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ABSTRACT

Economic and demographic changes in the United States signal a new mission for education--one in which the schools are responsible for ensuring that all students learn. This paper argues that this changed mission requires a new paradigm for school reform policy, one that shifts from designing controls intended to direct the system to developing capacity that enables schools to meet students' needs. Contradictions between the old and new paradigms are evidenced in different educational policy assumptions and goals. The first paradigm views students as passive, favors top-down governance, and uses research to design one best plan. The new paradigm recognizes that effective teaching techniques vary for different students and produces knowledge with and for teachers. Recommendations are made for reframing the school reform agenda with regard to the following three components of an infrastructure necessary to support lasting change: professional, policy, and political development. A conclusion is that the new paradigm for school reform must seek to develop communities of learning grounded in communities of democratic discourse in order to create an education for empowerment and freedom. (24 references) (LMI)

Reframing the School Reform Agenda: Developing Capacity for School Transformation

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Over the last decade the rhetoric of school improvement has changed from a language of school reform to a language of school restructuring. Change proposals have shifted from efforts intended to make our current educational system perform more efficiently to efforts intended to fundamentally rethink how schools are designed, how school systems operate, how teaching and learning are pursued, and what goals for schooling are sought. Just as the last century's massive transformation from an agrarian to an industrial society created urban school bureaucracies to replace earlier one room schoolhouses, so this century's movement into a high-technology information age demands a new form of education and new forms for school organizations.

The changes to which schools are expected to respond are social and political as well as economic. They are occasioned by increasing social diversity in the American citizenry, in our forms of family life, and in the intricacies of community life, along with increasing complexities of democratic decisionmaking in an age where dangers and possibilities are heightened by a knowledge explosion and the uses of technology. The economic changes are most widely noted in school restructuring talk. Whereas in 1900, about half the nation's jobs required low or unskilled labor; today, fewer than 10 percent do. And while fewer than 10 percent of jobs at the beginning of the century were professional or technical jobs requiring higher education, more than half of the new jobs created in this decade will require education beyond high school; 90 percent will require at least a high school education (Hudson Institute, 1987). The technological explosion has also hastened new methods of organization for business and industry which demand better educated, more thoughtful workers for virtually all kinds of jobs (Drucker, 1986).

In brief, there is a growing consensus that the United States cannot

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maintain its democratic foundations or its standard of living unless all students are much better educated. Students who have traditionally been allowed to fail must be helped to succeed; many more must become not just minimally schooled but highly proficient and inventive.

These changes signal a new mission for education: one that envisions schools as responsible for more than merely "offering education" or "delivering instructional services" -- phrases that connote a passive one-way relationship between educators and the students to whom they transmit information, whether it 'sticks' or not. Current restructuring initiatives actually envision schools as responsible for ensuring that all students learn. This suggests, in turn, a changed mission for teaching: one that extends beyond "covering the curriculum" to creating the kinds of connections with diverse learners that enable them to construct their own knowledge and develop their own talents in much more effective and powerful ways.

This paper argues that this changed mission for education requires a new paradigm for school reform, one in which policymakers shift their efforts from designing controls intended to direct the system to developing capacity that enables schools and teachers to be responsible for student learning and responsive to student and community needs, interests, and concerns. This kind of strategy will require different policy tools than those traditionally used throughout this century. It will also require different approaches to producing, sharing, and using knowledge.

The Contributions of Research to a New Understanding of Teaching and Learning

Research has contributed substantially to the current rethinking of educational goals, forms, and possibilities. Many of the changes now being urged are indebted to advances in our our knowledge about cognition and learning (see, for example, Curtis and Glaser, 1981; Resnick, 1987), new understandings of intelligence and performance (e.g., Gardner, 1983; Sternberg, 1985), and a deeper appreciation for the complexities of teaching (e.g. Berliner, 1986; Carter and Doyle, 1987). These understandings are accompanied by recognition of the need for educators to have a rich knowledge base about curriculum, pedagogy, learners, and educational goals tied to a reflective capacity for evaluating and improving

practice (Shulman, 1987).

Current understandings of human learning and cognition suggest that learning is not the accrual of pieces of information but a continual process of striving to make meaning out of new or unfamiliar events in light of familiar ideas or experiences. Far from being a tabula rasa waiting to accumulate bits of information, the learner actively seeks out experiences that will support the construction of complex cognitive maps to be used for organizing and interpreting information. As new ideas or experiences are encountered, the resulting interpretations or learnings are fashioned in ways that "make sense" of the new in terms of the old. Knowledge, then, is not so much imparted as *constructed* anew in the mind of each learner.

This means that part of the task of teaching is to provide students with the kinds of rich experiences that can help them to develop useful schemas, or conceptual frameworks, with which to process and interpret new information. Teachers must also find ways to link new learnings to students' prior knowledge and experience. This type of teaching requires an ability to evaluate learners' experiences, prior conceptions, and understandings as the basis for shaping instruction, and the ability then to fashion learning environments and tasks that can provide a foundation for students' conceptual development.

