

Making Change in a Changing World

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THE STATE OF EDUCATIONAL CHANGE

Innovations and Restructuring

Everybody is doing it. Ask an elementary grade teacher anywhere in the country, “What are the innovations in your school?” and the litany ensues: “differentiation, curriculum mapping, **cooperative learning**, interdisciplinary curriculum, inclusion, professional learning communities,” and so on. Secondary schools are joining many of the elementary grade movements and adding innovations of their own, from creative block scheduling to theme-based high schools and academies.

The national impetus to restructure schools and improve education has brought us into the best and worst of times. The best of times:

- Encouraging alternative approaches to school structures such as academies, and programs such as the International Baccalaureate diploma program
- Articulating clearly in **curriculum** documents what students should know and be able to do in an increasingly complex world
- Helping students develop greater self-efficacy and self-esteem as they take more responsibility for learning
- Encouraging teachers to design learning experiences for students instead of relying solely on textbooks as the controller of what and how to teach
- Critically examining education at all levels in light of changing paradigms for teaching and learning

But the current pressure to raise test scores at all costs yields troubling practices in too many schools, reflecting the worst of times:

- A narrowing of the curriculum to “test-item” teaching, or the sacrifice of science and social studies in the earlier grades to make more time for reading and mathematics skill drill. The photocopier gasps for air.

- “Frill” programs such as art, music, and physical education are cut to make more time for “real” academics. Oh—and let’s cut that real time waster in the elementary grade levels: recess.
- Less teacher-designed instruction and a heavy, increased reliance on text-book or scripted programs. New programs are purchased with abandon, each one purported to be the silver bullet to achieve success. The plethora of programs leads to teacher confusion as they try to sort everything out and plan a coherent program of instruction in the limited school day.
- Secondary schools cut back—or cut out—**career and technical education** because of their cost, or implement a laser-like emphasis on core academic **standards** and college preparation for all students.
- And finally, there is the issue of student and teacher drop-out:
 - Too often, students who feel they cannot make the grade drop out in middle school or high school rather than be tagged a no-diploma failure.
 - Teachers and administrators leave the profession because they feel that the narrow focus on test scores has changed the institution—the tried and true philosophy of nurturing the “whole child” in American education is being replaced by a narrow numbers perspective, and the art and joy of teaching is being drained away.

One can understand the panic felt by administrators and teachers to raise test scores under the pressure of the federal No Child Left Behind Act (NCLB), especially when test scores are published in newspapers school by school, and when pay is tied to score increases, but we must step back and assess the bigger picture. What are the goals of education today?

Richard Rothstein, research associate of the Economic Policy Institute, and Rebecca Jacobsen, a doctoral candidate at Teachers College, Columbia University, shared their thoughts on public attitudes toward historically supported educational goals for American schools in a *Phi Delta Kappan* article (2006). Rothstein and Jacobsen were involved in researching the historical perspectives from the Founding Fathers in the mid-1700s through to the current court battles in numerous states over the definition and financing of an “adequate education.”

Historically, education has called for a balanced curriculum that addresses the basic academics of core subjects, as well as the social, emotional, and physical areas of students’ growth and development. Different periods of history also called for appreciation and knowledge of the arts and literature, of civic and community responsibility, and of preparation for skilled work. Foundationally, the public school goals required that students learn how to think critically and problem solve.

Rothstein and Jacobsen surveyed representative samples of all American adults, school board members, state legislators, and school superintendents and asked them to rank the relative importance of the historically valued goals. All groups assigned value to each of the diverse goal areas. The average ranking of importance gave “Basic Academic Skills in Core Subjects” the top rank, followed closely by “Critical Thinking and Problem Solving,” “Social Skills and Work Ethic,” “Citizenship and Community Responsibility,” and, finally, “Preparation for Skilled Work.”

The authors ask us to consider whether the narrow test focus of the federal NCLB Act on reading, mathematics, and science is preventing schools from addressing the broader goals in American education. That is an interesting consideration. If broader goals are still supported, then it is apparent that test scores for a few subject areas should not be the only focus. Curriculum design and instruction need to take center stage in redesign efforts in schools and school districts to create balanced programs. We can raise academic standards without losing sight of the broader goals in education.

PRESSURE GROUPS

As schools struggle to define a quality education, they receive conflicting messages from a society carrying multiple agendas and worldviews, which makes the job of educational change very complex. Five pressure groups are especially pronounced: (1) business and the world of work, (2) state governments, (3) social forces, (4) media, and (5) parents. It is important to understand their views and concerns if we are to effectively educate for the diverse needs of society.

Business and the World of Work

The globalization of economics and trade, stimulated by advances in technology and transportation, has changed the traditional business models forever. Employers decry the quality of education in the United States and lament, “If only workers had the skills we need, our companies could be more economically competitive in the global marketplace.”

The Global Economy

The famed economist Lester Thurow (1993), in his provocative and thoughtful book, *Head to Head: The Coming Economic Battle Among Japan, Europe, and America*, cites the following questions as central to the global economic competition:

Who can make the best products? Who expands their standard of living most rapidly? Who has the best-educated and best-skilled work force in the world? Who is the world’s leader in investment—plant and equipment, research and development (R&D), infrastructure? Who organizes best? Whose institutions—government, education, business—are world leaders in efficiency? (p. 23)

These questions continue to frame global economic competition today. China, India, Mexico, and other countries that can provide less-costly labor draw the production lines of major corporations to their shores—creating complex arterials for product development and dissemination.

