable, given the susceptibility of convergent, technical issues to dominant modes of analysis and action, that while technological advances continue apace, divergent, social problems appear if anything to become more messy and challenging as time moves on. We have made little progress in (for instance) preventing war or famine, mitigating our impact on the environment, or indeed in assisting people to raise the level (as opposed to the content) of their learning, and in some of these areas our record is arguably in reverse. At an individual level we continue to see fight/flight responses, increasing levels of stress, and a desire for stability at the level of first-order content, while collectively complexity outpaces both our systemic understanding and our capacity for internally generated change.

In response to this, one reaction is to reduce our technology to a point that can be managed by relatively low-level thinking and learning, and return to ways of living that have less potential to impact our environment (e.g., Illich, 1973). A more positive route is to raise the level of our learning—individually and collectively—in order to develop wisdom and adequacy as well as technical capability.

Raising the Level

The idea of levels of learning can be illustrated using a model akin to those developed by Gregory Bateson (1971) and Chris Argyris and Donald Schön (1974). This is perhaps easiest to consider by starting with nonlearning, which can be defined as a situation in which the same action is offered repeatedly regardless of its appropriateness or effectiveness: for any stimulus, there is a set response. While the action may start off as being effective in the situation for which it was designed, it becomes dysfunctional once this changes or ceases to exist. The most obvious examples are mechanical or biological, but nonlearning is also encountered when people continue with familiar behaviors that were once effective but now have undeniably negative consequences. This may occur either because there is no effective feedback loop—the person is unaware of the effect their actions are having—or because a higher-level block enables them to ignore, deny, or explain away the evidence that is available.

A basic level of learning involves action being adjusted in response to feedback, but without challenging the underlying theories-in-use of the person concerned. Argyris and Schön (1974) liken this "single-loop" learning to a thermostatic system, with the learner's "guiding assumptions" placing limits on the internal shifts that can be made. Typically, this first-order learning is adequate for relatively familiar situations, but it is only as effective as the person's guiding assumptions allow. Dysfunction at this level frequently presents itself in the form of recurrent or oscillating outcomes or patterns of behavior that either go unnoticed or are reified into limiting

structures and beliefs. A first-order response to these apparent limitations tends to manifest itself in various forms, all ineffective: these can include concentrating efforts on "solvable" problems rather than underlying issues; distorting or speculating to make what is observed fit a preexisting paradigm; transferring responsibility elsewhere (frequently to people or events but often also to reified concepts such as "the organization," "the system," or "society"); and assuming that there are insurmountable natural laws in operation (e.g., "human nature").

Overcoming first-order blocks requires a change in the guiding assumptions that govern the learning system: stepping outside the current frame of reference; suspending the assumptions embedded within it; and using critical, creative, and intuitive thinking to generate alternatives that are more functional and effective. Argyris & Schön (1974) term this "double-loop learning," although it can be considered as part of a multiple loop where guiding assumptions exist at a number of levels from basic conceptions that are fairly easily challenged and overturned once identified, through logics of action, to fundamental values and belief systems.

A major inhibitor of multiple-loop learning is that dominant Western thought is reluctant to admit that more than one logic of action or basic paradigm may exist at once (cf. Kuhn, 1970). Thinking and learning that involve changing deeper-level assumptions suggest being able to move among different logics or basic frames of reference, and this in itself can represent a paradigm shift at a fairly fundamental level for many who are schooled in normative thinking. The idea of a single logic of action is so well embedded in many people's thought that it is both individually self-limiting through preventing openness to alternatives, and a powerful source of double binds in which rational arguments are accepted without questioning from what perspective the rationality is operating.

There is at least another level of learning beyond changing logics-in-use, which is concerned with fundamental beliefs and values and perhaps ultimately with what we have come to identify as personal identity. While it is clear that people's beliefs, values, and basic frames of reference can change over time, this is rarely seen as the territory of learning, possibly because it is concerned with changing apparently "fixed" factors such as personality and intelligence. Bateson (1971) describes this learning as being concerned with the contexts of learning, the "larger sequences in which paradigms are embedded" (pp. 303–304), and suggests it may occur through psychotherapy, enlightenment, or profound change of character. However, learning does take place at this level without external intervention, though the tendency to live with value conflicts suggest that most people demonstrate limited capability to learn and achieve congruence at this level. This is perhaps unsurprising as our dominant educational and societal paradigms persistently attempt to apply interventions from lower orders of

thinking to higher ones for which they lack adequacy.

Model A technical-rational learning essentially operates in a single-loop system from the level of logic downward. It presupposes conformance to a dominant logic and mode of thinking, and creates powerful contradictions and double binds as individuals' intuition and experiential logics are denied by culturally embedded norms and taken-for-granted assumptions. While it can be pragmatically effective in the short term, it is self-limiting in maintaining a focus "within the box" even when the "box" has lost all validity, as well as denying the value of the personal and the subjective. To raise the level of thinking and learning in this context means moving above the single-logic barrier into working with divergent logics-in-use, frames of reference, and values on terms that are unbounded and ultimately nonjudgmental.

Changing the Paradigm

One of the major blocks to raising learning to a more adequate level is the set of epistemological assumptions that act as theories-in-use for much formal education and training, and are apt to become embedded as limiting personal beliefs for individual learners. Within Model A, three assumptions are particularly disabling. First, knowledge and theory are viewed as external to the knower and capable of being formalized into bodies of knowledge and ideas, suggesting that learning is simply a matter of discovering or taking in what is there already. Second, a hierarchy of processes is assumed that approximates to discovering or developing knowledge, codifying it, and applying it, with the application stage (practice) being intrinsically separate from and at a subsidiary level to the discovery and development stage (research and deduction). From this stems the assumed separation between theory and practice, a fundamental barrier to raising the level of learning. Third, developing "valid" knowledge is seen as a process of building from an established base of research and discourse, with the result that learning is validated largely by reference to precedent (or in higher levels of education, logical argument based on precedent).

From a different epistemological perspective, these assumptions can be interpreted as resulting from a failure to distinguish between *data*, which is impersonal and exists independently, and *knowledge*, which is constructed by the knower and is necessarily personal, subjective, and unique. From this standpoint, knowledge cannot be codified into bodies or judged as valid by reference to other, preexisting knowledge, and practice is intimately intertwined with theory rather than being subordinate to it. However, as a basis for a practical theory of learning it has frequently been dismissed because it puts knowledge beyond absolute judgment and therefore invalidates its assessment, whether in education and training, research, management, or more informally. As a result, while it is

hinted at in some approaches to development such as action learning and reflective practice, there is frequently an underlying tension where external truths and established discourse are called upon to decide the "real issues," and thus normative assumptions reassert their dominance by the back door (Lester, 1999).

Nevertheless, there is a workable alternative to this bipolar confusion, which while based on an epistemology of personal knowledge, also lends itself to rigorous evaluation. In practice, it is possible to test knowledge, theories, and hunches in terms of their value to what the individual (or group or society) wants to achieve: their fitness for purpose. The criterion is "does it work?" or "is it useful?" rather than "is it true?" This method of validation places the responsibility on the person to determine the appropriateness or goodness of fit of their ideas, and to seek feedback, and if necessary, make modifications. It avoids accepting the ideas or judgments of others at face value, but develops a questioning approach where the learner is asking "what does this achieve, what is it good for?"

Fitness for purpose moves beyond precedent-based and technical-rational approaches in that it requires knowledge and theory to be evaluated for action rather than being the determinant of action. It is consistent with a personal knowledge epistemology because it evaluates knowledge (and action) against the knower's internal agenda rather than against any external expectation of what should be known (or done), and makes use of a feedback system where practice and theory interact in a cycle of development and modification. Its limitation is that it is bound by the purpose set by the person or group, which effectively acts as the "thermostat" of Argyris and Schön's learning system and dictates the extent to which ideas are evaluated and challenged.

Overcoming this limitation involves considering fitness *of* purpose: essentially, exploring what the purpose achieves until a point is reached that has intrinsic value, and then going on to consider the congruence of this deeper purpose in its wider contexts. (This is different from questioning the reasoning involved, which stays within fitness-for-purpose and may do no more than produce rationalized, precedent-based justifications that inhibit further learning or enquiry). While the thinking employed in validating fitness for purpose is of a purposive or problem-solving nature (in the sense used by Cox, 1980), fitness of purpose involves employing critical (ibid.), between-frame (Schön, 1987), and creative thinking. Another way of characterizing these differences is acting and thinking pragmatically "in the box," whether it is a box of personal or external creation, or critically and creatively "outside the box."

While critical theory and fitness of purpose extend beyond the limitations of the "box," they still use it as a starting point. However, as questioning extends to contexts *of* contexts, possibilities are generated for further levels of learning as reframing occurs at more

fundamental levels of belief and value. The idea of systemic thought and wisdom becomes useful at this point, in the sense of thinking that moves beyond considering the assumptions present in any given situation to connecting between situations and contexts in a way that transcends logics and encompasses multiple perspectives. Genuinely creative thought where the mind is freewheeling and operating outside any easily identified frames of reference is systemic in this sense; however, sustained periods of activity at this level are uncommon, and one is reminded of Bateson's comparison of his third-order learning to Zen enlightenment.

This idea of systemic wisdom is particularly elusive because it is outside the scope of not only the normal kinds of academic analysis, but also of language; it may be glimpsed more easily through poetic or spiritual forms of expression than through academic prose. However, it may be part of the human condition to be capable at least momentarily of transcending the boxes of culture and rationality, and *knowing* whether something is right or congruent: even if, as Darryl Reanney suggests, we "recognize the tune without hearing the music" (1995, p. 47).

Model B: Toward Adequacy

How can these ideas, culminating in a concept that is ultimately mystic (in its proper sense of irreducible), be used to reframe the way we approach education?

In the context of professional development and education, I have put forward a "Model B" theory of practice that is broadly consistent with deep-level reflective practice and critical action research (Lester, 1995). Model B is not a polar opposite of Model A, but a more spacious conception in which Model A can be seen as thinking that operates from a single frame of reference. Within Model B there can be any number of Models A, each representing a different rationality and perspective.