Because these understandings of learning take student ideas seriously, they demand a reciprocal view of teaching in which teachers adjust their approaches to accommodate and build upon the conceptions, interests, motivations, and learning modes of their students (Doyle, 1978). The teacher's attention is focused more on the processes of students' thinking and their understanding of concepts than the transmittal of information and the production of right answers. The teacher's activity is aimed at encouraging exploration, discovery, and valuable social interaction -- including discussion and testing of ideas among students -- rather than imparting bounded pieces of knowledge. Since these individual bits of knowledge cannot become meaningful to students until they have developed their own conceptual framework by which to interpret and connect them, the teacher must structure opportunities for students to build conceptual understandings.

This more complex approach to teaching demands greater knowledge and skill on the part of teachers. It requires that teachers be able to respond to students' cognitive, physical, social, and psychological development, incorporating these with knowledge of subject matter coupled with a wide range of pedagogical techniques and representations. Without such knowledge, "the teacher cannot properly understand the students' spontaneous procedures, and therefore fails to take advantage of reactions that appear to him quite insignificant and a mere waste of time" (Piaget, 1970, 69).

The implications of these understandings for teaching and schooling are profound. They suggest the kinds of major changes in curriculum, instruction, and the organization of learning opportunities that cannot be achieved by mandate. They require opportunities for organizational and individual teacher learning and development that are fundamentally different from those that now exist. In considering these changes, it may be useful to travel back to the beginning of our current reform movement to evaluate the policy impulses that are currently in tension with one another.

Competing Policy Paradigms

In 1983, the release of A Nation at Risk further stimulated a school reform movement that had already been underway at the state level for a number of years. Told that the schools were drowning in a "rising tide of mediocrity," state and local governments launched innumerable commissions, and state legislatures passed more than a thousand pieces of legislation aimed at upgrading educational standards and holding schools more accountable.

Most of this legislation sought to increase course requirements for graduation, increase testing requirements at all levels of schooling (and increase the number of ways the tests were used in decisionmaking about students and schools), mandate new curriculum guidelines, and require new planning and management processes for schools and districts.

These initiatives followed on the heels of similar reforms during the 1970s aimed at teacher-proofing the educational process. During this era, many states and districts had moved to centralized textbook adoption, had mandated curriculum guides for each grade level and subject area, had developed rules governing when

children must start school and how they will be tracked into programs and promoted from grade to grade, had begun to use of minimum competency tests and other standardized assessments to define teaching and determine student placements, and had put in place rationalized management schemes -- such as performance-based budgeting systems, management by objectives, and competency-based education.

By and large these efforts continued a paradigm for school reform begun at the turn of the twentieth century -- one grounded in a view of schools as bureaucratic institutions that could accomplish their task by division of labor and careful specification and sequencing of procedures. This view regards students as products of carefully (and externally) controlled educational processes. It views teachers as conduits for policies that control these processes -- as implementors but not as major actors. The paradigm has sought to change and improve schools by changing the regulations and rules under which they operate, revamping the specifications of goals and objectives they are told to attend to, and measuring their outcomes more precisely. Based on a faith in rationalistic organizational behavior, the power of procedures to direct human behavior, and the ability of researchers to discover the common procedures that will produce desired outcomes, the 20th century school reform paradigm has assumed that changing the design specifications for schoolwork will change the nature of education that is delivered in classrooms -- and will do so in the ways desired by policymakers.

However, this paradigm is beginning to give way to new conceptions of schooling, the goals of education, and the process of educational change. As the professed mission of schools for the 21st century changes not just in degree but in kind, so the strategies for creating such schools must also change in qualitative ways. If schools are to be responsible not only for "offering education" but also for ensuring learning, if teachers are to be responsible for connecting with all learners rather than merely covering the curriculum, the fundamental assumptions of the 20th century change paradigm must be questioned.

If schools are to be responsive to the different needs and talents of diverse learners, they must be organized to allow for variability rather than

assuming uniformity. And teachers must be prepared and supported in engaging students in whatever ways are necessary to encourage and empower their learning. These tasks suggest a radically different approach to educational reform. Rather than seeking to make the current system of schooling perform more efficiently, by setting "higher" standards and creating new sanctions and incentives meant to motivate greater performance, the new paradigm for school reform must focus on building the capacity of schools and teachers to undertake tasks they have never before been called upon to accomplish -- i.e. ensuring that all students learn, and furthermore that they learn to think critically, invent, produce, and problem-solve. In other words, to learn in ways that far exceed what teacher-proof curricula or administrator-proof management processes could ever accomplish.