In his newer book, *Building Wealth: New Rules for Individuals, Companies and Countries in a Knowledge-Based Economy*, Thurow (1999) acknowledges that as we enter the 21st century the United States is experiencing economic anxieties. The middle class in the United States is shrinking. Although some people are making economic gains, many more are losing ground and experiencing a lowered standard of living. For two-thirds of the workforce, real wages are below where they were in 1973. Since the publication of Thurow's book, workers in the United States are feeling the blunt realities of global competition—from major industries outsourcing jobs to other countries, to cutbacks in employee pension and health-care plans, to massive layoffs and the need for retraining into new fields of work. Heads are spinning.

Thurow (1999) states that the developing industries at the heart of this global competition are all “brainpower industries”:

Microelectronics, computers, telecommunications, new man-made materials, robotics, and biotechnology are spawning new industries and reinventing old industries. . . . The science behind these new industries is revolutionizing our lives. Internet retailing supplants conventional retailing. Cellular telephones are everywhere. Genetically engineered plants and animals appear. . . . It is an era of man-made brain-power industries. For all of human history, the source of wealth has been the control of natural resources—land, gold, oil. Suddenly the answer is “knowledge.” The world's wealthiest man, Bill Gates, owns nothing tangible—no land, no gold or oil, no factories, no industrial processes, no armies. . . . The world's wealthiest man owns only knowledge. (pp. xiv–xv)

Will the traditional U.S. curriculum provide the kind of knowledge and skills that our workforce needs to secure a strong future for all? Regular education is aligning curriculum and instruction to state academic standards to raise achievement levels. Tests, rewards, and sanctions are supposed to motivate excellence, but states vary greatly in the degree to which their standards require conceptual understanding of content knowledge and higher levels of thinking. Some standards are so factually oriented that thinking will never get off the basement floor: “Identify the first governor of _____.” Some are so broad and conceptual that it is anyone's guess as to the essential, transferable understandings: “Examine systems.” And some are just right—clear and powerful conceptual understandings with enough specificity to bring relevance to the district-defined curricula: “Understand that energy is a property of substances and systems and comes in many forms.” Standards need to keep moving toward “just right” in the coming refinements if we are going to develop the kinds of thinking abilities and depth of content knowledge that are required for citizenship as well as for work roles.

The rapid changes occurring in the workplace are also affecting the curriculum of surviving career education programs by emphasizing the infusion of rigorous academic content, problem solving, teamwork, and the use of technology in conjunction with real-world simulations and experiences. The critical need for a

quality workforce has been a major impetus for the development of high-level work skills aligned with academic standards in the traditionally differentiated, academic, and career education classrooms. Model programs to blend career and technical education with academic programming are growing around the country through programs such as career pathways and applied academics. These trends need to be supported.

Salable Skills in the Global Market

The National Center on Education and the Economy (NCEE) (2007, pp. xvi–xvii) outlines the challenge in creating a competitive workforce for the United States. Students in the United States are in the middle to the bottom of the list when compared with students in other industrial nations. The global economy has rocked our work world—with many well-paying jobs being automated or outsourced to other countries at an alarming rate. The NCEE report reminds us that

the best employers the world over will be looking for the most competent, most creative, and most innovative people on the face of the earth and will be willing to pay them top dollar for their services. Strong skills in English, mathematics, technology, and science, as well as literature, history, and the arts will be essential for many; beyond this, candidates will have to be comfortable with ideas and abstractions, good at both analysis and synthesis, creative and innovative, self-disciplined and well organized, able to learn very quickly and work well as a member of a team and have the flexibility to adapt quickly to frequent changes in the labor market as the shifts in the economy become ever faster and more dramatic. (2007, pp. xviii–xix)

Advances in technology have created a time warp in which old methods and ways of thinking leave industries in the dust, and in which expanded communication and interdependence demand big-picture thinking. In business and in our communities, we must now deal with the issues and complexities of global systems: economic, social, and political.

William Greider (1997), in *One World, Ready or Not: The Manic Logic of Global Capitalism*, states, “The national interest must now find expression in the far more complex context of the collective global interest” (p. 470). For example,

the history of nation-states . . . has been a series of armed contests for territory and domination, but the traditional geopolitical assumptions are now quite confused as global commerce dilutes the meaning of national borders and constructs complex webs of interdependence. . . . It becomes increasingly difficult to select a proper enemy—someone who is not also a major customer or co-producer. (pp. 470–71)

To further complicate this picture of global economics, the 21st century has opened with violent eruptions of conflict in the Middle East, as well as with

nuclear threats that create a boiling cauldron of tensions fed by issues of power and control, and by deeply held values and beliefs. Global interaction has spawned global conflict—and economics becomes a nervous bystander waiting for the political dust to settle.

State Governments

State governments, the second pressure group, have set up commissions and panels to evaluate and plan for a restructured system of education. Goals are defined and standards set. But have state governments required academic standards that would develop the conceptual and critical thinking abilities alluded to by Lester Thurow and the National Council on Economic Education? Have state governments required standards that would develop citizens who are ready to address in a flexible manner the rapidly changing problems and issues of this complex, interdependent world? A review of state standards will show that some states have a conceptual framework for nesting the specific content of the local districts, whereas other states have mandated standards that resemble the district curricular frameworks of old—right down to the last war, date, and general. If only they realized the impact in classrooms: each year, teachers race to cover more material faster, and the goal of intellectual pursuit is forced to compete with trivial pursuit.