To develop this toward a philosophy for thinking and learning more generally, Model B works from an epistemology of unique, personal knowledge and recognizes people as free yet "interrelated agents who are responsible for their actions. However, through the concepts of fitness of purpose, fitness for purpose, and systemic wisdom, it builds in rigorous internal questioning of individual thought and action so that while there is a process of validation, it is based on individual responsibility and judgment rather than compliance with external norms, reference points, or claimed truths. It recognizes that effective learning and practice are essentially personal responsibilities that involve values, beliefs, and frames of reference, and that in order to be able to take these responsibilities, people must be able to step outside taken-for-granted assumptions and accepted norms.

Returning to the idea of adequacy of learning discussed earlier, the capacity within Model B to transcend individual frames of reference and

TABLE 1
Two Paradigms for Learning

	Model A	*Model B*
character	technical, logical, convergent	creative, interpretive, divergent
focus	discrete: primarily economic performance and societal stability; measurable outcomes	systemic: dynamic personal and global well-being, valuable outcomes
people	as citizens, role occupants, human resources	as unique individuals, agents, origins
capability	solvable, convergent problems	congruent futures; "messes," problematic situations, divergent problems
approach	solving problems; applying knowledge competently and rationally	understanding problematic situations and resolving conflicts of value; framing and creating desired outcomes
criteria	logic, efficiency, planned outcomes; cause-effect, proof	values, ethics, congruence of both methods and outcomes; systemic interrelationships, theory, faith
epistemology	knowledge is stable and general; precedes and guides action	knowledge is transient, situational, personal and unique; both informs action and is generated by it
validation	by reference to others' expectations: standards, accepted wisdom, established discourse; "truth"	by questioning fitness for purpose, questioning fitness of purpose, and systemic wisdom; "value"
thinking	primarily deductive/analytical; sceptical of intuition	inductive, deductive, and adductive; uses "intelligent intuition"

Acknowledgments to Schön (1983) and Fish (1995).

move beyond the purely logical makes it powerful for developing learning that has adequacy for its context and overcomes limiting structures, whether they are personal, organizational, or societal. The "structure" metaphor itself suggests the translation of a dynamic into a form of concreteness that acts as a boundary or obstacle to effective thought or action. Through reframing and raising the level of thinking, what appears as structure at one level becomes part of a more fluid dynamic at the next, enabling recovery

of responsibility from reified constructs to real people and providing greater leverage for action.

Given the interdependence between theory and practice inherent in a personal knowledge approach and given that practice may range from activity with a tangible outcome to exercising the spoken or written word, it becomes questionable to conceive of learning and action as essentially different activities. Model B therefore seeks ways of describing learning that are also ways of describing practice, and views learning as an endemic process rather than one that is confined to classrooms, training courses, or learning "activities."

Model B Learning

Model A is essentially concerned with learning that is verifiable against an external logic, standard, or discourse, whether it is the learning of academic theories or knowledge bases, specific skills, or theories of practice (for instance as expressed in competency frameworks). Within Model B, this "content" and its reference points are seen as belonging to one of many possible frames of reference: to employ Korzybski's (1958) widely used distinction, they are maps rather than territories. Model B is not opposed to learning "content," but it puts it in a wider perspective where any content is situational and subject to enquiry and review; conclusions are pragmatic, temporary stopping points that inform current action, as opposed to necessary generalizations or truths across time and space.

Model B can be thought of as concerned with "meta-learning": learning at a level that is at or beyond that of logics of action, enabling them to be created, modified, and re-created. It recognizes the limits of logic and rationality, and works with creative and intuitive processes to develop "new" perspectives and possibilities as much as working logically to solve problems and bring desired states into being. The processes of Model B learning can also be considered as "meta-practice," or an overarching framework for practical activity in an "outside-the-box" world. Model B learning is central to intelligent, capable practice that uses intuition, creativity, and interpretive judgment. Once the learner is aware of the capacity for learning that exists on an everyday basis and overcomes the blocks and double binds held in place by Model A thinking, Model B "meta-learning" starts to become a more natural and intuitive process in which theory and practice become different facets of the same activity.

Model B learning and practice can be assisted by approaches such as action learning, action research, and reflective practice, provided they are approached at a critical and creative level, rather than one that is purely concerned with purposive outcomes. To take action learning for instance, Reg Revans (1980) describes learning as involving both programmed knowledge ("P") and questioning insight

("Q") in a dialogue between theory and practice. However, the dialogue needs also to develop new personal theory (new "P") at (at least) a fitness-of-purpose level. Similarly, while action research has been described as "studying a . . . situation with a view to improving the quality of action within it" (Elliott, 1991, p. 69), the "study" needs to go deeper and question the situation itself in order to generate at least an awareness of the possibilities for acting on, rather than within, it. Reflective practice can also be used relatively uncritically to generate progressive improvement through reflection-in-action, but reflecting in a Model B sense includes what Donald Schön terms reflection on reflection-in-action, i.e., stepping back and reflecting critically on both underlying assumptions and purposes and on the reflection itself.

Toward a Metacurriculum?

If the kind of learning society is to develop is to be adequate to twenty-first-century contexts, learning will need to be accepted as natural and endemic rather than as something that occurs as a result of discrete learning events or through following a curriculum. Perhaps the greatest challenge in moving from a Model A, extrinsically driven learning society to a Model B intrinsic one is in overcoming the disabling belief that "important" learning is driven by someone else's framework, enabling movement from the content-based curriculum to an agenda based on developing capacities for self-managed learning at levels that have wisdom for a sustainable society and for people as unique individuals.

The idea of the curriculum as generally understood does not sit well with Model B. The hierarchical assumption present in a predefined curriculum—basically that it is one person's responsibility to learn what another decides is fit and appropriate to learn—removes the responsibility from the learner both for learning in its broader sense and for evaluating learning. To Ackoff, "a curriculum is a solution to a problem which does not exist . . . because what one learns is not nearly as important as learning how to learn, and because questions are at least as important as answers, students should . . . design their own curricula" (1974, p. 92). In the future it will be people who can design their curricula—and frame and reframe situations before attempting to act on them, manage "messes" rather than just apply technical solutions—who will be more likely to learn at a level and rate adequate to their environment. The capable learner in the twenty-first century is to be a mapmaker or active creator of knowledge, meaning, and practice, not merely a follower of others' maps.

In Model B, the curriculum or agenda for learning moves from the dimension of content to a "metacurriculum" that is concerned with this creative, critical activity of mapmaking rather than with the content of any specific map. Admittedly this is not in itself unproblematic, for it still represents a map of sorts in a different

dimension, but it has broken through the barrier of dictating external reference points and logics by providing a basis for validation that is intrinsic rather than involving referencing against others' expectations. The Model B metacurriculum is therefore concerned with fundamental processes such as enquiring, reflecting, evaluating, and creating, enabling the individual to continuously develop abilities that enable content learning appropriate to purpose and context. It is also reflexive, as the self-managed, self-evaluated learning processes are capable of being applied to themselves to generate an upward spiral of meta-learning, as well as facilitating development of situational knowledge and ability.

While this approach is not content-free—process learning or meta-learning takes place within a context and through working on "subject matter" or "content"—it is content-transcendent. The precise nature of the content is not of primary importance to the process, providing the freedom for "students to design their own curricula." The advantage is that rather than being prompted by a curriculum-driven model of learning, the content and context can be of direct relevance and interest to the learner, so that learning is purposive, intrinsic, and compelling. It is this purposiveness that enables the first-level evaluation of fitness for purpose to engage with the learner's values and beliefs, and provide a sound and rigorous basis for working meaningfully at levels beyond logic; without it, moving on to consider fitness of purpose becomes a detached and vicarious exercise.

In contrast, the more common approach of developing learning processes around an externally defined content curriculum presents a distorted version of this model, as while it is possible through debate and discourse to move beyond acceptance of taken-for-granted assumptions, an inherent tendency to deny the personal and rely on linear argument tends to develop analysis at the expense of synthesis, critique without creativity, and judgments of rationality rather than of value. This suggests that determining what knowledge and skills will be learned not only ignores the importance of meta-level learning, but works against it. Standardized curriculum models are a singularly inappropriate response to the need for people to be more learningful, adaptive, and resourceful, and instead drive toward a narrow kind of competence—mastering other people's agendas, whether of academic knowledge or practical abilities—that is decreasingly adequate in postindustrial contexts.

However, this does not imply an abandonment of information bases, theories, and educational guidance. It does mean that the maps presented by theories and syllabi are seen as maps, not territories; information is regarded as such, not as knowledge; facts and conclusions are seen as temporary stopping points, not absolutes; and thinking includes creative, intuitive, lateral, and parallel thinking as well as logical thinking. Maps and guidance structures are necessary to enable con-

nectivity, but they cannot become prisons, the only way of doing things. It is entirely consistent with a Model B approach to offer models and theories to assist the learner and point in particular directions, but they do not demand a different treatment from any other aspect of the learner's experience: they are phenomena to be enquired into, evaluated, and if appropriate, used, drawn from, redrawn, or rejected. Certain maps may be initially offered more prescriptively than others—those that are concerned with safety, equity, and legality, for instance—but there is no justification in claiming they are the territory itself or denying the learner the opportunity to subject them to enquiry and reframing.

An example of organized learning that is consistent with a Model B philosophy might provide an opportunity for learners to work on material of value to them, with facilitation to develop processes of learning through enquiry, reflection, dialogue, questioning assumptions and considering alternative perspectives, visualizing, using intuition, spinning off ideas, and developing and evaluating theories and courses of action: it will simultaneously be valuing practical outcomes, creativity, critique, and connectivity and systemic congruence. Part of the facilitative process might involve introduction of ideas or pointers to information, theory, or cases as well as suggestions for action, but in a spirit of enquiry rather than expectation of conformance. The aim is to develop self-managed and self-evaluated learning that integrates theory and practice, and develops a multiple loop where learning is at once purposive, critical, and creative, and building toward systemic wisdom.