This focus on capacity building is required for a reform that must rely on the transformative power of individuals in schools to rethink their practice and redesign their institutions. Such transformation can not occur by mandate. It requires investment in the human capital of the educational enterprise -- the knowledge, skills, and dispositions of teachers and administrators, and ultimately parents and community members as well. It also requires attention to equity in the distribution of those educational resources which produce school capacity, including well-qualified teachers supported by adequate materials and decent conditions for teaching and learning. The dramatic inequalities that currently exist among American schools cannot be addressed by pretending that mandating and measuring are the same thing as improving schools.

This paradigm shift began to occur during what has come to be called the second wave of reform in the 1980s, heralded by reports in 1986 from the Carnegie Forum on Education and the Economy, the National Governors Association, the Holmes Group of education deans, and the Education Commission of the States, among others. These reports emphasized the need to improve education by "professionalizing" the occupation of teaching. In contrast to the first wave solutions, the second wave reformers argue that lasting improvements will occur only if decisions about education are both decentralized and professionalized, reflecting teachers' individual and collective knowledge and judgments on behalf

of students, rather than being shaped solely by procedures that emanate from higher bureaucratic offices. They argued that policies should invest in the knowledge and skills of educators rather than in prescriptions for uniform practice.

The second wave reports argued that prescriptive regulations can stifle innovation and undermine local leadership, creating the situation that the Carnegie Forum (1986) described as one in which "everyone has the brakes but no one has the motors" to make schools run well. In response, many states and districts have begun to experiment with decentralized decisionmaking structures, such as site-based management and shared decisionmaking. If these innovations are to work, however, they require, in turn, a steady supply of highly educated and well-prepared teachers who can both help students build complex knowledge and skills and make sound pedagogical decisions, individually and collectively.

Indeed, all of the problems cited by educational critics of either wave are constrained in their solution by the availability of talented teachers, by the knowledge and capacities those teachers possess, and by the school conditions that define how that knowledge can be used. Raising graduation requirements in mathematics, science, and foreign language, for example, will be of little use if there are not an adequate number of qualified teachers prepared to teach those subjects well. Exhortations for improvement in students' higher order thinking abilities can accomplish little without able teachers who know how to engender such thinking and who teach in an environment that supports rather than undermines this kind of learning.

Recently revived concerns about "at-risk" children -- those who drop out, tune out, and fall behind -- cannot be addressed without teachers who are well prepared to understand and meet the diverse needs of students who come to school with varying developed abilities, learning styles, family situations, and beliefs about themselves and about what school means for them. If many children have special needs, then their teachers must have special knowledge and skills in order to address those needs.

The arguments sound persuasive. Yet it is important as we evaluate current initiatives to realize that American education has been down this path before.

The criticisms of current educational reformers -- that our schools provide most children with an education that is too rigid, too passive, and too rote-oriented to produce learners who can think critically, synthesize and transform, experiment and create -- are virtually identical to those of the progressives at the turn of the century, in the 1930s, and again in the 1960s. Much of what is being pursued now was pursued in each of these eras: interdisciplinary curriculum, team teaching, cooperative learning, projects, portfolios, and other 'alternative assessments,' a "thinking" curriculum aimed at "higher order" performances and cognitive skills. Indeed, with the addition of a few computers, the Carnegie report's scenario for a 21st century school is virtually identical to John Dewey's account in 1900 of the 20th century ideal (Dewey, 1900).

Underinvestment in teacher knowledge and school capacity has killed many a reform movement in the past, especially those that have aimed at more child-centered approaches and more universal high-quality education. Cremin (1965, p. 56) argues that these earlier attempts at reform could not take hold in any substantial way because "progressive education...demanded infinitely skilled teachers, and it failed because such teachers could not be recruited in sufficient numbers." Because of this failure, in each of its iterations progressivism gave way to standardizing influences, in the efficiency movement of the 1920s, the teacher-proof curriculum reforms of the 1950s, and the "back to the basics" movement of the 1970s and '80s. Disappointment with the outcomes of these attempts at rationalizing school procedures led in turn in each instance to renewed criticisms of schools and attempts to restructure them. Current efforts at school reform are also likely to fail unless they are built on a foundation of teaching knowledge and are sustained by a commitment to structural rather than merely symbolic change.

There are at least three components of an infrastructure that is needed to support this kind of change and to make it lasting. One of these is *professional development* of the sort that can develop a profession of educators armed with the capacity to acquire, use, and construct knowledge about and for learner-centered practice. A second is *policy development* aimed at capacity building rather than at establishing uniform controls which must ultimately prove inadequate to the

task of educating diverse and complicated learners. And a third is *political development*, used in the best sense of the term politics -- the process of building consensus among the polity about the nature of education we want for children in this country.

At this moment, we have two very different theories of school reform working in parallel and sometimes at cross-purposes across the country. One is focussing on tightening the controls: more courses, more tests, more directive curriculum, more standards enforced by more rewards and more sanctions. Some versions of the national testing proposals that have been recently put forward, including the one initially proferred by President Bush in his America 2000 proposal, follow this model. They propose improving education by developing more tests and tying federal funds to schools' test scores. Several states' versions of school reform legislation follow the same kind of formula for trying to achieve school improvement.