State governments in the United States have largely supported the idea of school competition—the panacea offered by business for the problems of education—so they offer vouchers to parents to “buy” the education of choice. A menu of schooling types has sprung up, from religious private schools, to business-run for-profit schools, to public schools.

The 15th Bracey Report on the Condition of Public Education (Bracey, 2005) summarizes the ongoing debate over the success of private charter schools. The 2004 NAEP (National Assessment of Educational Progress) test data (NAEP, 2005) did not raise the victory banner for charter schools. According to Gerald Bracey, even though Chester Finn—then head of the National Assessment Governing Board (the 26-member board that sets policy for the NAEP)—had suggested using the NAEP to analyze charter school performance, “he [and other prominent advocates] rejected the NAEP results when they did not show higher achievement when compared to regular public schools.” Their argument was that the data was not disaggregated by ethnicity and other socio-economic factors, even though Mr. Finn had vetoed an earlier intent to disaggregate the scores fearing it would “mask poor performance” (Bracey, 2005, p. 144).

In fact, the *Bracey Report* stated that the U.S. Department of Education did not publish the charter school NAEP data along with the regular NAEP results. After an analysis of the NAEP data by the American Federation of Teachers (AFT) and subsequent publication of the charter school results, the U.S. Department of Education presented its own review in December 2004. The results aligned with the AFT analysis: “Of the 22 reading and math comparisons, 20 favored regular public schools, one was a tie, and one favored charters by a single point” (Bracey, 2005, p. 144).

It is really not a puzzle as to why private charter schools generally score similarly or more poorly than public schools when we consider these questions:

- Where are private charter schools finding their teachers?
- Who is designing their curricula? How are they different from the curricula that are currently being taught in public schools? Is it just “more technology” and perhaps “foreign language earlier,” or is it truly an insightfully designed masterpiece that meets the needs of developing learners of varying abilities?
- Do the for-profits accept all students, or do they find ways to be selective, thus skewing the results? For many years, there have been accusations of selectivity among private schools.
- Who trains the teachers in for-profit schools, and what is the content of their inservice training? Have they and our regular public school teachers been trained at different preservice institutions?
- Just what are the silver bullets that purport to make for-profit schools succeed over public schools?

I suspect there is little variance between private and public schools after these comparisons have been taken into account.

As a result of the private charter school movement, many public school districts—such as those in Boston, Massachusetts, and Toledo, Ohio—have started their own innovative charter schools rather than pay money and lose students to the for-profit schools.

One thing is certain—to prepare students for today and tomorrow, curriculum and instruction must change from traditional models based on coverage and rote memorization. They must change because these old models do not develop the conceptual, creative, and critical thinking abilities that are now essential for complex problem solving.

So whether schools are public, private, or for profit, they need a deeper understanding of how to redesign curriculum and instruction. Otherwise, the national frustration over schooling will continue.

Social Forces

Besides the pressure from business and government, social forces affect schools: increasing immigration that brings many cultures and languages into the classroom, ongoing poverty, broken homes, and violence lurking in the shadows. Since the early 1990s, the United States has experienced alarming gun violence in schools from Denver, Colorado, to North Pole, Alaska. The United Nations International Children’s Emergency Fund (UNICEF) issued a report in 1999 supporting the Convention on the Rights of the Child, stating that the United States still has one of the highest rates of hunger among children. The United States suffers one of the highest infant mortality rates among industrial countries, with an infant mortality rate of 5 per 1,000 births, which is the same rate as in Poland,

Hungary, Slovakia, and Malta (“U.S. Infant Survival Rates,” 2006). Furthermore, nearly three-quarters of all murders of children in the industrial world occur in the United States (UNICEF, 1999).

Another UNICEF report, *Child Poverty in Rich Countries* (UNICEF, 2005), finds that child poverty has risen in 17 of 24 OECD (Organisation for Economic Co-operation and Development) member states since 1990, with Mexico (27.7 percent) and the United States (21.9 percent) having the highest rates, followed by Italy (16.6 percent), Ireland (15.7 percent), Portugal (15.6 percent), and Britain (15.4 percent). The poverty rates decline further in the other member states. It is important to note that the concept of poverty is relative when applied globally; nevertheless, poverty in any nation limits opportunity. For all of our talk of equal opportunity and the American Dream, we are failing a large segment of our young people, and the consequences sting the conscience.

Another factor in the growing poverty rate is the large increase in U.S. immigration. With more than a million legal and illegal immigrants coming across our borders each year (Center for Immigration Studies, 2001), we are feeling the effects on schools and social systems. Illegal immigration has risen more than 185 percent since 1992, and current estimates of illegal immigrants in the United States stand between 11 and 12 million according to government census data reported by the *New York Times* (“Plentiful, Productive—and Illegal,” 2006).

Increasing migration of peoples worldwide is a reality and schools have been thrust to center stage as they wrap their arms around the children of the world. At times, a teacher may have six or more languages and cultures in the classroom, yet our teachers have had very little training on how to effectively instruct such cultural diversity. Clearly, the schools need to have a focused agenda for meeting the needs of a growing multicultural population. The diversity of the United States is its greatness. No other country in the world has as rich a diversity in customs, perspectives, values, and beliefs, but the United States’ inability to assimilate immigrants effectively, while still valuing cultural identities, can threaten the very foundation of our democracy.