Endpiece

Learning for the twenty-first century will certainly need to involve more people learning more, in order to create a climate that is responsive (and responsible) to change as well as being able, in the words of Tom Peters (1988), to "thrive on chaos." However, on its own this is not enough. If we are to be more than passive victims of change, we will need to raise the level of our thinking and learning to move beyond the boundaries of first-order assumptions and even second-order systems, and value development and action that contains systemic wisdom as much as fitness for purpose.

In consequence, it is no longer adequate to confine our thinking or acting to boxes of others' defining, or accept prepackaged definitions of what learning is appropriate or correct. The twenty-first century learner needs, to be effective, to be a mapmaker and not just a reader and interpreter of others' maps. In turn, this represents a major challenge to curriculum- or standards-driven models of education and training, and poses some questions that will be uncomfortable for educators, policymakers, and administrators who are not accustomed to thinking in terms of second- or third-order change. The point is not that we have

been wrong in the past, but that the future requires something qualitatively different.

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HISTORICAL TIMELINE FOR EDUCATIONAL REFORM AND STANDARDS

1892 Committee of Ten on Secondary School Studies issues report. Creates uniform academic requirements for admission to college, established a general framework for goals of secondary education. Can be viewed from the present as an attempt to promote new standards for high school education. Committee argues that all students can benefit from a high standards academic education.

1896 John Dewey founds Laboratory School at the University of Chicago. The school emphasizes student interests, active learning, work in groups, and cooperative learning. Dewey wants students to move beyond the momorization of data to an understanding of the social value of knowledge and the cultivation of the social imagination.

1896 *Plessey vs. Ferguson* establishes the separate but equal doctrine, which is used to justify racially segregated schools for the next fifty-eight years. There was nothing equal about the racially segregated schools maintained during this era.

1899 Dewey publishes *The School and Society* emphasizing that learning must always take place in relation to existing social conditions. Ideas and concepts would be learned in relation to the sociocultural context that gave birth to them.

1901 Margaret Haley of the National Education Association (founded in 1857) attacks notion of big business supporting and shaping education at the annual meeting of the organization. She advocates more control of teaching by teachers.

1903 W.E.B. DuBois publishes *The Souls of Black Folk*. Challenges the separate but equal doctrine and the segregation of public education.

1903 Psychologist G. Stanley Hall calls for schools to do all they could do to make boys more manly and girls more womanly in light of the fact that modern civilization was blurring sexual distinctions.

1907 William Bagley publishes *Classroom Management*. The book is reprinted thirty times in the next twenty years. Bagley argues that the most important role of school was to teach habits that students would use when they begin their work on assembly lines.

1909 Ella Flagg Young becomes superintendent of schools in Chicago and opposes vocational education because she

does not believe in educating students to take their place in the lower industrial class. Calls for the democratic empowerment of teachers.

1900–1910 Emergence of social efficiency education. Primary purpose of American education in efficiency movement not to promote academics but to train students to be socially efficient. Efficiency advocates embrace a vision of a socially managed society.

1910–1920 In line with efficiency principles school leaders work to standardize all aspects of education.

1912 American Federation of Teachers (AFT) founded.

1913 Edward Thorndike publishes *Educational Psychology*. The book shapes viewpoints on teaching and learning widely, promoting scientifically produced mechanical teaching methods that are used for decades. Success would be measured by batteries of tests and measurements.

1914 Founding of Modern School by anarchists in Stelton, New Jersey. Lasting until the 1950s, the school was grounded on the pedagogical belief that nothing should be imposed on the child. Graduates, founders hoped, would resist authoritarian institutions.

1915–1920 Emergence of widespread use of standardized tests.

1916 John Dewey publishes *Democracy and Education*. As the highest intellectual expression of progressive education, the book considers the challenge of providing high standards education in a democratic society. Dewey calls for the complete overhaul of American education, advocating the fusion of vocational and academic forms of study.

1917 Passage of Smith-Hughes Act. Establishes system of vocational education.

1918 Commission on the Reorganization of Secondary Education issues report entitled *Cardinal Principles of Secondary Education*. Calls for creation of the comprehensive high school to meet needs of the emerging corporate state. Different curricula would be designed for different types of students. Views the term "academic," with suspicion, often implying that it involves impractical knowledge. Provides a very different view of standards from the one laid out in the report of the Committee of Ten, twenty-five years earlier.

1918 William Heard Kilpatrick publishes an article on group learning called the project method. Instead of learning isolated facts students would work together to learn concepts and skills in the process of working on a socially useful project.

1920 Edward Thorndike's concept of the half-educated man published. Individuals are only half educated if they are unaware of intelligence testing. Knowledge of such test scores would help people learn their intellectual place.

1920s Widespread adoption of I.Q. tests.

1920s Era of child-centered education.

1920s Manumit School for workers' children and A. S. Neill's Summerhill School founded.

1920s Conservatives see a social breakdown in the school behavior of girls.

1920s Efficiency educators develop curricula to help girls assume their proper adult roles as mothers, wives, and homemakers.

1922 George Counts publishes study of urban education documenting severe class bias in U.S. schools around the country.

1923 Carl Brigham publishes *A Study of*

American Intelligence. Using intelligence tests Brigham, who developed the SAT in 1925, ranked the intelligence of ethnic groups: (1) Nordics; (2) Alpines; (3) Mediterraneans; and (4) Negroes. Brigham uses his work to call for an end to ethnic intermixing and the resulting downward spiral of American intelligence that it causes.

1926 Numerous authors and educational leaders lament the rising immorality of youth caused by parental neglect, popular culture, changing sexual mores, dancing, and emancipated womanhood.

1926 College Entrance Examination Board develops multiple-choice format for its standardized tests.

1928 Louis Terman argues that schools place too much emphasis on academic achievement because many students, especially those from lower ranking ethnic groups, do not have enough native intelligence to learn.

1928 Harold Rugg and Ann Shumaker publish *The Child-Centered School*. The book reflects the progressive educational emphasis on the "whole child," creative self-expression, and the active school.

1928 Efficiency educator David Snedden argues that since girls of less than median intelligence will rear more than two-thirds of the children of the future, they should take numerous courses in home economics.

1929 Alfred North Whitehead calls for the end to social efficiency forms of education in *The Aims of Education*. Subjects, he maintains, such be studied in great depth and students should learn how to use knowledge.

1920–1940 Tremendous conflict among teachers concerning approaches to teaching and purposes of education. Some teachers employ Deweyan progressive methods while others employ more Thorndikian behaviorist methods.

1930s The Depression moves many educators to call for the use of schools to bring about radical social change. Such appeals elicit charges of communism from many conservatives for the next few decades.

1930s Federal government plays greater role in education by taking steps to help alleviate youth unemployment.

1930s and 1940s The National Association for the Advancement of Colored People (NAACP) pursues creative and brilliant legal strategy of challenging the racially discriminatory policies of graduate and professional schools.

1932 George Counts delivers "Dare Progressive Education Be Progressive" speech to Progressive Educational Association. Speech is published as book entitled *Dare the Schools Build a New Social Order*. Because teachers primary allegiance is to children, not to special interest groups, they should provide enlightened political leadership, Counts reasoned.

1935 American Youth Commission (AYC) report maintains that 25 percent of American young people have syphilis or gonorrhea.

1937 College Entrance Examination Board drops written portion of its exam because of the high costs of grading it.

1938 John Dewey publishes his last major book on pedagogy, *Experience and Education*. Attempts to address popular misconceptions about progressive education in the United States.

1939 Harold Benjamin makes fun of prevailing modes of skill and drill pedagogies in *The Saber-Tooth Curriculum*. Compares traditional teaching prac-

tices to a prehistoric approach to dealing with saber-tooth tigers long after they were extinct.

1940s Work of B. F. Skinner in behavioral psychology becomes increasingly popular. Major problem of schools according to Skinner is that teachers do not use his principles of behavioral psychology in class.

1941 At the beginning of World War II tremendous antipathy exists between teachers, administrators, business leaders, and political leaders.

1942 Congress on Racial Equality (CORE) organized at the University of Chicago.

1942 Wilford Aiken publishes the *Eight Year Study*. Presents evidence that Progressive Educational approaches in secondary schools produce results that at least equal but usually exceed those of schools employing traditional drill and recite forms of pedagogy. The report receives little attention in a time of war.

1945–1957 Attempts to pass federal legislation to provide monies to schools continuously fail.

1945–1960 Belief among many that professional educators have weakened U.S. schools and made them inferior to schools of the U.S.S.R.

1945 Charles Prosser introduces notion of life-adjustment education for the middle 60 percent of American youth. Vocational education, he argues, will train the bottom 20 percent and the high school would educate the top 20 percent.

1947 James Conant testifies before Congress on the ways schools should channel human resources. How do you channel "superior human resources" into needed occupations while maintaining democratic egalitarianism? he asked. He answered his own question by arguing for greater sorting mechanisms in guidance and counseling. Superior students would be required to meet higher academic requirements.

1949 Ralph Tyler publishes *Basic Principles of Curriculum and Instruction*, which contains what became known as the Tyler Rationale. The rationale views curriculum in terms of purposes, learning experiences, organization, and evaluation.

1949 August Hollingshead publishes *Elmstown's Youth* documenting severe class bias in schools.

1950s Right-wing groups charge that schooling is shaped by communists while many academics claim schools are anti-intellectual. Schools are receiving criticism from a variety of sources.

1950s B. F. Skinner and other academic critics condemn the quality of public education.

1950s Myles Horton's Highlander School in Tennessee helps educate numerous civil rights leaders in relation to ideologies and strategies of resistence to oppression.

1950–1953 NAACP lawyer Thurgood Marshall brings several public school desegregation cases before the U.S. Supreme Court, setting up *Brown* case.

1952 Arthur Bestor delivers paper to American Historical Association entitled "Anti-intellectualism in the Schools: A Challenge to Scholars." Calls for higher academic standards in U.S. schools.

1954 *Brown vs. Board of Education* rules school segregation is unconstitutional.

1955 Supreme Court issues its Enforcement Decree for school desegregation. The lack of mechanisms for enforcing

school desegregation dramatically slows the process.