These approaches essentially assume that the basic problem is a lack of focus, direction, and effort on the part of school people rather than a lack of knowledge, capacity, or organizational support for developing alternative strategies. In organizational management terms, this is the Theory X of policy thinking: "If they only know what we expect them to do, and we have plenty of external carrots and sticks to make them pay attention to us," the policymaker's logic goes, "they (those recalcitrant educators) will be less lazy and unfocussed and will produce the results we want."

A second theory attends more to the qualifications and capacities of teachers, and to the development of schools as inquiring, collaborative organizations, than to changes in programs, curricula, and management systems. Policies built upon this theory include changes in teacher education, licensing and certification processes, the development of such institutions as professional development schools, efforts to decentralize school decisionmaking while at the same time creating capacity and infusing knowledge, changes in local assessment practices, and the development of networks among teachers and schools. While this new paradigm of educational improvement emerges, however, the old one remains in force, thus pulling the educational system in contradictory

directions.

Policy Collision and the Course of School Change

There are many examples of the contradictions. One is easily seen in the heavily regulated state of New York where, on the one hand, there is a new "Compact for Learning" that exhorts schools to set their own goals, to engage in school-based rethinking and redesign, to develop alternative assessments of student learning and performance, to use new practices like interdisciplinary team teaching and cooperative learning, and to develop more personalized learning environments. Yet at the same time, the curriculum is straitjacketed by a large number of Regents' testing requirements, which are not interdisciplinary or inquiry-based, and by directive syllabi that are often quite insistent on maintaining an information transmittal view of teaching and learning organized within traditional age-graded, departmentalized compartments. Practitioners are well aware that there is an unresolved tension between the policy framework that currently exists and the policy desires that are being voiced in the rhetoric of school-based reform.

At the same time, capacity-building mechanisms -- for example, staff development programs, supports for school innovation, and networks -- are funded much less well than all of these curriculum control activities. And recently, Teachers Centers, which had formed the bedrock of the state's professional development capacity, were eliminated in a round of state budget cuts. The same experience pertains in many other states: where ambitious and well-intentioned reforms are underway, those programs that provide the capacity for people to learn new practices are being cut back.

Ironically, the understandings about human learning that have informed the development of new curriculum approaches, have apparently not yet informed the policy implementation process. Teachers are expected to change their beliefs, knowledge, and actions based on a change process that consists primarily of the issuance of a statement and the adoption of new regulations. It is clear that this approach to policy implementation is not enough to fully achieve the intended goals.

The way in which teachers and other school people encounter and interpret

policy is also a function of the existing conditions and constraints within the school environment: local considerations of resources, student needs, community expectations for schools, competing priorities and ideologies, and previously passed policies, many of which stand as direct or indirect obstacles to the pursuit of the new policy intentions. As Penelope Peterson (1990) notes of teachers' encounters with newly arrived 'improvements,' "The pedagogical slate is never clean."

A massive geological dig would be required to unearth the tangled influences of the many policy layers that people in schools must now contend with, particularly given the extent of state legislative activity over the last decade. These influences make the serious implementation of new policies difficult, even impossible, without excavation and reform of what has gone before. One example is the set of recently developed curriculum frameworks in California that aim to promote a more constructivist approach to teaching and learning. The mathematics framework aims to promote the teaching of "mathematics for understanding," relying on the conceptual view of mathematics learning embodied in the new standards of the National Council of Teachers of Mathematics and other similar advances in the field.

A group of researchers who looked in California classrooms at the implementation of that policy discovered that it had collided with several existing policies that were not at all ready to give way. One of those was the state standardized testing system, which values a type of mathematical knowledge and performance very different from that suggested by the new Framework. As one of the teachers who was interviewed explained:

> Teaching for understanding is what we are supposed to be doing.... It's difficult to test, folks. That is the bottom line... They want me to teach in a way that they can't test. Except that I'm held accountable to the test. It's a Catch 22 (Wilson, 1990, p. 318).

Not only is the kind of teaching required for the goals of the framework different from that required for the goals of the current standardized tests, but the type of teaching which allows students to puzzle and delve deeply, to experience and explore alternatives, may require trade-offs, at least in the short term, between breadth and depth of content coverage. The same teacher notes:

> [Reading from the Framework] "Teaching for understanding...takes longer to learn." Hey, if I were spending the time to really get these kids to learn it, I might be several pages back (Wilson, 1990, p. 318).

This is the reality of classroom life in most schools where the press of teaching is covering the curriculum, getting through it, even if the students are being left behind as the curriculum marches ahead, page by page and day by day. This can be contrasted with the mathematics curriculum framework in Japan, which for a major portion of an entire year of the early middle grades curriculum, focuses on "deepening the understanding of integer." It assumes that the goal is to learn to think mathematically rather than to cover large numbers of problems and algorithms.