Schools must teach the values and principles of democracy and a free society. Separating into ethnic enclaves, without the common bond of shared beliefs outlined in the U.S. Constitution and the Federalist Papers, puts us at risk for the internal ethnic and religious conflict so common in other parts of the world. The reality of global interdependence and interaction requires that schools also prepare students with the knowledge and understanding of diverse cultures and beliefs. Expanded knowledge and perspectives may prevent damaging sociopolitical moves in future delicate international relations, and may help build bridges of understanding to foster cooperation rather than conflict.

Media

Media are the fourth pressure group. They seem to highlight the negative, whether crime, violence, corruption, or falling standardized test scores. What if publishers insisted that a positive story in education had to be written for every

negative story? There are many wonderful things happening in education today, but the push to privatize education and shift funding has had a definite impact on public opinion. The general view is that public education is not teaching enough—yet we teach far more than we ever have in the past. Or the general view is that we are not teaching well enough—yet my experience in working with thousands of teachers and administrators over the past four decades is that the most of them truly care about and strive to educate the students in their classrooms. They work hard to meet all of the instructional demands placed on them by local, state, and national mandates, but they feel whipped this way and that by a parade of so-called critical initiatives that are often ill-conceived, unrealistic in terms of time and resources, or underfunded.

It is true that education needs improvement; it is also true, though, that we have a systems problem. The old system of education is not functional for delivering the highly cognitive, conceptual, and technical skills that are needed for the 21st century. The reality of information overload requires moving to a higher level of abstraction to organize the information base. We need greater attention to the conceptual structure of knowledge, and how to teach the factual knowledge in relation to the organizing **concepts** and principles.

The old system cannot be changed without focused retraining of teachers and administrators, and more effective curricular and instructional models. This retraining needs to include the teacher training institutions that are too often churning out the “same old, same old.” Education needs to direct more funding and time to staff development. Tight budgets cut the discretionary funding for curriculum and staff development—the very items that are the heart of educational improvements for students. Our priorities need refinement. State standards are a step in the right direction, but they need to be revised to more clearly reflect the distinction and relationships between the conceptual and factual levels of knowledge for each of the disciplines. Teachers and administrators must be trained on the difference between the factual and conceptual levels of knowledge and how these levels work together to develop deep understanding and intellectual rigor. Improving pedagogy is the key to raising achievement levels, but the pressure to cover so many standards is wearing out the copy machines—and the teachers. Was this the intent?

Parents

The final pressure group is the parents. What a confusing time for them! Between the mixed messages coming from the media, business, the government, and the schools, parents often do not know what to think. No wonder so many parents are opting for private or home schooling. Never before has the need to include parents in the educational setting been more urgent.

Educational change will only occur in a cooperative, problem-solving partnership among business, the community, and parents. The current aura of blaming impedes progress by generating feelings of hopelessness. Only by addressing the needs at the building level, supporting teachers and administrators, dialoguing as

a community, and addressing the desired student outcomes with an analytical systems approach will we be able to align public schooling with societal and individual needs.

SHARING THE JOB OF QUALITY EDUCATION

Parents as Partners

Parents need to understand the changing world and how education is working to provide students with the skills for success in the 21st century. Progressive schools cooperatively plan the educational program with parents and see that they are involved in the educational process, whether at the school site or at home.

Traditionally, in education we have opened our doors only slightly to parents. We have engaged them as volunteers for various activities, but have had difficulty communicating our plans for teaching their children. Today, educators must find ways to include parents in defining the aims of education, and to show how the school learning plan is focused toward achieving those aims. Parents want and deserve to be active partners in their children's educational experiences.

Parents are feeling heightened anxiety for the safety as well as the education of their children. In a society that is increasingly violent and threatening, in which guns and drugs appear to be as plentiful as bubble gum and candy, parents naturally hold their children close. They want to see plans to ensure the safety and well-being of children in school. Safety must be an issue for the community as well as for the school.

Community and Business as Partners

Education is a community venture with schools, churches, health, welfare, and law enforcement agencies working together to provide for the needs of children. In some communities, there are excellent communication networks between the public agencies. Help to families is focused and timely. In other communities, there is a breakdown in relationships. Families wait months for assistance from overburdened case workers, or suffer from duplication of effort between agencies.

One particularly effective model in a small community in Montana calls together an interagency task force that includes representatives from the schools, health and human service agencies, law enforcement, and the clergy. This task force meets on a monthly basis to dialogue and to develop ways to more effectively serve their shared families. Task force members become acquainted as professionals, which opens lines of communication that ultimately serve individual families more efficiently.

Business, as another important segment of the community, also has an important role in education. Certainly, many of the requested changes in schooling are emanating from the needs of business. Businesses have changed their requirements

for educated workers: In the industrial age they needed workers who could follow orders and complete assigned tasks in specific time frames. In today's information age they need workers who can process and use knowledge in solving complex problems while working as members of a team.

Today, many businesses around the country provide positive support to schools through business partnerships. These businesses aid schools through activities such as allowing employees to speak to classes during the workday, or providing funding to support the development of curriculum and technology in schools. The business world wants technologically literate workers, but computers and more advanced technologies are still in scarce supply in too many schools. Helping ensure an equitable supply of technology across all schools would be one of the best ways for businesses to help boost relevant curriculum and instruction for the 21st century.

The Government as a Partner

*The Dilemma of Time and Funding
... in a Minute ... With a Nickel*

There are policy makers who have difficulty understanding why education is so slow to change. They believe that if educational standards and tests are developed for students and high stakes are set for students and schools, the change process will occur naturally. But educators know that these changes are a major transformation in outcomes, teaching paradigms, techniques, and materials. They require long-term cooperation and commitment to training and funding.