1955–1970 Era of the Civil Rights Movement.

1956 Bestor establishes Council for Basic Education and becomes its first president. Criticizes the lack of academic quality in public schools.

1956–1958 Vice Admiral Hyman Rickover delivers a series of speeches criticizing public education and blaming the schools for the failure of the United States to compete successfully in the technology and military race with the U.S.S.R.

1957 Martin Luther King organizes the Southern Christian Leadership Conference (SCLC) that becomes the key organization leading the civil rights movement.

1957 The Soviet launch of Sputnik convinced many Americans that the nation was losing the technology and military race to the Soviets. Believing this, many joined the call for higher educational standards.

1957 President Dwight Eisenhower calls for a system of nationwide testing of high school students to identify students with sufficient ability to pursue scientific or professional studies.

1958 In response to Sputnik, Congress passes National Defense Education Act. Provides money for guidance, counseling, testing, and the identification of talented students, as well as the improvement of the teaching of science, math, and foreign language.

1960s–Present Mass-produced textbooks in the various school subjects have served as a standardizing and standards-setting device. Studies indicate that almost 90 percent of classroom instruction has been shaped by textbooks. Since they are produced for mass-market adoption in the United States, textbooks are designed to appeal to an ideological common denominator and the largest buyers, California and Texas. In this context mass-produced textbooks have determined not only what but even how students learn. Thus, what teachers teach and children learn has been determined by the marketing directors of large textbook companies who are more concerned with profit margins than with rigorous scholarship.

1960s and 1970s The emerging women's movement attempts to raise educators' consciousness about gender biases that shape public schools.

1960s Awareness of issues of civil rights and poverty seeks to make education part of the campaign against injustice.

1960 Jerome Bruner publishes *The Process of Education.* Calls for students to learn science in the same ways that scientists conduct research.

1962 Thomas Kuhn publishes *The Structure of Scientific Revolutions.* Initiates discussion of paradigmatic change in knowledge production and education. Offers new insights on the workings of science.

1962 NEA changes from organization dominated by school administrators to a teachers' union.

1962 Supreme Court issues decision in *Engel vs. Vitale* prohibiting mandated public prayer in schools. Opponents of the decision argue that the Court has "removed God from the schools."

1964 President Lyndon Johnson outlines plans for War on Poverty.

1964 Economic Opportunity Act is passed creating Project Head Start and the Job Corps.

1964 Civil Rights Act is passed. Extends

federal regulations in education and provides authority for enforcing Brown decision. Title VI required mandatory withholding of federal funds to any organization that did not end discriminatory practices.

1964 John Goodlad publishes *School Curricular Reform in the United States.* The book critiques the emerging reform movements of the early 1960s. Goodlad contends that the reforms' subject-centered approach does not question the worthiness of academic content. Neither does it explore the character of content worth learning and how students should learn it. These same questions are often ignored in the standards reforms of the contemporary era.

1964–1972 Conservative educational patterns emerge in reaction to student activism of period.

1965–1970 Numerous authors provide first-hand accounts of how progressive, activist teachers helped improve the lives of marginalized students by engaging them in a study of social justice and an exploration of what knowledge is of most worth. Authors include: A. S. Neill, James Herndon, Sylvia Ashton-Warner, Jonathan Kozol, John Holt, and Herbert Kohl.

1965 Elementary and Secondary Education Act is passed.

1966 Coleman Report on the social impact of education submitted to Congress. Differences between schools, it found, account for only a small part of differences in achievement. Offers pessimistic view of the ability of schools to address poverty and its impact on student achievement.

1968 Richard Nixon is elected president on a platform grounded on his opposition to the goals of the Civil Rights Movement and the War on Poverty.

1968 Historian Michael Katz publishes *The Irony of Early School Reform: Educational Innovation in Mid-Nineteenth Century Massachusetts.* Katz asks educators to transcend the myths that shaped the story of public education in the United States as a tale of benevolent philanthropy and democratic success. Instead Katz views the main impulse of American education as a quest for social control, the imposition of the values of dominant groups on the marginalized.

1968–1970s The emergence of the radical revisionists in American educational history paints a new picture of the American educational past. Historians such as Joel Spring, Clarence Karier, Paul Violas, Edgar Gumbert, and Michael Katz document the ways dominant power has worked to use schools to maintain existing power relations around issues of race, class, and gender.

1968–1974 Nixon administration retreats from egalitarian educational reform, using the Coleman Report to argue that little could be done to equalize educational opportunity.

1968–Present Conservative reaction to civil rights movement and War on Poverty.

1969 Appearance of Arthur Jensen's article in the *Harvard Educational Review*, "How Much Can We Boost I.Q. and Scholastic Achievement?" Jensen argues that compensatory education programs such as Head Start cannot improve intelligence because intelligence is primarily hereditary. Holds profound racial implications, as Jensen maintains that those with the least intelligent are the non-white. Right-wing reformers use this work to help defeat educational reforms designed to help African Americans, Latinos, and poor people from all racial backgrounds.

1970s Back to basics movement relies heavily on behaviorist pedagogies driven by specific behavioral objectives and standardized methods of instruction, and standardized tests. Edward Thorndike's vision of schooling and its purpose become dominant once again.

1970s New programs of statewide testing legislated to check for minimum competency of students graduating from high school. In the present language of standards these tests 'set standards' for the various state school systems.

1970s Rise of competency-based education. Involves teaching students particular competencies and measuring the results of learning before moving on to new competencies. Similar to other expressions of behavorism, competency-based education employs a machine-like model of teaching and learning while exerting direct control over students.

1970s Alternative schools developed in the 1960s as part of left-wing reaction to the educational establishment are used by conservatives to avoid racial desegregation. Era witnesses the establishment of thousands of right-wing, white-flight private schools.

1970s Accountability movement, Marland's career education, Skinnerian behaviorism, and competency-based education create a reactionary educational atmosphere that works to counter proponents of democratic education. The main goal of right-wing education of the era involves using education to manage human resources for the labor market.

1970s Teacher power movement emerges. Teachers demand more control of the curriculum and educational policy.

1970 Paulo Freire publishes the English language version of *Pedagogy of the Oppressed.* As he writes of the needs of oppressed peoples and pedagogies that respond to them, he initiates a North American discussion of oppression. Freire's book lays the foundation for the emergence of a "critical pedagogy."

1971 Michael F.D. Young publishes *Knowledge and Control: New Directions for the Sociology of Education.* Raises questions about how school knowledge helps promote the political interests of elite classes.

1971 *Swann vs. Charlotte-Mecklenburg Board of Education.* Mandates forced integration by busing for the purpose of desegregation. Sparks violent demonstrations by white opponents of racially integrated schools.

1971 Nixon's Comissioner of Education Sidney Marland advocates career education as an answer to student rebellion, delinquencey, and unemployment. Education, he argues, does not lead to career opportunities and this reality fuels youth dissatisfaction.

1971 Study reports that information on women constitutes less than 1 percent of textbook material in American schools.

1970–1975 Beginning of new accountability movement. States and local communities begin to require schools to publish yearly standardized test scores. Influences the conservative reforms of the late twentieth and early twenty-first centuries.

1970–1975 Alternative schools begin to be incorporated into desegregation plans. The term "magnet" begins to be used to describe the function of these schools—white students, for example, would be drawn to a predominately black school by a specific curriculum or

pedagogical method that would be attractive to them. Thus schools would be racially integrated without busing or other drastic measures.

1972 Christopher Jencks publishes *Inequality*, documenting the class bias in American education.

1972 Title IX of the Higher Education Act requires sexual equity in educational programs at all levels.

1973 Passage of the Rehabilitation Act, which requires the withholding of federal funds from schools that discriminate against handicapped students.

1975 Passage of Public Law 94-142, the Education for All Handicapped Children Act. Mandates that each handicapped child receive an appropriate program of education.

1975 William Pinar publishes *Curriculum Theorizing: The Reconceptualists*. Bringing together the intellectual traditions of critical theory, psychoanalysis, literary and art criticism, existentialism, phenomenology, and feminist theory, Pinar helps initiate a major reappraisal of pedagogical practices and educational purpose. Many of these insights are rejected by school leaders as too intellectual for teachers and students.

1975 Educational standards emerge as a national issue when the College Board points out that SAT scores had consistently fallen since 1963.

1975–1980 NEA begins to play major role in national politics.

1975–Present The emergence of postmodern and feminist scholarship challenges definitions of scholarship and rigor in knowledge production in general and schooling in particular.

1976 NEA gives its political support to the election of Jimmy Carter. Carter promises to establish the Department of Education with a secretary of education who would represent educational interests at cabinet meetings.

1977–1978 The Moral Majority emerges as a political force critical of public education's contribution to the declining moral values of the nation. The organization calls for traditional pedagogies and a return of prayer in schools.

1978 Diane Ravitch publishes *The Revisionists Revised: Studies in the Historiography of American Education*, which attempts to refute the work of the radical revisionist educational historians—Michael Katz in particular.

1980s New wave of criticism of education connects imbalance in international trade to low educational standards. A new call for high educational standards emerges that would help improve American technology and win the international trade competition with West Germany and Japan.

1980s State governors join in the condemnation of schools for economic problems. Governors claim that improvements in educational quality would improve state economies.

1980s During Reagan Era, magnet schools become the major strategy for school desegregation. The emergence of a diverse and differentiated curriculum coming out of the use of magnet schools for desegregation marks a major detour from Horace Mann's vision of the common school and the same education for all children and the comprehensive high school as envisioned by the Cardinal Principles of Education report in 1918.

1980s Leaders of the conservative restoration movement refuse to enforce the gender equity provisions of Title IX of the Higher Education Act of 1972.

1981 Southern Regional Education Board (SREB) releases *A Need for Quality*. Calls for higher standards for teachers and students.

1981–1989 During Reagan presidency the Republican Party attempts to counter the political influence of teacher organizations' support for Democrats by appealing to groups who were opposed to teacher unions and were very critical of public education: private school groups, supporters of vouchers and tuition tax credits, fundamentalist religious groups who argued schools were not teaching traditional religious values, and opponents of the federal Department of Education. This move shapes educational politics well into the twenty-first century. The conservative coalition leads the call for the top-down standards discussed in this encyclopedia.