A second policy collision is occasioned by the earlier introduction in a number of California districts of certain "direct instruction" models for teaching and teacher evaluation. The Achievement for Basic Skills program is used in some schools, and Madeline Hunter's Instructional Theory into Practice model is used in others. Where they constituted heavy influences on teaching and evaluation, teachers felt they placed sharp constraints on their abilities to use student-centered, inquiry-oriented strategies of instruction. Both of these models assume a teacher-directed classroom, structured by brisk presentations of lessons followed by guided practice and evaluation of mastery. The implicit view of teaching and learning is quite different from one that envisions a classroom in which exploration guides students to their own discovery and testing of concepts, and right answers are not the only goal of instruction.

Although teachers could sense the curricular conflict that had been produced by this layering of policies, neither the state nor the districts seemed particularly cognizant of the dilemma or prepared to help them deal with it. And where instructional policies are enacted at the state level, local districts do not have the authority to resolve the discrepancies between conflictual state mandates. This can create a kind of Alice in Wonderland world in which people ultimately begin to nod blithely at the inevitability of incompatible events -- one in which educators cease to try to make sense of their environment for themselves as professionals, or to try to make that environment make sense for students. They have to explain to students the procedures and policies that

students must encounter only in terms of what "they" -- some faceless external and presumably nonrational agent -- "say we have to do."

When sense-making of the school environment for students ceases to occur, they become alienated in ways that teachers and policymakers deplore, but need to adopt radically different approaches to counteract. Young people are very good at sensing those things that do not 'make sense' and rejecting them, finding other ways by which they will organize their time, their thinking, and their lives. Solving the problem of contradictory policymaking is a prerequisite for solving the problems of student engagement and learning in schools.

Underlying Assumptions and Implications of the Competing Paradigms

The two very different streams of policy we now hold in parallel, often unrecognized cognitive dissonance stem from radically different notions of how students learn, how effective teaching is conducted, and how, as a result, education can be improved. In one view, students are tabula rasa -- raw materials to be "processed" by schools according to specifications defined by schedules, programs, courses, curricula, and exit tests. Teachers administer the procedures to the students assigned to them using the tools they are given: textbooks, curriculum guidelines, lists of objectives, course syllabi. Administrators translate policies made at the top of the system into rules and procedures to accomplish them. Correctly defining the procedures is the key to educational improvement. If the outcomes are not satisfactory, the solution in this paradigm is to provide more detailed prescriptions for practice and to monitor implementation more carefully.

There are no problems of practice in this view. There are only problems of implementation. As a consequence, we have created in this country a superstructure of regulatory offices which prescribe a variety of practices and design a range of programs; they inspect and monitor, receive reports and audit them. In addition to sometimes constraining practices in unfortunate ways, this approach to management sucks a lot of the resources we have to spend on education out of classrooms into peripheral offices at the edges of the core teaching-learning enterprise. One of the side effects of this approach of trying to control education by using design specifications in the old factory assembly line

model of organization is that we have a very top-heavy structure in which many fewer of the total resources make their way to classrooms than is true in most other industrialized countries (Darling-Hammond, 1990). These countries invest in supporting the work of "front line workers" in schools than in trying to inspect, monitor, and control that work.

This view assumes that students are standardized, treatments can be prescribed, and standardized rules for practice can be operationalized through regulations, reporting systems, and inspections of performance. In this view, teachers need not be particularly expert, as most major teaching decisions are handed down through policy and encapsulated in curriculum and teaching materials. It is better that they not be especially "empowered", as correct implementation depends on a certain degree of uniformity controlled from above. There is no rationale in this conception of teaching for substantial teacher preparation, induction, or professional development, aside from "inservicing" designed to ensure more exact implementation of prescribed teaching procedures. There is no need and little use for professional knowledge and judgment, or for collegial consultation and planning.

As a consequence of this view, in American schools "real teaching" consists of teaching large groups of students, often one after another in 5 or 6 batches of 30, nearly all day. Anything else that a teacher does is considered "released time." Time for planning, working with other colleagues on changes in the school organization, meeting individually with students or parents, working on the development of curriculum or assessment measures is rarely available and considered not part of the teacher's main job. In most countries, a typical secondary school teacher would teach large groups of students 15 to 20 hours per week, and would spend the other 20 to 30 hours a week engaged in working individually with students and parents, in working with other teachers on planning and consultation, developing curriculum and assessments, and so on. The conception of teaching is one that assumes a base of collegial discourse for instructional decisions and actions rather than the formulaic processing of 'products' passing by on a conveyor belt.

It is the logic of this paradigm that has allowed policymakers to avoid investing substantial resources in teacher preparation or teacher salaries. U.S. teacher preparation programs typically spend less per student than any other school or department in most universities. U.S. teachers earn about 30 percent less at the same levels of experience than other college-educated workers. There is no need to provide incentives for rigorous preparation if there is nothing of value to be learned. There is no strong argument for focussing on the abilities of those recruited and retained in teaching if these are only marginally related to the outcomes of schooling. If we can fix teaching by developing better regulations, there is no need to produce better-educated teachers.