Two examples come to mind that demonstrate the complexity of curricular and instructional change. The first example deals with the process of curriculum development related to state standards and subsequent classroom implementation; the second revolves around the definition of depth of instruction.

Educators feel the pressure to meet state and local standards. The stakes are high. Some states, such as Florida, are giving letter grades to individual public schools based on their standardized test scores and factored criteria. Grades are published in the newspaper, and merit pay is on the horizon. With stakes this high, teachers deserve quality curricular documents. The reality in many states, though, is that the state standards to which local documents are aligned are very poor. In some states, the standards are so detailed and comprehensive that teachers could never cover the information demanded, let alone help students intellectually process the information. Standards between disciplines also vary in the way they are written and in their expectations.

Because the national science standards are so well conceived and written, the state and local science standards documents usually follow suit. They are concise and clear and can lead to deeper, conceptual understanding. The history standards in too many states, on the other hand, have fallen into the trap of trying to write specific curricula, usually as a set of traditional **objectives**: list, identify, and explain (that is, determine causes and effects).

Teachers need explanations as to how standards are written. They need to know expectations, and what the standards imply for instruction. We cannot assume that by handing these curricular documents to teachers, those teachers will understand them and use them effectively. The formats and expectations vary too much from one discipline to the next.

When state frameworks are poorly conceived, local curriculum committees need to know how to adapt them to address the deficiencies. This is not easy work. After quality curricular and assessment programs have been developed, teachers need intensive inservice training and time to develop new instructional pedagogy and skills for the classroom. It is imperative that school districts have quality leadership in curriculum and instruction at both the central and site levels. The heartbeat of schools is the curricular and instructional program for students.

The second example revolves around the definition of depth of instruction. Under the traditional fact-based paradigm, depth of instruction is too often thought of as teaching more facts about a topic. In a concept-based paradigm, depth of instruction means using the fact base as a tool to teach a deeper understanding of the key concepts and principles of a discipline. This shift in definition highlights the need for changes in instruction as teachers challenge their own thinking to facilitate student thinking. Content serves not as an end product, but as a tool to lead students to deeper thought.

If education is to attract the best and the brightest into teaching and administration, then education as a career must be elevated to a profession on a par with physicians, attorneys, and architects. This means that pay scales must be increased significantly. We get what we are willing to pay for. We could raise standards for the profession and be more selective in our hires if the pay were competitive with other professions. The job of the educator is similar to and no less important than the job of a physician: educators hold the economic and social health of the individual and nation in their hands.

In addition to elevating teachers and administrators to professional status, the issue of staff development on the job needs to be addressed. The increasing emphasis on critical and conceptual thinking in schooling requires a level of staff development that goes far beyond “make it and take it” workshops or five early-release-day presentations by experts. The level of staff development that is necessary to effect the needed changes in curriculum, instruction, and systems planning must be ongoing and weekly. If legislators are serious about wanting an improved educational system, they will concede the time needed for teachers and administrators to interact as professionals in learning new skills.

I have seen the greatest school improvements when teachers and administrators are given time to deal intellectually and in depth with the essential questions related to their profession in a changing world. The school year should be extended so teachers have one morning per week for professional dialogue, curriculum writing, and staff development. It is critical that educators be accountable for this time, however, by showing results to their community.

It is important to hold the staff and curriculum development time in the morning. The high level of staff development and curriculum work to be undertaken

requires alert minds. The higher the quality of thinking that is brought to planning, the better the program for students. Results should show for students by the second year if the development time is used effectively.

Some schools are following a model of early release days, but I have found this model to provide insufficient time to complete any meaningful dialogue or work. Early release days often provide only an hour or an hour and a half. Some teachers also feel compelled to attend to other business during that time, which erodes the school-based, professional focus.

If schools would bank time by extending the school day for a few minutes and shortening the passing time between classes, they could effect a three-hour late arrival day for students on alternating weeks. We will not see the kind of school transformation we are seeking without this amount of quality time. Teachers in Germany and Japan have longer school years but less contact time with students during the day. They use the time to dialogue, plan, and learn together.

Big business recognizes the need for quality training of its employees. Education is one of the largest businesses, and the job is human development. This job is far more complex than following a standard blueprint to build a standard product. The job of human development takes the individual child in whatever form and guides and nurtures the mind, body, and self-concept. If we raise the expectations for teachers and administrators, then we owe them the training they need to meet our raised expectations. We get what we pay for. If we expect major change in a minute, with a nickel, we will get what we pay for—minute change.

A NATIONAL MODEL FOR CONCEPT-BASED CURRICULA

After years of leading local curriculum committees in writing standards-based, concept-based curricula across the United States, I have come to the conclusion that we should develop a model for concept-based curricula at the national level, with teacher teams of our best disciplinary experts representing each grade level. This national model would state clearly what students must know factually, understand conceptually, and be able to do in each subject area. The leaders of the discipline-based writing teams would create a uniform concept-based design across the different disciplines. This means that they would need solid training in the what, why, and how of concept-based curriculum design. The writers would strive for clarity, coherence, and rigor through the grade levels and across subject areas. The current national and state standards are not curriculum documents—they are curricular frameworks. The next step is to provide solid models for classroom curricula.

For science and social studies, the national curriculum model could be in the form of concept-based **interdisciplinary** and **intradisciplinary** instructional units for each grade level and course that are rigorous (intellectually), coherent (internally, horizontally, and vertically), and clear. These grade-level instructional units would be developed using the current national standards as a base,

but would focus the content to reflect the most critical knowledge, concepts, and skills of the discipline. Secondary mathematics would also be designed as units of instruction.