1981–1989 Major tactic of Reagan administration involves increasing the role of states in education while decreasing federal role. In the process the roles of local boards of education decline.

1983 Reagan administration issues *A Nation at Risk*, which blames public education for the nation's problems in keeping up economically with Japan and West Germany. Low quality of academic education, the report maintains, causes lower rates of productivity. The report uses the same arguments that had been used in 1917 to support the passage of the Smith-Hughes Act for vocational education.

1983 Task Force on Education for Economic Growth creates new coalitions between governors and leaders of big business around issues of educational policy. Business gains even more influence on educational policy, especially at the state level. The report calls for greater cooperation between corporations and the schools. Adopt-a-schools programs begin to emerge at the local level. In these programs local businesses devise educational goals in response to their need for cheap labor. Adopt-a-school programs are simply another means for business to accomplish their traditional goal of using American schools to provide them with a well-trained, appropriately socialized, and inexpensive labor force.

1986 Publication of historian of education Herbert Kliebard's *The Struggle for the American Curriculum, 1893–1958*. Kliebard interprets the history of the American school curriculum during this era as a struggle among four educational perspectives: humanists, developmentalists, proponets of social efficiency, and social meliorists. Many argue that the debate over educational standards in the contemporary era still reflects Kliebard's four factions.

1986 Governors Richard Riley of South Carolina, Lamar Alexander of Tennessee, and Bill Clinton of Arkansas issue a report by the National Governors' Association entitled "A Time for Results." Identifies standards of what students should know and be able to do and develops assessments to determine whether students are achieving the standards.

1987 E. D. Hirsch publishes *Cultural Literacy*. Delineates a core content curriculum that profoundly influences top-down technical standards makers. Emphasizes knowledge about and produced by European white men.

Late 1980s–Present The educational standards movement that begins to take shape in this period represents a neo-liberal business-driven perspective

on politics, economics, and education joining in a coalition with the Moral Right's concern with religious and moral issues and the traditional canonical and educational orientations of New Right intellectuals.

Late 1980s–Present This conservative coalition is grounded in the following basic beliefs: economic problems are caused by the breakdown of traditional values and family values and their impact on education; the public sector is the center of all evil and the private sector is the source of the good things in life. Thus, public education is fundamentally misguided.

1989 Association for Supervision and Curriculum report asserts that current instructional practices in schools are not working. Instruction needs to be profoundly overhauled, authors argue. Drill and recitation pedagogies that focus on memorization of isolated facts in a meaningless context need to be abandoned for teaching for understanding that helps students think critically and problem solve.

1989 President George Bush invites nation's governors to an Education Summit at Charlottesville, Virginia, to set national education goals.

1989 National Council of Teachers of Mathematics (NCTM) publishes its influential math standards. Standards emphasize active learning, problem solving, reasoning about mathematics, and communicating mathematically for all students. The standards are intended to replace rote memorization and drill with rigorous thinking. Teachers are provided with numerous examples of classroom activities, not with a litany of requirements.

1990s–Present Many scholars argue that before focusing so much attention on the development of content standards, efforts should be taken to equalize input standards that schools would have to attain before the process could begin.

1990 In January after the governors met six educational goals are agreed upon. A National Education Goals Panel is created to monitor the states' progress toward reaching the goals. The most important issue for the Goals Panel quickly becomes how to measure and achieve the set goals. Creating groups of national experts to help them in this process, the panel listened to calls for national standards and a system of assessments.

1990 Black citizens in Selma, Alabama, protest the tracking policies of the local school district. Only 3 percent of African American students are placed in the upper two tracks of the system. When the African American school superintendent Norward Roussell attempts to raise the percentage of black students in the upper two tracks to 10 percent, he is fired by the Selma school board. The Selma situation is not unlike other districts around the nation.

1991 Legislation creates National Council on Education Standards and Testing (NCEST) to explore the worth of establishing voluntary national standards and a mechanism for assessments.

1991 Jonathan Kozol publishes *Savage Inequalities* outlining the severe blight and financial neglect that characterizes most urban schools.

1992 NCEST reports to Congress in January. Calls for voluntary national standards and a national system of evaluation tied to them. Focuses on need for comparable outomes in the attainment of these national educational standards. Council advocates funding

of standard-setting projects in several curricular areas and funds states that want to develop standards-based curricular frameworks.

1992 American Association of University Women (AAUW) releases report, "How Schools Shortchange Girls" documenting gender bias in U.S. schools.

1992 Diane Ravitch, the head of the Department of Education's Office of Educational Research and Improvement, criticizes the AAUW report. Ravitch claims that gender bias is not a problem in American schools.

1992 Graduate Record Examination Board (GRE) annouces that it would offer a computerized exam overcoming the problem of being able to give the test only in a small number of large-scale administrations.

1993 Clinton administration introduces Goals 2000: Educate America Act. Sets into legislation national education goals and establishes a national educational goals panel. The act is grounded on two features: (1) voluntary national standards and (2) state development of specific educational reform plans that include the development of state standards and assessments in core academic subjects.

1993 Office of Educational Research and Improvement publishes *National Excellence: A Case for Developing America's Talent.* Promotes notion that schools are shortchanging talented students. Reflects neoconservative leanings in Clinton administration as it hails the needs of the privileged while continuing to ignore the needs of the marginalized.

1993 *Hostile Hallways: The AAUW Survey on Sexual Harrassment in America's Schools* is published.

1993 Ford Foundation poll of teachers indicates that large majority of them believe that standards reforms will reward school districts that best get their students to test well not necessarily learn more.

Early 1990s Critics such as Michael Apple argue that the outcome of much of the work involving standards will operate to differentiate students more rigidly against intractible and arbitrary norms that are not open to scrutiny. Thus, social antagonisms will worsen as students are indoctrinated with the knowledge and values of a dominant group disguised as the "common culture."

1994 Legislation creates the National Education Standards and Improvement Council to certify national and state educational standards.

1994 The UCLA Center for History in the Schools publishes its voluntary standards for the study of history in elementary, middle, and secondary schools.

1994 Lynne Cheney, wife of future Vice President Dick Cheney, leads an attack on the UCLA history standards charging them with anti-Western and anti-U.S. bias. She maintains that the standards fail to include great Americans, events, and accomplishments that were previously included in American curricula.

1994 The debate over the history standards exerts an impact on other curricular areas, as evidenced by the Department of Education dropping its plans to fund a standards project in the field of English and language arts.

1994 Richard Herrnstein and Charles Murray publish *The Bell Curve: Intelligence and Class Structure in American Life*, claiming to have proved that African Americans, Latinos, Native

Americans, and poor white people do not have the intelligence to succeed in schools. As a result the authors call for the end of compensatory education and other forms of educational remediation.

1995–Present National and state standards documents proliferate.

1995 Lynne Cheney's arguments against UCLA history standards prevail when the U.S. Senate rejects the standards in a 99 to 1 vote.

1995 To counter the UCLA history standards the Family Research Council (FRC) publishes its version of the historical data American students should know. These standards deemphasize the nation's racial, ethnic, gender, and class diversity.

1995 The American Federation of Teachers (AFT) calls for a common national curriculum for all secondary students, maintaining that U.S. students perform worse than European students because American students lack clear goals.

1997 Nel Noddings argues that even after several years of incessant discussion of standards, there is still much confusion about what standards mean. Some see standards as a flag to rally around, others understand the concept as a goal to reach, while still others view standards as descriptions of various proficiency levels.

1998 Numerous schools cancel recess in order to devote more time to learning content standards.

1998 Number of children on Ritalin increases from 900,000 in 1990 to 5,000,000 in 1998. Reflects the social concern with children performing well on standards-driven curriculum.

1998 Former New York Governor Mario Cuomo asserts that the standards movement in education has become an inexpensive way for political leaders to act as if they are interested in promoting good education.

1998 Children's Defense Fund reports that since 1989 families from the poorest 20th percentile have lost over $500 of average yearly income while the richest 5 percent have gained almost $30,000 per year.

1998 Thomas B. Fordham Foundation issues report asserting that opponents of standards hold an "anti-knowledge" bias inherited from John Dewey's notion of progressive education. The content standards developed by most states in the 1990s, the report continues, are inadequate.

1998 Lynne Cheney in her position as a senior fellow at the American Enterprise Institute contends that students who earn A's and B's in classes shaped by the National Council for Teachers of Mathematics (NCTM) often have to take remedial math classes when they get to college. Students in these math classes, she says, don't learn computation that comes only from skill and drill exercises.

1999 Susan Ohanian publishes *One Size Fits Few: The Folly of Educational Standards.* Argues that top-down standards undermine the ability of teachers to provide high-quality teaching for the different types of students that they will encounter in their classes.

1999 The high school graduation rate in 1899—3 percent; in 1999—91 percent.

1999 U.S. Department of Education reports shortages of teachers are most prevalent in high-poverty areas.

1999 U.S. Department of Education reports that over 20 percent of new public school teachers leave the profession in their first three years.

2000 George W. Bush is elected president on an educational platform calling

for increased standardized testing and educational standardization.

2000–2001 Neo-progressive educators argue that top-down content standards do not induce educators to analyze where learning experiences fit in a field of endeavor or a larger curriculum. Curricular knowledge is often conceptually isolated from the big picture of what knowledge is of most worth.

June 11, 2001 The U.S. Supreme Court takes a step toward lowering the First Amendment wall separating church and state that is likely to grant adult-led religious ministries greater access to public schools. The high court rules 6 to 3 in *Good News Club v. Milford Central School*, that the Milford, New York, public school district had to permit the Good News Club to conduct adult-led religious activities for grade-school children. The court's ruling overturns the 2nd U.S. Circuit Court of Appeals, which ruled that the Milford School District's policy of barring school grounds from the use of "any individual or organization for religious purposes," did not subvert the free expression rights of the Good News Club and protected the school district from violating the separation of church and state.