One of the most extreme versions of this viewpoint has been implemented in one of the nation's largest city school districts, where teachers are supplied with a K-12 standardized curriculum outlining the scope and sequence for instruction in each subject in each grade, complete with a pacing schedule showing how much time teachers should spend on each topic and lesson plans for each day of the school year. Grading standards are also prescribed, showing how much weight teachers should give to each type of assignment (the assignments are also specified), and how they should calculate grades. Promotion standards are determined by standardized tests developed to match the curriculum. The assumption is that marching the students through these procedures is all that is necessary to ensure learning.

The new paradigm starts from the assumption that students are not standardized and teaching is not routine. Consonant with recent research on teaching and learning, this view acknowledges that effective teaching techniques will vary for students with different learning styles, different developed intelligences, at different stages of cognitive and psychological development, for different subject areas, and for different instructional goals. It posits that, far from following standardized instructional packages, teachers must base their judgments upon knowledge of learning theory and pedagogy, child development and cognition, curriculum and assessment; they must then connect this knowledge to the understandings, dispositions, and conceptions which individual students bring with them to the classroom.

This idea connotes a very different approach to educational reform. It also suggests a very different relationship between research and practice -- and between researchers and educational practitioners. Among the major sources of conflict in the history of educational research over this century are issues concerning the types of knowledge sought and the uses to which knowledge should be put. Is knowledge to be used to uncover the relationships among educational processes and outcomes that could be used to create the "one best system" (Tyack, 1974) of educational practice -- and become the basis for control of curriculum and teaching? Or is it to be used for illuminating the complexities of human learning and relationships in classrooms for the purpose of enriching teachers' own thinking about their practice, and empowering them to see teaching and learning through many lenses.

In the first instance, researchers produce knowledge for policymakers and administrators who use it to create the right design specifications. They then "impart" knowledge, usually in memo form, to teachers who are to use it in fairly straightforward ways. In the second instance, knowledge is produced with and for teachers.

John Dewey's quest for the sources of a "science of education" was aimed at the latter -- at enriching the teacher's capacity for heightened understanding and intelligent decisionmaking rather than at the control of her behavior. He argued that those who thought scientific study would ultimately result in a "uniformity of procedure" misunderstood the problem, and that argument has been going on throughout this century. Dewey (1929) put it this way:

> Command of scientific methods and systematized subject matter liberates individuals; it enables them to see new problems, devise new procedures, and in general, makes for diversification rather than for set uniformity (12). This knowledge and understanding render (the teacher's) practice more intelligent, more flexible, and better adapted to deal effectively with concrete phenomena of practice.... Seeing more relations he sees more possibilities, more opportunities. His ability to judge being enriched, he has a wider range of alternatives to select from in dealing with individual situations (20-21).

Contrary to the efforts of many recent reforms to translate research findings into uniform and unvarying rules for practice, Dewey argued that: "No conclusion of scientific research can be converted into an immediate rule of educational art. For there is no educational practice whatever which is not

highly complex; that is to say, which does not contain many other conditions and factors than are included in the scientific finding...The significance of one factor for educational practice can be determined only as it is balanced with many other factors."

This is essentially the same conclusion Lee Cronbach and others reached after investigating the interactions between specific teaching treatments and student outcomes, even adjusting for "aptitudes" or characteristics of students. He discovered that interaction effects that may be identified from teaching research are not confined to easily translatable 2 or even 3 way interactions, thus limiting the prospects of achieving generalizable rules for practice:

> An ATI (aptitude-treatment interaction) result can be taken as a general conclusion only if it is not in turn moderated by further variables.... Once we attend to interactions, we enter a hall of mirrors that extends to infinity. However far we carry our analysis -- to 3rd order or 5th order or any other -- untested interactions of a still higher order can be envisioned (Cronbach, 1975, 119).

He concluded that the search for empirical generalizations "in a world in which most effects are interactive" should give way to "response sensitive" research, which takes exceptions seriously and makes continual adjustments on the basis of individual, context-specific responses.

This is precisely what teaching must do. It must adapt and respond on the basis of individual needs and interactions to a complex, everchanging set of circumstances, taking into account the real knwoledge and experiences of learners: their cultures, their communities, the conditions in which they live. Yet this is what many current school reform policies seek to prevent teaching from doing.

In addition to highly prescriptive curriculum and testing policies such as those described earlier, the prescriptive teacher evaluation policies that exist in many states actually impede teachers from teaching responsively and effectively. One such policy, adopted in several states, requires that teachers be rated as "ineffective" for engaging in practices that take into account the needs and interests of their students (Darling-Hammond with Sclan, 1992). Despite research which suggests the importance of linking classroom work to students' personal experiences, the evaluation instrument codes as 'ineffective' any teacher questions that "call for personal opinion or that are answered from

personal experience." The coding manual notes that "these questions may sometimes serve useful or even necessary purposes; however, they should be tallied here [in the 'ineffective' column] since they do not move the class work along academically" (Florida State Department of Education, 1989, p. 5b).