Elementary mathematics and language arts would need a developmental skill sequence. The elementary mathematics would also need to develop the statements of conceptual understanding (generalizations) to accompany the necessary skills. Ideally, all other disciplines (fine arts, career and technical education, health and physical education, and so on) would follow suit in designing national concept-based curriculum models for a well-rounded education.

The smaller the school district, the tighter the funding for curriculum development. Because we have not been able to effect quality curricula in all of our local districts across the country, we need to develop one or more concept-based national models so that the local time and money can be better spent on staff development in concept-based pedagogy and disciplinary depth. This would raise standards and be a much wiser use of our limited funding. As it is now, each district is reinventing the same curricular wheel, often with flat results. Whether people know it or not, the national standards have driven a national curriculum that is being reinvented again and again in school districts across the nation. But the shortage of time, funding, and expertise leads to local results that are often lacking in rigor, intellectual depth, and design coherence.

School districts choosing to follow the national model could tweak the curriculum to meet local needs. For example, the national curriculum may include conceptual understanding of a state's economy in relation to its resources; the school district would want to require factual knowledge of its specific resources and economy to support the broader conceptual understanding in the national curriculum. If the idea of a national model for classroom curricula is unworkable because of the commitment to state-level standards, then perhaps each state needs to provide a quality concept-based model for classroom curricula.

In an ideal world, I would want all teachers to be able to guide student-driven inquiries that maintain intellectual rigor, disciplinary and interdisciplinary depth, and conceptual insight. Given today's realities of mandated standards and many teachers who lack disciplinary depth, however, I believe we need to take a more structured half step to our goal. For those school districts and institutions such as the International Baccalaureate diploma schools who are managing to "do it all" with rigor and gusto—bravo!

Certainly, the design of a national curriculum model is contrary to the idea of local control, but there are reasons why I believe it is the solution: writing quality curricula requires a deep knowledge of the disciplines and a commitment of time and funding. It is easier to develop one quality model than thousands of local district curriculums. Because states are invested in frameworks, the development of quality local curricula is a magnified problem when a district lacks expertise and funds to lead the writing. A school district that pays teachers for a full month over two or three summers to write a PreK–12 curriculum for each subject area, and that makes certain they have quality leadership for the writing process, can have excellent results—but how many districts have the funding, leadership, and commitment to make this kind of investment?

It has been my pleasure to work with Channelview Independent School District in Channelview, Texas—a district that has committed the time, funding, and leadership to complete the PreK–12 curricula. More than 100 dedicated and outstanding teachers worked for three years to write quality, concept-based, Web-based curricula for the core areas. Dr. Roxanne Wilson, the assistant superintendent, provided the on-site leadership, tenacity, and expertise to see the project through to the end. The district is working now to train the entire staff on the concept-based pedagogy. Members of the curriculum writing teams are training their colleagues, in many cases. More formal district trainings are also taking place. With continued follow-through, I am confident that Channelview will see student achievement rise significantly over the next few years. I also believe that the engagement of the conceptual level of thinking that is built in to the curricula will increase the motivation for learning and teaching.

In *Concept-Based Curriculum and Instruction for the Thinking Classroom* (Erickson, 2007), I discuss the idea of moving away from traditional verb-driven “content objectives” (we need to retain “skill objectives,” however) and instead provide three critical components in classroom curricula for teachers (p. 7):

1. Students will *UNDERSTAND*

- Transferable generalizations/enduring understandings

Examples:

- Systems are interdependent. (macro-level)
- Organisms adapt to changing environments. (micro-level)
- Rational numbers, including whole numbers, fractions and decimals can be expressed in equivalent forms of standard notation or scientific notation. (micro-level)

2. Students will *KNOW*

- Factual knowledge, memorized knowledge
- Critical factual knowledge for understanding the unit generalization(s)
- Critical factual knowledge for competency with the unit topics
- Nontransferable—locked in time, place or situation

Examples:

- Newton’s Laws
- Key vocabulary
- The causes of the American Revolution
- The names and contributions of historical figures
- The formulas for finding the area of quadratics

3. Students will be *able to DO* (processes/skills)

- The “set” of processes/skills that professionals use in their work (the mathematician, artist, etc.)
- Transfer across applications within a discipline and at times across disciplines (e.g., language arts or mathematics skills)
- Not tied to a specific topic (attaching a skill to a specific topic makes it an activity or a performance)

Examples:

- Create tables, graphs and charts to display scientific data
- Analyze primary and secondary source documents to evaluate historical information
- Analyze the use of connotative and denotative language in text
- Use context clues in reading to determine meaning

Currently, state academic standards fail to articulate clearly the differences between these three components (factual knowledge, conceptual understanding, and key processes and skills). If teachers had these three sets of expectations articulated clearly for their subject areas they would be able to fuse the skills with content as they design curricula to teach deeper factual and conceptual understanding.

The reason for clearly stating skill sets for teachers by discipline and grade level is to help them internalize the skills of the discipline. They then can apply these skills across a variety of learning experiences in the design process.

With solid instructional units modeled nationally (or at the state level), teachers could gain ownership by developing their classroom lesson plans to develop critical knowledge, understandings, and skills; or they could design their own units following the national or state-provided models. It is the business of the state to provide for the education of its students, but what the state is doing is not working well enough in too many school districts. A quality, concept-based model could be the catalyst we need to create a change in pedagogy. First, though, teachers and administrators must be trained on concept-based instruction, which differs fundamentally from traditional instructional pedagogy.

