DOCUMENT RESUME

ED 376 557 EA 026 239

AUTHOR Anson, Ronald J., Ed.
TITLE Systemic Reform: Perspectives on Personalizing Education.
INSTITUTION Office of Educational Research and Improvement (ED), Washington, DC. Office of Research.
REPORT NO OR-94-3308
PUB DATE Sep 94
NOTE 203p.
AVAILABLE FROM U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328.
PUB TYPE Books (010) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC09 Plus Postage.
DESCRIPTORS *Change Strategies; Cultural Pluralism; *Educational Change; *Educational Improvement; Educational Technology; Elementary Secondary Education; Organizational Change; Professional Development; School Based Management; School Community Relationship

ABSTRACT

The eight papers collected here bring to bear a complex set of perspectives on a common problem: how to make education more effective now and in the future. The papers speak to the need to understand education as an individual-driven, learner-centered activity. Following Ronald J. Anson's introduction called "Personalizing Systemic Reform," the papers include the following: (1) "Coordinating Top-Down and Bottom-Up Strategies for Educational Reform" (Michael G. Fullan); (2) "Change Has Changed: Implications for Implementation of Assessments from the Organizational Change Literature" (Suzanne M. Stiegelbauer); (3) "Time for Teachers in School Restructuring" (Joseph Cambone); (4) "New Boundaries for School-Based Management: The High Involvement Model" (Priscilla Wohlstetter, Roxane Smyer, and Susan Albers Mohrman); (5) "Teachers' Professional Development in a Climate of Educational Reform" (Judith Warren Little); (6) "Realizing the Promise of Technology: The Need for Systemic Reform" (Jane L. David); (7) "Bringing Schools and Communities Together in Preparation for the 21st Century: Implications of the Current Educational Reform Movement for Family and Community Involvement Policies" (Patrick M. Shields); and (8) "Research Knowledge and Policy Issues in Cultural Diversity and Education" (Roland G. Tharp). References accompany each chapter. (LMI)

SYSTEMIC REFORM

PERSPECTIVES ON PERSONALIZING EDUCATION

Edited by
Ronald J. Anson

U.S. Department of Education
Richard W. Riley
Secretary

Office of Educational Research and Improvement
Sharon P. Robinson
Assistant Secretary

Office of Research
Joseph C. Conaty
Acting Director

September 1994

The preparation of these papers was sponsored by the U.S. Department of Education, Office of Educational Research and Improvement. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the U.S. Department of Education.

For sale by the U.S. Government Printing Office
Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328
ISBN 0-16-045326-7

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Personalizing Systemic Reform

Ronald J. Anson

The Studies of Education Reform: The Program

The eight papers contained in this volume are the product of a larger program of studies sponsored by the U. S. Department of Education's Office of Educational Research and Improvement. That program, the Studies of Education Reform Program (SERP), was initiated in 1991. After meeting with policy makers, researchers and practitioners, OERI identified 12 areas of study on reform that it would fund. Work began in October, 1991, and included a series of papers commissioned by each study to provide background for the planned work in each of the areas of study. These eight papers represent some of the many papers developed for those studies.

The 12 SERP projects and the papers chosen from them for inclusion in this volume are:

Curriculum Reform Project - University of Colorado,
"Coordinating Top-Down and Bottom-Up Strategies for Educational Reform" by Michael G. Fullan, University of Toronto.

Assessment of Student Performance Project - Pelavin Associates, Inc.,
"Change Has Changed: Implications for Implementation of Assessments from the Organizational Change Literature" by Suzanne M. Stiegelbauer, University of Toronto.

Uses of Time Project - Policy Studies Associates,
"Time for Teachers in School Restructuring" by Joseph Cambone, Wheelock College.

School Based Management Project - Consortium for Policy Research in Education-The Finance Center,
"New Boundaries for School-Based Management: The High Involvement Model" by Priscilla Wohlstetter, Roxane Smyer and Susan Albers Mohrman, University of Southern California.

Systemic Reform Project - Consortium for Policy Research in Education-The Policy Center,
"Teachers' Professional Development in a Climate of Educational Reform" by Judith Warren Little, University of California, Berkeley.

Technology Project - SRI International,

"Realizing the Promise of Technology: The Need for Systemic Reform" by Jane L. David, Bay Area Research Group.

Parent and Community Involvement in Education Project - RMC Research Corporation,

"Bringing Schools and Communities Together in Preparation for the 21st Century: Implications of the Current Educational Reform Movement for Family and Community Involvement Policies" by Patrick M. Shields, SRI International.