Even though the research underlying this evaluation policy was put together in a very thoughtful and carefully reasoned research summary, the instrument frequently ignores or contravenes these findings. Rather than trying to put this knowledge in the hands of teachers for use in making complex judgments, the policy sought to summarize it in a few, simple and unvarying rules for practice to be used in the administrative control of teaching.

That particular instrument, which has been borrowed by a number of other states, is littered with statements suggesting that beginning teachers should be prepared to be insensitive to the students they teach and ignorant of a broader knowledge base on teaching. Floden and Klinzing's (1990) conclusion is on point:

> Training teachers to follow a fixed set of prescriptions discourages teachers from adapting their instruction to the particular subjects and students they are teaching. Hence, the instructional effectiveness of teachers given such training is unlikely to be at a high level (16-17).

Creating a 21st Century Paradigm for School Reform

If we are to move to a new paradigm for school reform, how should we think about reframing the school reform agenda? While reducing controls and prescriptions for practice, what do we invest in to support practices that can focus on the diverse needs and interests of learners? Earlier, I mentioned three areas in which that work should proceed: professional development, policy development, and political development.

Professional development. In this category, we need to invest in supports for practitioner knowledge -- knowledge that is in the hands of teachers to be used in ways that can engage and support their judgment in complex situations. These supports include continued investment in and strengthening of teacher education, especially at the preservice level. One of the most puzzling funding decisions by legislatures, agencies, and foundations is the frequent judgment that limited resources should be spent largely on inservice teacher education -- spreading tiny droplets of resources across 110,000 individual schools -- rather

than on concentrated efforts to improve the 1000 schools of education, only 500 of which prepare 80 percent of teachers in this country.

This is particularly important now, since over the next decade, we will have 2 million newly hired teachers coming into our schools and in the following decade, nearly that number again. It would be shortsighted to spend all of our limited professional development resources spreading band-aids across 110,000 schools, when we could be developing the kind of teacher education programs in every teacher educating institution that could prepare reflective teachers able to use many kinds of complex and contingent knowledge on behalf of responsive teaching for their students.

Second, policymakers need to find ways to support opportunities for collegial discourse and inquiry, including strategies like peer coaching, team planning and teaching, and situations in which teachers can acquire, create, and test their own knowledge. Engagement with teachers as researchers, enabling them to construct new means for inquiring into their practice, is clearly a part of this new paradigm.

A third important component is the creation of networks. Lieberman and McLaughlin (1992) in a recent piece on teacher networks -- such as the Foxfire network, the Urban Mathematics Collaboratives, the North Dakota Study Group, and others -- note that they transform practice and create professional communities by inspiring teachers' problem-solving, risk-taking, ownership, and leadership. They note that:

> The context in which educational change is pursued is everything. Many policies are based on assumptions about contexts for reform that do not take into account the alternative that networks offer. Instead of targeting individuals and attempting to provide them with new skills or perspectives, networks concentrate on building communities of teacher learners. It is thus critical that policy makers and others approach teacher networks not from the standpoint of management and control, but from that of the norms and agreements of communal relations (p. 677).

This collective perspective has to permeate the entire process of organizational development in order to create schools that can focus on learners.

Policy development. In terms of policy development, we need to focus on research and development that can support knowledge growth in the profession -- knowledge that is useful to teachers and, often, constructed with teachers. This

AERA meeting represents much of that kind of knowledge building: work on issues of subject matter pedagogy, curriculum building, teacher learning, student learning, links between intelligence, performance, assessment and classroom practice, teacher education, and professional development school initiatives, to name just a few areas. These kinds of research will help support the policy companions that must provide the foundations of a new paradigm for school reform.

We need to continue to produce the kind of knowledge that will inform changes in state licensing standards embodying the new conceptions of teacher knowledge for adaptive and reflective practice, for teacher education and accreditation rethinking, for the development of internship programs for new teachers and the creation of professional development schools. Our work should dig deeply enough into the textures of teaching and the nuances of teacher thinking that if can provide the kind of knowledge that will inform the work of such organizations as the National Board for Professional Teaching Standards, and for evolving more meaningful and sensitive assessments of teacher knowledge for licensing, certification, and evaluation systems.

We need to create policies that will build capacity in schools. Obviously, this includes revitalizing an equity agenda, so that adequate investments will be made in all schools' capacities to offer a thinking curriculum and to engage well-qualified and well-supported teachers. Without such investments, current rhetoric about "world-class standards" and new assessments will promulgate yet another cruel hoax on children in schools that haven't the remotest chance of offering that kind of education with the resources they currently command.