As soon as I write this proposal, however, I realize that a danger lurks. Suppose the federal government is so enamored with the national model that it makes it a mandate? If that were to occur, I would withdraw my proposal. We need models at this stage, not mandates.

In any case, schools are undergoing change to meet higher standards—and change can be difficult. In the next section, Peter Senge’s insights on organizational change can help guide our work.

MAKING CHANGE THE SYSTEMS WAY

Senge and Systems Thinking

Two recommended books for all policy makers, leaders, and organizations involved in change are *Dance of Change: The Challenge of Sustaining Momentum in Learning Organizations*, by Peter Senge (1999), and his newly revised and updated edition of *The Fifth Discipline: The Art and Practice of the Learning Organization* (Senge, 2006). Central to Senge’s thesis is the view that

learning organizations . . . where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where

people are continually learning how to learn together . . . develop in a culture which embraces systems thinking. (2006, p. 3)

Systems thinking, states Senge, is a framework for seeing interrelationships and patterns of change. Too often, events are perceived in isolation, and quick fixes for symptoms are applied. “Systems thinking is a ‘discipline’ for seeing the structures that underlie complex situations” (Senge, 2006, p. 69). Senge raises our awareness that complexity—caused by information overload, rapid global interdependence, and accelerating change—can overwhelm and undermine the confidence and responsibility of decision makers. “Systems thinking is needed more than ever” (p. 69).

Senge (2006) calls the critical components for a learning organization disciplines. The first four disciplines—Personal Mastery, Mental Models, Building Shared Vision, and Team Learning—are integrated through the fifth discipline, Systems Thinking. Senge gives the following definitions:

- *Systems Thinking*. A conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns [of interrelated actions] clearer, and to help us see how to change them effectively.
- *Personal Mastery*. The discipline of continually clarifying and deepening our personal vision, of focusing our energies, of developing patience, and of seeing reality objectively.
- *Mental Models*. Deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action.
- *Building Shared Vision*. The capacity to build and hold a shared picture of the future we seek to create. People with shared vision have . . . genuine commitment and enrollment rather than compliance.
- *Team Learning*. The ability to dialogue and suspend assumptions while entering into a genuine “thinking together.” Team learning also involves learning how to recognize the patterns of interaction in teams that undermine learning. (pp. 7–10)

A major difficulty in the restructuring of schools is a lack of the five disciplines in action. People work in their own comfort zones, and each person tinkers with a piece of the whole. A coordinated, systemic plan for change is too often absent. Policy makers insist on tests; assessment people comply. Principals encourage teachers to focus on raising test scores; teachers comply. A plethora of new buzzwords and innovations sweep into classrooms but are seldom evaluated for their contributions to increased student success. Teachers and principals request time to dialogue, plan, and design effective programs, but there is a breakdown in the system: this essential need remains but a whisper at the budget and policy tables. Educators fear that parents would never support the scheduling change. Parents need to be informed as to the complexity of the changes

being asked of us. We must gain their support for these reasonable requests for planning time.

School administrators who have been in the business for a number of years will remember the total quality management (TQM) drive to emulate the principles of Dr. W. Edwards Deming. Peter Senge dialogued with Dr. Deming and found that he had become disillusioned with the ability of organizations to actually implement real TQM. Senge (2006, p. xii) quotes Deming: “We will never transform the prevailing system of management without transforming our prevailing system of education.” Deming wrote the following to Senge:

Our prevailing system of management has destroyed our people. People are born with intrinsic motivation, self-respect, dignity, curiosity to learn, joy in learning. The forces of destruction begin with toddlers—a prize for the best Halloween costume, grades in school, gold stars—and on up through the university. On the job, people, teams, and divisions are ranked, reward for the top, punishment for the bottom. Management by objectives, quotas, incentive pay, business plans, put together separately, division by division, cause further loss, unknown and unknowable. (Senge, 2006, p. xii)

Senge and his colleagues spent many years after Dr. Deming’s 1993 death trying to define the characteristics that frame the intractable management system of today. These eight elements are worth sharing here. Could our difficulty in improving our educational system be driven by our allegiance to these old mental models of management?

- Management by measurement
 - Focusing on short-term metrics
 - Devaluing intangibles (“You can only measure 3 percent of what matters.”—W. E. Deming)
- Compliance-based cultures
 - Getting ahead by pleasing the boss
 - Management by fear
- Managing outcomes
 - Management sets targets
 - People are held accountable for meeting management targets (regardless of whether they are possible within existing systems and processes)
- “Right answers” versus “wrong answers”
 - Technical problem solving is emphasized
 - Diverging (systemic) problems are discounted
- Uniformity
 - Diversity is a problem to be solved
 - Conflict is suppressed in favor of superficial agreement
- Predictability and controllability
 - To manage is to control
 - The “holy trinity on management” is planning, organizing, controlling

- Excessive competitiveness and distrust
 - Competition between people is essential to achieve desired performance
 - Without competition among people there is no innovation (“We’ve been sold down the river by competition.”—W. E. Deming)
- Loss of the whole
 - Fragmentation
 - Local innovations do not spread (Senge, 2006, pp. xiv, xv)

Education is still bound by these system structures with the carrot and stick approach to standards attainment, competition between schools, and perceived lack of time to collaboratively solve problems. This is not to say that systems should disavow leaders and structures; nevertheless, we have to consider how people operate within the system structures and how they are designed.