SELECTED PRINT AND NONPRINT RESOURCES

The works listed here include authored books, journals, government publications, labor reports, websites, and organizations regarding the standards debate in the United States.

1. ALASKA Content Standards Home Page
http://www.educ.state.ak.us/ContentStandards/home.html

2. Social Studies
Curriculum Standards for Social Studies: Expectations of Excellence, by the National Council for the Social Studies. Published by National Council for the Social Studies, 1994.
http://www.ncss.org/standards/toc.html

3. Science
National Science Education Standards, by the National Research Council. Published by National Academy of Sciences, 1996.
http://books.nap.edu/html/nses/html/

4. Language Arts
Standards for the English Language Arts, by the International Reading Association and the National Council of Teachers of English. Published by the International Reading Association and the National Council of Teachers of English, 1996.
http://www.ncte.org/standards/

5. Math
Curriculum and Evaluation Standards for School Mathematics by the National Council of Teachers of Mathematics. Published by the National Council of Teachers of Mathematics, Inc., 1989.
http://standards-e.nctm.org/protoFINAL/support/resources.html

6. The Arts
National Standards for Arts Education: Dance, Music, Theatre, Visual Arts by the Consortium of National Arts Education Associations. Published by Music Educators National Conference, 1994.
http://artsedge.kennedy-center.org/professional_resources/standards/natstandards/index.html

7. Technology
The National Educational Technology Standards (NETS) initiated by the International Society for Technology in Education (ISTE) Accreditation and Professional Standards Committee.
http://cnets.iste.org/

8. Pre-School
National Association for the Education of

Young Children (NAEYC). Developmentally Appropriate Practice in Early Childhood Programs. Copyright © 1997 by the National Association for the Education of Young Children. All rights reserved.

http://www.naeyc.org/

9. Developing Education Standards: Overview

http://putwest.boces.org/Standards.html

An annotated list of Internet sites with K–12 educational standards and curriculum frameworks documents—links to numerous professional organizations: NSCC, NCTM, NSTA, ASCD, NBEA . . .

10. Educational Standards and Curriculum Frameworks for Technology

http://putwest.boces.org/StSu/Technology.html

An annotated list of Internet sites with K–12 educational standards and curriculum frameworks documents, maintained by Charles Hill and the Putnam Valley Schools in New York.

11. National Educational Technology Standards for Students

http://cnets.iste.org

Published by the International Society for Technology in Education (ISTE), NETS Project, June 1998.

12. Nebraska Standards

http://www.edneb.org/IPS/Issu/AcadStand.html

13. Nebraska Educator Competencies in Technology

http://www.nde.state.ne.us/TECHCEN/nebr/ntct.html

Recommendation by the Nebraska Educator Competencies in Technology Task Force, June 1998

14. Nebraska State Technology Standards

http://nde4.nde.state.ne.us/TECHCEN/comp/comp.htm#1

15. Skills and Competencies Needed to Succeed in Today's Workplace

http://www.ncrel.org/sdrs/areas/issues/methods/assment/as7scans.htm

16. National Science Education Standards

Sites Offering Academic and Skill Standards

The growth of the Internet has provided the chance to index the sources of information about standards and place that information at anyone's electronic fingertips. This page has been established as a repository for much information about educational standards and curriculum frameworks from the U.S. Department of Education.

http://www.ed.gov./G2K/standard.html

17. A Compendium of Standards and Benchmarks for K–12 Education

This is based on McRel work sponsored by the Office of Educational Research and Improvement, Department of Education.

http://www.mcrel.org/standards-benchmarks/

18. The Show-Me Standards—Science

http://services.dese.state.mo.us/standards/science.html

19. The Show-Me Standards—Mathematics

http://services.dese.state.mo.us/standards/math.html

20. Missouri Assessment Program (MAP)

State-level assessments have been developed for students in grades 4, 8, and 10.

http://services.dese.state.mo.us/divinstr/assess/index.html

21. Missouri Assessment Program: Science

Missouri has developed a performance-based assessment program (detailed for elementary, middle, and high school), as

called for by the Outstanding Schools Act of 1993. The law provides that "The statewide assessment system . . . shall be performance-based to identify what students know, as well as what they are able to do, and shall enable teachers to evaluate actual academic performance."

http://services.dese.state.mo.us/divinstr/assess/science/

22. The Missouri Report

Achieving National Education Goals, from the Office of the Governor. This report updates our progress toward achieving the national education goals and highlights some of the many initiatives underway to improve education in Missouri.

http://www.state.mo.us/gov/moreport/

23. The Special State Instructional Programs (SSIP)

SSIP administers several state-funded grant programs that assist districts to improve schools, expand local curriculum, and improve classroom teaching practices and hosts an annual statewide educational technology conference.

http://services.dese.state.mo.us/divinstr/SSIP/

24. Education Excellence Partnership

The Education Excellence Partnership, a unique coalition of public officials and business and teacher organizations, is working to strengthen the academic future of America's children by encouraging parents to get more involved in their children's education and learn about and support higher academic standards.

http://www.edex.org

25. Standards Work

StandardsWork helps communities and schools work together to advance meaningful, lasting, and effective standards-based education reform. Please visit the StandardsWork website for more information on the organization and on how to order their publication *Raising the Standard: Eight-Step Action Guide for Schools and Communities.*

http://www.goalline.org

26. Council for Basic Education

The Council for Basic Education (CBE), founded in 1956, is a highly recognized independent nonprofit, membership organization that promotes a curriculum strong in the basic subjects: English, history, geography, government, mathematics, sciences, foreign languages, and the arts, for all children in the nation's elementary and secondary schools.

CBE is the leading advocate for development of high academic standards in K–12 education through our analytical periodicals, programs designed to strengthen content in curriculum and excellence in teaching, and programs to raise education standards to improve student performance.

http://www.c-b-e.org

27. Developing Educational Standards

http://www.putwest.boces.org/Standards.html

28. The National Center for Research on Evaluation, Standards, and Student Testing (CRESST)

http://www.cresst96.cse.ucla.edu/cresst.htm

29. Resources on the World Wide Web Related to Alternative Assessment

http://www.ra.terc.edu/hub/regional_networks/cia/assessment/alt-assessment.html

30. Standardized Tests and Our Children: A Guide to Testing Reform

http://www.saphire.com/UNCAT/uncat10.htmle

31. National Science Education Standards

http://www.nap.edu/readingroom/books/nses/html/

32. National Council of Teachers of Mathematics
Curriculum and Evaluation Standards for School Mathematics.
http://www.enc.org/reform/journals/ENC2280/nf_280dtoc1.htm

33. National Council of Teachers of Mathematics Standards 2000
http://www.nctm.org/standards2000/

34. Developing Educational Standards
Includes Links to National Standards and State Standards
http://putwest.boces.org/standards.html

35. The Association for Supervision and Curriculum (ASCD) Home Page
http://www.ascd.org/

36. Developing Educational Standards
Putnam Valley Schools (Putnam Valley, New York). Includes New York State Standards and an annotated list of links to sites with K–12 educational standards and curriculum framework documents.
http://putwest.boces.org/standards.html

37. Goals 2000 Legislation and Related Items
U.S. Department of Education
http://www.ed.gov/G2K

38. Information on Curriculum Standards
February 22, 1999. New York State Education Department.
http://www.nysed.gov:80/home/facmtg/currinfo.html

39. National Education Standards. National Aeronautics and Space Administration. NASA Spacelink
http://spacelink.msfc.nasa.gov/Instructional.Materials/National.Education.Standards/

40. Pathways to School Improvement
North Central Regional Educational Laboratory. Resources and links to assist school improvement teams reviewing their school's goals, standards and curriculum in math, science, and technology.
http://www.ncrel.org/sdrs/pathwayg.htm

41. State Departments of Education/Curriculum Standards
http://www.mhschool.com/teach/music/m5.html

42. NYStandards
http://nystandards.edutech.org

43. New Learning Standards for New York State
http://www.tier.net/bctc/nysgoals.htm

44. New York State Education Department
http://www.nysed.gov

45. Information on Curriculum Standards
http://www.nysed.gov/home/facmtg/currinfo.html

46. Math Frameworks
http://www.educ.state.ak.us/tls/frameworks/mathsci/ms3cntn1.htm

47. Ali-Dinar, Ali B. "K–12 Africa Guide."
http://www.sas.upenn.edu/African_Studies/Home_Page/AFR_GIDE.html

48. American Studies Crossroads Project
American Studies Association. An international Internet and curriculum project to facilitate experimental curriculum using network and electronic resources.
http://www.georgetown.edu/crossroads

49. Globalearn
Provides worldwide virtual expeditions for students.
http://www.globalearn.org

50. Gorski, Paul. "The Multicultural Pavilion"
Provides resources on multiculturalism, including a large collection of primary materials in American history, folk tales, and secondary resources. Offers classroom activities.
http://curry.edschool. Virginia.EDU/go/multicultural

51. History/Social Studies Web Site for K–12 Educators
http://curry.edschool.Virginia.EDU/go/multicultural

52. Music Education Online
http://www. geocities.com/Athens/2405/index.html

53. Music Education Launch Site
http://www.talentz.com/MusicEd/index.mv

54. MusicNet
http://tqd. advanced.org/3306

55. English Online: Materials for Teaching English.
http://eleaston.com/english.html

56. CEC: The Council for Exceptional Children
A professional association dedicated to improving the educational outcomes of students who have disabilities and/or who are gifted.
http://www. cec. sped.org

57. ERIC Clearinghouse on Disabilities & Gifted Education
Provides access to the professional literature and to other information and resources on disabilities and gifted education.
http://www.ericec.org

58. Deaf World Web
http://deafworldweb.org

59. Gifted and Talented (TAG) Resources Home Page
Comprehensive links to resources on the gifted and talented.
http://www.eskimo.com/~user/kids.html

60. LD Online
WETA Learning Project. An extensive resource on learning disabilities for teachers, parents, and children
http://www.ldonline.org