We need the kinds of policies that will promote organizational and individual development through dialogue and shared decisionmaking, supported by infusions of knowledge and reflective opportunities. That means policies need to encourage and allow schools to structure time for dialogue about practice, for collective inquiry into what is working well and how students can be better served.

The foundation of genuine accountability -- one of the words most used in the school reform rhetorical lexicon -- is really the capacity of individual

schools to organize themselves to prevent students from falling through the cracks, to create means for continual collegial inquiry in which hard questions are posed regarding what needs to change in order for individuals and groups of students to succeed, and to responsibly use authority that must be vested in their hands to make the changes necessary. No testing program alone can produce this kind of accountability. It will occur only if we find ways to empower, encourage, and allow schools to build an inquiry ethic, a community of discourse in the school, that is focused on students and their needs rather than on the implementation of rules and procedures.

This kind of accountability also requires a substantial amount of local control over school procedures and the assessment of outcomes. One of the things we are learning in our work at the National Center for Restructuring Education, Schools, and Teaching (NCREST) in New York City is that local school engagement in developing alternative forms of student assessment turns out to be a powerful tool for organizational development. There are ripple effects throughout the entire school organization when teachers are engaged in asking, "What do we want students to be able to do?" "How will we know if our students can do those things?" "What can we develop as a means for evaluating their knowledge and abilities in an authentic way?" "How do we develop shared views of what constitutes competence?" and "How will we help students get there?" Ultimately, these questions drive transformative changes in curriculum, in collegial discourse, and in the ways in which the organization focuses on students.

This is why who controls assessment is one of the major dimensions of the current assessment reform debate. Even more challenging and thought-provoking performance-based assessments will fail to transform schools if they are externally mandated and delivered. If some significant portion of the assessment process is not a function of the struggle of school people to define themselves as a learning community, then the possibilities for organizational change and improvement will be once again wrested away from schools. The engine for school change -- the catalyst for a community's political as well as educational development -- will have been once again removed from the local school arena where it must reside if it is to be effective.

Political development. By political development, I mean the ways in which groups of people develop shared goals and understandings, in this case, a broad consensus about the kind of education communities want for their children. Schools largely function now by submerging talk about those things which are most potentially controversial and most potentially important. Debates about the most fundamental concerns of teaching and learning are typically squashed -- or tacitly agreed to be inappropriate -- in faculty meetings, PTA meetings, and other gatherings of members of the school community.

Schools have tried to implement the rules and procedures of bureaucratically managed education by burying the dialogue that would legitimize recognition of the potential conflicts. We've maintained a fragile agreement to keep on going without really struggling with what we want from our students and what that requires from our schools. As a consequence, we have failed to form genuine communities in most of our educational institutions.

The Eight Year Study, conducted by the Progressive Education Association in the 1930s, illustrates the significance of this kind of community-building. During those years, a group of 30 experimental schools put in place nearly all of the various reforms we are now once again talking about. Three hundred colleges and universities agreed to accept students from these schools based on teacher recommendations and student work products rather than test scores and Carnegie units. The study demonstrated, from its evaluation of nearly 1500 matched pairs of students from experimental and nonexperimental schools, that on virtually any dimension of student development and performance --from academic honors to civic social responsibility, by the judgments of professors, teachers, or others -- the students from experimental schools outperformed those from traditional schools (Smith and Tyler, 1942).

Most important, the study found that the most successful schools were characterized not by the particular innovation they had adopted but by their willingness to search and struggle for valid objectives, for new strategies, and for new forms of assessment (Chamberlin et al., 1942, p. 182). It was the process of collective struggle that produced the vitality, the shared vision, and the conviction that allowed these schools to redesign education in fundamentally

important and different ways. If the processes and outcomes of education are already defined by those outside of schools, that means there is nothing left to talk about. The removal of local responsibility for thinking things through then deprives schools and members of communities of the opportunity of engaging in that kind of empowering and enlivening dialogue.

We therefore need policies that allow and encourage schools to engage in this kind of democratic dialogue that allows the development of a polity, a community with shared purpose. As Dewey (1916) suggested:

> ...There is more than a verbal tie between the words common, community, and communication. (People) live in a community in virtue of the things which they have in common; and communication is the way in which they come to possess things in common. What they must have in common in order to form a community or society are aims, beliefs, aspirations, knowledge -- a common understanding -- like-mindedness as the sociologists say. Such things cannot be passed physically from one to another, like bricks; they cannot be shared as persons would share a pie by dividing it into physical piece.... Consensus requires communication.
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> Not only is social life identical with communication, but all communication (and hence all genuine social life) is educative.... One shares in what another has thought and felt and insofar, meagerly or amply, has his own attitude modified.... It may fairly be said, therefore, that any social arrangement that remains vitally social, or vitally shared, is educative to those who participate in it (4-5).

The new paradigm for school reform must seek to develop communities of learning grounded in communities of democratic discourse. It is only in this way that communities can come to want for all of their children what they would want for their most advantaged -- an education for empowerment and an education for freedom.

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