The five disciplines as defined by Senge (2006, p. xii) center on the development of three core learning capabilities: fostering aspiration, developing reflective conversation, and understanding complexity. The focus in education on the development of professional learning communities (PLCs) provides hope that we can address Senge’s core learning capabilities.

Professional Learning Communities

On Common Ground: The Power of Professional Learning Communities (DuFour, Eaker, & DuFour, 2005) is a collection of chapters by noted, contemporary educational authors who support the tenets of PLCs. Richard DuFour et al. cite three driving questions to frame the work of a school’s PLC:

- What do we want each student to learn?
- How will we know when each student has learned it?
- How will we respond when a student experiences difficulty in learning? (p. 33)

PLCs respond to these questions as a collaborative team rather than as individuals. Principals in PLCs regard themselves as “leaders of leaders” rather than “leaders of followers” (DuFour et al., 2005, p. 23). Followers wait to be told; leaders engage intellectually. It is clear why the PLC premise has more promise in improving schooling.

There is another reason why I think the PLC model is important to the change process. After decades of work on concept-based curriculum and instruction, I have come to realize that unless the personal intellect is engaged in learning, student motivation for that learning is poor. When the conceptual mind (the personal intellect) is processing and problem solving, motivation is high. The reason for this is that humans are intellectual beings. When we are invited to use our minds, contributing and working collaboratively, we feel valued. When we are told what to do or what to say, we feel little personal fulfillment.

OVERCOMING OBSTACLES: OVER, UNDER, THROUGH, AND AROUND

Educators have an indomitable spirit. Despite a lack of coordinated problem solving and systems thinking in school districts, teachers and administrators strive to improve education for the students in their schools. A powerful point made by Senge (2006) is that learning organizations move forward on the collective vision and actions of people. They overcome obstacles and achieve their goals because they are all headed in the same direction, toward a shared vision. Individual schools appear to be more successful in creating a shared vision, but school districts find it more difficult to create that collective synergy so necessary for focused change.

Systems design considers all players when building a shared vision. When business works with government to require certain standards from schools, business becomes part of the system. Parents, too, are part of the system. So are the community agencies that support children and families. It is admittedly difficult to effect a coordinated and coherent vision because of diverse perspectives and a natural resistance to change, but let's start the discussion of change where it has the greatest benefit for children—with curriculum and instruction.

The next chapter presents an introduction to the idea of concept-based curriculum design. This book provides guidance for school districts who are designing their own concept-based curriculum. Concept-based curriculum provides a more efficient model for handling the massive amounts of information available today, focuses teaching and learning to more sophisticated levels, and provides hope for raising standards in education. Without addressing the inherent problems in the basic structure of traditional curriculum designs, educational change will fall short of the goal of raising standards.

SUMMARY

Teachers and administrators are caught in the crosshairs of conflicting messages and actions from pressure groups. Everyone wants higher academic standards for schools, but legislators create cattle-prod policies of punishment and reward, vouchers, choice, and competition. They want educational excellence but encourage state standards that at times are antithetical to excellence because they promote low-level coverage over intellectual and emotional engagement. The focus is on assessment before teachers have been trained to teach to higher standards. Media have a field day reporting test scores and school letter grades, and parents question, worry, and shuffle their children around, shopping for the best deal.

A committed partnership among schools, parents, business, and the community is essential to a quality plan for education. A systems approach to the education of each child brings the parts into a coherent whole—with the children the winners.

Curriculum and instruction are critical focal points for educational change. This job cannot be done effectively without providing quality time each week for professional dialogue, staff training, and curriculum development. Teachers deserve quality curriculum documents that will help them raise intellectual and academic standards. Perhaps it is time to admit that many local school districts lack the time, funding, and expertise to develop quality concept-based curricula for the classroom. It is time to consider the development of one or more national, concept-based curriculum models (grade level and course units of instruction) that local districts could tweak to fit their needs. The national models would be offered for voluntary use by school districts. For school districts using the national model, district funds could be spent on improving disciplinary knowledge and pedagogy among teachers, and on improving the leadership skills of administrators. Those school districts that do have the resources to design a concept-based model locally would be able to more easily gain ownership among teachers by developing their own curriculum, but for others the national model can be a viable option.

There is so much work to do in schools that collaborative team planning is a must. The idea of PLCs can provide the structure for getting the job done. Besides, it just makes sense to problem solve and plan collaboratively.

The purpose of educational change is to better meet the needs of our students today and to prepare them for the future. Change for the sake of change is wheel spinning. Change for the sake of children is our job, and we are ready and willing. All we need to start is quality systems planning.

EXTENDING THOUGHT

1. Why must education become a community partnership in the systems view?
2. What questions should parents ask of educators today?
3. How would you respond to those questions as an educator?
4. What impediments to quality education do you perceive today?
5. Describe your vision of an insightful and appropriate curricular and instructional program for students in the new millennium.
6. The dilemmas of little time and short funding are school realities. How can you creatively and practically “make time” and “find funding”?
7. What kind of training do teachers need to raise standards for all students?
8. What should be included in a well-rounded education for students today?

(Continued)

(Continued)

9. What issues would you raise in your PLC for each of these topics in your school?
 - Raising academic achievement
 - Academic success for *all* students
 - Our goals and aims for education
10. What do you think of the idea of developing a voluntary concept-based, national curriculum that would be tweaked at the local level? Discuss the pros and cons of such a curriculum.
11. What are the main impediments to change in your school or district? How would you address those impediments as a leader?
12. How would you characterize quality leadership?