61. NCIP Home
National Center to Improve Practice in Special Education Through Technology, Media, and Materials. A resource for special education teachers and students with disabilities interested in the use of technology in education, including assistive devices.
http://www.edc.org/FSC/NCIP

62. Schwab Foundation for Learning
Raises awareness about learning differences and provides information and resources to parents and educators to aid children with special needs.
http://www.schwablearning.org

63. Transition
New York State Education Department, Vocational and Educational Services for Individuals with Disabilities and Special Education. Describes the process for schools, students, families, and community members to plan the living, education, and work of students with disabilities after high school.
http://web.nysed.gov/vesid/sped/trans/tranmain.htm

64. California Instructional Technology Clearinghouse
Visit CITC to find out the results of evaluations of instructional programs marketed to California schools that use a computer, a VCR or laserdisc player, a network or the Internet, or any combination of these.
http://www.clearinghouse.k12.ca.us

65. California Technology Assistance Project
CTAP, a statewide educational technology leadership initiative, provides assistance to schools and districts in integrating technology into teaching and learning. CTAP contains great links for administrators on school/district planning, instructional resources, and staff development that can be used nationwide.
http://www.ctap.k12.ca.us

66. Educational Testing Service Network
Dedicated to educational measurement and research, ETS develops and administers millions of achievement and admissions tests each year, continuously exploring new tools and resources for assessment. Their website provides information on various tests, resources to prepare for them, and research on standardized testing policies.
www.ets.org

67. High School Hub
The High School Hub is a noncommercial gateway to excellent free online academic resources for high school students. It features a reference desk, college information, and subject guides for English, mathematics, social studies, science, global languages, arts, and technology.
http://www.highschoolhub.org

68. Mid-continent Research for Education and Learning (McREL)
McREL helps local and state educators "put the pieces of educational reform together" and "scale up" systemic reform to encompass all students, schools, levels of administration, and programmatic areas by applying the best available knowledge from research, development, and experience.
http://www.mcrel.org

69. National Center on Education and the Economy
NCEE, a nonprofit organization, provides policies, tools, technical assistance, and professional development that people everywhere can use to design and implement effective standards-based education and training systems.
http://www.ncee.org

70. National Educational Technology Standards (NETS) Project
The NETS Project is dedicated to enabling stakeholders in pre-K–12 education to develop national standards for educational uses of technology. It will work to define standards for students, integrating curriculum & technology, technology support, and standards for student assessment and evaluation of technology use.
http://www.cnets.iste.org/

71. National School Boards Association
NSBA is a federation of state associations of school boards across the United States and the school boards of the District of Columbia, Guam, Hawaii, and the U.S. Virgin Islands. NSBA's programs and policies are carried out in coordination and in cooperation with its federation members.
http://www.nsba.org

72.Parents Raising Educational Standards in Schools
A Wisconsin education site focused on parent initiatives in schools with a particular focus on raising educational standards.
http://www.execpc.com/~presswis/topics.html

73. Pathways to School Improvement
Pathways can support school community teams as they move through the problem definition, decision making, implementation and action, and evaluation phases of the school improvement process leading to lasting educational reform grounded in the belief that all students can learn.

http://www.ncrel.org/sdrs/pathways.htm

74. Profiler
An online resource that promotes cooperation among teachers and students by allowing users to create their own or take others' general topics surveys. Users can track their progress, compare respective profiles, and find experts to help them learn new skills.

http://www.profiler.scrtec.org

75. Putnam Valley
Lists K–12 educational standards web resources.

http://www.putnamvalleyschools.org/Standards.html

76. Southern Regional Education Board: Educational Technology Cooperative
The SREB Educational Technology Cooperative comprises thirty-eight state higher education and K–12 coordinating and governing boards. The cooperative focuses on ways to help state leaders create and expand effective uses of technology in schools and colleges.

http://www.sreb.org/programs/EdTech/edtechindex.asp

77. START: Technology Applications Center for Educator Development
This Texas educator site is a great resource for teachers and administrators nationwide. Resources for standards, instruction, assessment, professional and program development, and others are easily viewable.

http://www.tcet.unt.edu/START/

78. Teacher/Pathfinder: Assessment
An excellent listing of educational assessment sites on the Internet.

http://www.teacherpathfinder.org/School/Assess/assessmt.html

79. Teachers' Internet Use Guide
This module walks teachers through the process of designing, implementing, and evaluating a lesson that addresses Texas state standards and uses telecommunications to support teaching and learning in the academic subject areas.

www.rmcdenver.com/useguide/

80. The Best Practices Guide to Teacher Tools on the Net
http://www.teachertools.net

81. The International Technology Education Association
The professional organization of technology teachers, ITEA promotes technological literacy for all by supporting the teaching of technology and promoting the professionalism of technology teachers. ITEA strengthens the profession through leadership, professional development, classroom activities, and other services.

http://www.iteawww.org

82. U.S. Department of Education
The U.S. Department of Education has a comprehensive and well-organized site to learn about educational resources and issues at the federal level.

http://www.ed.gov

83. www4teachers
www4teachers includes over a thousand new resources, indexed and organized to help you find exactly what you need. These resources address professional development, integrating technology—including state standards, tools for the classroom, and stories about talented teachers and students.

http://www.4teachers.org/index.shtml

ABOUT THE EDITORS AND CONTRIBUTORS

Joe L. Kincheloe is professor of education at the City University of New York Graduate Center and Brooklyn College, where he has served as the Belle Zeller Chair of Public Policy and Administration. He is the author of numerous books and articles about education and social justice, racism, class bias, and sexism, issues of cognition and cultural context, and educational reform. His books include *Teachers as Researchers*, *Toil and Trouble*, *Getting Beyond the Facts: Teaching Social Studies/Social Science Education in the Twenty-first Century*, *The Sign of the Burger: McDonald's and the Culture of Power*, and *Changing Multiculturalism* (with Shirley Steinberg).

Danny Weil is a public interest attorney who quit law to teach bilingual kindergarten, first grade, second grade, junior high school, high school, junior college, and university. He has been an in-service specialist for educators throughout the United States, Mexico, Puerto Rico, and El Salvador. He is the director of The Critical Thinking Institute and has written extensively on education in journals, magazines, and various publications over the past ten years. His books include *Towards a Critical Multicultural Literacy*, *Charter Schools: A Reference Handbook*, and *Vouchers and the Privatization of Education*. He is a series editor for ABC-CLIO's Contemporary Issues in Education. In addition he is a series editor for Peter Lang Publications.

Carolyn D. Abel, Ed.D., is assistant professor of elementary education in the Department of Reading at Stephen F. Austin State University. She teaches in the area of early literacy acquisition, serves as site professor for interns in the field, and delivers numerous ExCET preparation workshops.

Charles F. Abel, JD, MA, Ph.D., is assistant professor of political science at Stephen F. Austin State University. He teaches in the area of American government, public law, and public policy analysis. His latest book is *Political Trials: Criticisms and Justifications*. Currently, he is researching the concept of equal opportunity in education with his wife, Carolyn.

V. C. Alexander is an assistant professor and reading coordinator in the Department of Elementary Education at Stephen F. Austin State University. She earned her Ph.D. in curriculum and instruction with an emphasis in reading from Texas A&M University in 1997. She teaches courses in reading and language arts for preservice and in-service teachers. She has taught kindergarten and grades 1-5 as an elemen-

tary school teacher and is a certified recovery teacher.

Kathleen S. Berry is a professor at the University of New Brunswick, Canada, where she teaches Critical Studies, Drama, and Literacies. She has contributed several chapters for books edited by Shirley Steinberg and Joe Kincheloe. Her book *Drama and Cultural Studies: Acting Against the Grain* combines critical theories and drama-in-education practices.

Bill Bigelow teaches at Franklin High School in Portland, Oregon, and is an editor of *Rethinking Schools*. The Oregon Department of Education has threatened that teachers can be fired for writing about test questions—even those that appear on "pilot" tests.

Sue Books is an associate professor at SUNY New Paltz and editor of *Invisible Children in the Society and Its Schools* (Erlbaum, 1998). She has published articles on issues related to poverty and education, including school funding.

Alex Caputo-Pearl is a high school teacher in Los Angeles and one of the founding members of the Coalition for Educational Justice. As a representative of the Labor/Community Strategy Center since 1993, Alex has done labor and community organizing in campaigns around civil rights, environmental justice, and transportation equity. He has written articles in the *Los Angeles Times* and in journals such as *Labor Notes*, *Ahora Now*, and *Critical Planning*.

Roymieco A. Carter, M.F.A., is a visiting assistant professor at the School of Computer Science, Technology, and Information Systems at De Paul University. He is also a graphic designer and lectures on design, multimedia, web design, and social criticism.

Vicki K. Carter is presently at Penn State University. She completed her doctorate in workforce education and is an international expert on Dilbert.

Kay Fenimore-Smith is director of teacher dducation at Whitman College, where she supervises student teachers and teaches courses on cultural diversity, curriculum, language development, and preservice methods. As a former teacher and administrator of multicultural programs, she has extensive experience working with culturally diverse students and teachers. Her research interests focus on tacit and overt constructs of power within educational frameworks.

Martha Foote is a Ph.D. candidate in teaching and curriculum at the Warner Graduate School of Education and Human Development at the University of Rochester. Previously, she was a classroom teacher for ten years.

Ivor Goodson is a professor of education at the School of Education and Professional Development at the University of East Anglia, Norwich, UK, and the Margaret Warner Graduate School of Education and Human Development at the University of Rochester, New York, where he has also served as Frederica Warner Scholar and Lovejoy Scholar in Residence. His most recent books are: *Life History Research in Educational Settings: Learning from Lives* (2001) and *Professional Knowledge: Educational Studies and the Teacher* (forthcoming). His books have been translated in Spain, Norway, Sweden, Finland, Portugal, Germany, and Brazil, and are also forthcoming in Japan and China. He is the founding editor of the *Journal of Education Policy*, and the editor of book series for Falmer Press, Open University Press, and Teachers College Press.

Mordechai Gordon is an assistant professor of education at Quinnipiac Univer-

sity. He is the editor of *Hannah Arendt and Education: Renewing Our Common World* (Westview, 2001). Dr. Gordon has published numerous articles on educational foundations in journals such as *Educational Theory*, *The Journal of Thought*, and *Encounter: Education for Meaning and Social Justice*.

Patricia Hinchey is associate professor of education and director of the Jack P. Royer Center for Learning and Academic Technologies at Penn State. She has written extensively on translating critical theory to classroom practice. Her books include a best-selling introduction to critical theory, *Finding Freedom in the Classroom* (Peter Lang, 1998) and a critical examination of graduate education, *The Graduate Grind* (Falmer Press, 2000), coauthored with Isabel Kimmel.

Judi Hirsch has taught students and teachers for over thirty years, in New York, Israel, Australia, and California. She says that she gets paid to build relationships with her students and remind them of their brilliance when they forget.

Raymond A. Horn Jr., formerly a high school teacher for thirty years, is currently assistant professor of secondary education and educational leadership at Stephen F. Austin State University. His research interests include postformalism, systems theory, critical theory, teacher preparation, and educational leadership.

Sharon L. Howell finished her doctorate at Penn State University and has written extensively on education in the workplace.

David Hursh is co-founder of the Coalition for Common Sense in Education (an organization of educators and parents combating high-stakes testing) and currently Green Party candidate for the Rochester City School Board. He is associate professor and director of teacher education at the Warner Graduate School of Education, University of Rochester. His recent publications include *Democratic Social Education: Social Studies for Social Change*, co-edited with E. Wayne Ross (Falmer Press), "Social Studies within the Neo-Liberal State" (*Theory and Research in Social Education*), and "Resisting the Tyranny of Tests: The Battle for New York" (in press).

Michael J.B. Jackson is an independent researcher living in Vancouver, British Columbia, and is the author or coauthor of a variety of works on educational thought and practice and John Dewey's theory of education. He has held tenured academic appointments at Memorial University of Newfoundland and Bishop's University (Quebec).

Valerie J. Janesick is a professor, department chair, and doctoral program director of the Department of Educational Leadership and Org. Change at Roosevelt University.

William A. Jasper is an assistant professor of mathematics education at Sam Houston State University, teaching mathematics courses for elementary and secondary preservice teachers. He also taught eighth-grade mathematics and advanced algebra for seven years. His interests include improvements in teacher preparation, professional development for middle school teachers, recruitment of mathematics and science teachers, authentic assessment, and constructivist teaching methods.

Nancy P. Kraft is assistant professor in the School of Education, Department of Teaching and Leadership, at the University of Kansas.

Stan Lester is principal of Stan Lester Developments, an independent education consultancy in Taunton, UK, and a visiting academic to the School of Lifelong

Learning and Education at Middlesex University, London.

Rob Linné, an assistant professor of education at Adelphi University, specializes in language and literacy studies. His research centers on the construction of marginalized subjectivities through mainstream as well as subversive literate practices.

Sandra Lowery is a former teacher, principal, central office administrator, and superintendent. She is currently an associate professor at Stephen F. Austin State University, Nacogdoches, Texas.

Erik Malewski is diversity programs specialist at Penn State University. He teaches courses on social justice, critical multiculturalism, and diversity education. His interests include organizational change theory, critical perspectives on democratic teaching, and curricular studies on critical citizenship development. He is associate editor for *Taboo: The Journal of Culture and Education*.

Marjorie Mayers received her Ph.D. in Counseling/Educational Psychology from the University of Calgary, where she is currently teaching. Her interests include bringing a critical perspective to understanding disenfranchised youth in and beyond the school and the street, exploring hermeneutic philosophy and the politics of methodology, and interrogating the political topography of youth and youth culture. Her first book was recently published entitled *Street kids and streetscapes: Panhandling, politics, and prophecies* (Peter Lang, 2001).

Sandra Luna McCune is a professor and the graduate coordinator in the Department of Elementary Education at Stephen F. Austin State University. She is a coauthor of a professional development ExCET review book by Barron's.

Carol A. Mullen is on the faculty of the Leadership Development Department, University of South Florida, Tampa. She specializes in collaborative forms of partnership building among diverse groups of professionals. Dr. Mullen has published, as guest editor, eight special issues of academic journals; she has also published four books, two on the topic of school-university collaboration and mentoring development. *Breaking the Circle of One* (Peter Lang, Counterpoints Series, 2000, 2d edition) received the Exemplary Research in Teacher Education Award from AERA (Division K) in 1998.

Patricia G. Nason, Ph.D., is an assistant professor at Stephen F. Austin State University, where she teaches Elementary Science Methods and Classroom Management, and is a site professor and the coordinator for a professional development school.

Monty Neill is the founder of FairTest and a national spokesperson against standardized testing.

Bob Peterson is the editor of *ReThinking Schools* and a national spokesperson for equity and justice in American education.

Yusef J. Prögler teaches Interdisciplinary Social Science and Comparative Education at Zayed University in Dubai, where he is also a coordinator in the General Education program. He may be reached via email at: josef.progler@zu.ac.ae.

David Pushkin is a former high school chemistry and physics teacher and university professor. As a science educator, his interests primarily focus on the potential implications of the teaching/learning/curricular dynamic in university-level science on K-12 science education.

E. Wayne Ross is Distinguished University Scholar, Professor and Chair of the

Department of Teaching and Learning at the University of Louisville. Ross is the author or editor of eight books and monographs, including *The Social Studies Curriculum and Democratic Social Education*. Currently, he is editor of the journal *Theory and Research in Social Education*.

Trinidad San Miguel is currently an education specialist for the Education Service Center, Region XIII in Austin, Texas, and an assistant professor in the Department of Educational Administration and Psychological Services at Southwest Texas State University in San Marcos, Texas. Previously, he was coordinator of the Educator Preparation Improvement Initiative (EPII), director of the Texas School Improvement Initiative (TSII), an accreditation specialist, a public school principal, an assistant principal, and a teacher.

Fred M. Schied is professor of work education at Penn State University. A prolific writer, Schied is well known for his work on labor.

William H. Schubert, Ph.D., is professor of education at the University of Illinois at Chicago and is current president of the Society of Professors of Education and immediate past-vice president of the American Educational Research Association. His books include: *Curriculum* (1986), *Turning Points in Curriculum* (2000), *Teacher Lore* (1992/1999), and *Curriculum Books* (1980/and revision for 2002).

Aggie Seneway is a teacher at the Village Elementary School, Hilton, NY, and a doctoral student at the Warner School.

Douglas J. Simpson is professor of philosophy of education, Department of Leadership, Foundations, and Human Resource Education, University of Louisville. He is the author or co-author of numerous articles and books on teacher preparation, educational reform, and John Dewey's educational thought.

Lourdes Diaz Soto is full professor of education at the Pennsylvania State University and visiting professor at Teachers College, Columbia University. She has authored numerous articles and book chapters. Her books include: *Language, Culture, and Power: Bilingual Families and the Struggle for Quality Education* (SUNY Press), *The Politics of Early Childhood Education* (Peter Lang), and *Making a Difference in the Lives of Bilingual/Bicultural Children* (Peter Lang, forthcoming).

Sharon Spall is an assistant professor at Stephen F. Austin State University and teaches in the educational leadership program. She is a graduate of Texas A&M University in College Station.

Leah Stover is currently assistant principal at a junior high in Alabama. At the time of the writing of her essay, she was a social sciences teacher and co-chair of the SACS' steering committee at a middle school in the same state.

Barbara J. Thayer-Bacon is an associate professor in Cultural Studies in Education at the University of Tennessee. She has published two books, *Philosophy Applied to Education: Nurturing a Democratic Community in the Classroom* (1998), with Charles Bacon as contributing author, and *Transforming Critical Thinking* (2000), numerous chapters, and over fifty articles in various journals. Her primary areas of research as a philosopher of education are pragmatism, feminist theory and pedagogy, and cultural studies in education.

Thomas P. Thomas, Ph.D., is associate professor of education at Roosevelt University in Chicago. A former high school teacher, principal, and consultant for the Illinois State Board of Education, he is coauthor of *Curriculum Books: The First*

Hundred Years (2002) and editor of the Curriculum Studies Newsletter of the American Educational Research Association.

Leila E. Villaverde, Ph.D., is an assistant professor in curriculum studies at the School of Education at De Paul University. She also lectures on curriculum inquiry, art education, cultural studies, and creativity.

Kevin D. Vinson is assistant professor in the Department of Teaching and Teacher Education in the College of Education at the University of Arizona. His research interests including social studies education, critical educational theory, and educational philosophy. His scholarship has appeared in numerous books and journals.

Susan Field Waite is assistant professor of curriculum and instruction at Southwest Texas State University, where she teaches courses in integrated humanities, gifted education, and creativity. She teaches a field-based preservice teacher education course at a local elementary school. Her research interests include the development of teacher identity.

Ann Watts Pailliotet is associate professor of education in the Whitman College Education Department, where she teaches critical reading of children's literature, media literacy, and preservice methods courses. She is the editor for the International Reading Association's "New Literacies" Department in Reading OnLine and coeditor of *Exploring Values through Literature*, *Multimedia and Literacy Events* (2001), *Reconceptualizing Literacy in the Media Age* (2000), and *Intermediality: A Teacher's Guide to Critical Literacy* (1998).

John A. Weaver is an associate professor at Georgia Southern University. He is the author of *Rethinking Academic Politics in (re)unified Germany and the United States* and of the forthcoming book *Under Suspicion: Canonical Limitations*, *Curriculum Theory*, *and Popular Culture*. He is also the editor of *Popular Culture and Critical Pedagogy* with Toby Daspit and *(Post)Modern Science (Education)* with Peter Appelbaum and Marla Morris.

Linda Wesson is a professor of education at the University of Memphis, College of Education, in the Department of Educational Leadership. Her area of expertise includes critical curriculum theory.

John Willinsky is the Pacific Press Professor of Literacy and Technology at the University of British Columbia, where he directs the Public Knowledge Project, which is dedicated to increasing the public value of academic research, as well as playing guitar with an international blues band of scholar-musicians.

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