Student Diversity Project - National Center for Research on Cultural Diversity and Second Languages,

"Research Knowledge and Policy Issues in Cultural Diversity and Education" by Roland G. Tharp, University of California at Santa Cruz.

Four additional projects were funded, and papers from those projects, as well as other papers from the studies above, will be included in later volumes published by OERI. Those four projects are:

School-to-Work Transition Project - Academy for Educational Development

Students at Risk Project - American Institutes for Research

Professionalism of Education Project - The NETWORK, Inc.

Early Childhood Education Project - National Association of State Boards of Education.

The purpose of the 12 projects is to ensure that a knowledge base, sufficient to support sustained implementation of successful reforms, is developed. The projects are expected to produce cumulative findings that can be the basis for local efforts at generating and sustaining reform.

Making Effective Reform: The Papers

The eight papers in this volume bring to bear a complex set of perspectives on a common problem: how can we make education more effective now and in the future. With the growing awareness that our efforts at improving education in the past have had mixed results, the authors of these papers have each provided a singular and powerful perspective on what we must do to move ahead. Taken together the papers spell out a prescription for change that is ultimately rooted in our ability to change the way we think about education - about the process and substance of education, about the key actors and ultimately about the future we want to build for our children.

The first two papers, by Fullan and Stiegelbauer, address our understanding of how systems

work and change and new paradigms that move us away from an organizational basis for understanding education to an understanding of education as an individual-driven, learner-centered activity.

Michael Fullan's paper, "Coordinating Top-Down and Bottom-Up Strategies for Educational Reform", begins by reviewing the failure of top-down and bottom-up reforms to effect change when undertaken separately. Fullan makes the argument for combining the strengths of each to create a more comprehensive and coherent model for change. With the framework for change from above and the flexibility from below, effective change can take place. This change is largely the work of individuals working together. Learning new behaviors, Fullan argues, is the result of personal interactions. This reculturation probably precedes and is more important to change than is organizational restructuring itself.

Suzanne Stiegelbauer directs our attention to four critical elements of change: people, practices, process and policies in her paper "Change Has Changed: Implications for Implementation of Assessments from the Organizational Change Literature". She focuses on the importance of people especially, noting the highly personal character of change and its underlying evolutionary qualities. Her paper makes us realize that we are engaged in changing the way people think about not only what they are doing and but who they are in that process. If people can positively engage change, the somewhat organic and "messy" business of changing for the better can be furthered. This must be done in a context of useful practices and enabling policy support that allows all the actors to work together.

The next three papers, by Cambone, by Wohlstetter, Smyer and Mohrman and by Little, give us new understandings of how to reconsider the organization of school and learning and the role of the individual, in particular teachers, in generating effective change.

Joseph Cambone has raised a fundamental question about how we approach our efforts at reforming the education system: Do we envision time, as seen by individuals in that system, in a way that will allow them to carry out reform? While many theories of and policies for reform understand the need to use time in new ways, Cambone in "Time for Teachers in School Restructuring", suggests that there are three constructs of time - the rational, the phenomenological and the cyclical, and many subsets of these, that need attention if reform is to succeed. Using a metaphor of meshed gears, in which teachers experience various kinds of time, usually simultaneously, Cambone argues that the individual's experience of time is a powerful determinant of effective reform.

Priscilla Wohlstetter, Roxane Smyer and Susan Mohrman have looked beyond the traditional approach of devolving power through school based management as a lever for reform to a broader definition of the necessary resources for effective reform. "New Boundaries for School-Based Management: The High Involvement Model", uses the construct from E. E. Lawler's book, High Involvement Management, that identifies four resources needed to make school based management a powerful lever for reform. In addition to devolving power, knowledge and skills must be developed, information about the context and goals of the organization must be available, and rewards must be based on performance. They looked at four districts that, to differing degrees, exhibited high involvement management coupled with

a push for curriculum and instruction reform. They found that success was tied to more shared power among many participants, extensive training to take advantage of opportunities and a system of collaboration and information sharing. For a number of reasons, extrinsic rewards did not figure into the equation for a successful change effort. The authors then raise the question of whether sustained change can be expected without these extrinsic rewards.

In her paper Judith Warren Little highlights the contradiction between the dominant training model of professional development and the requirements of the current reform movement. "Teachers' Professional Development in a Climate of Educational Reform", rightly points out the need for a new focus on the development of teachers' abilities to integrate reform broadly into their individual teaching context. Collaboration of various kinds is needed that leads to individual interaction, support, and personal and intellectual growth. The complexity of the current reform is a challenge to the teacher both as an individual and an actor in the system. By attending to the development of teachers, we begin to move away from the institutional perspective to the individual perspective on change.

The final three papers by David, Shields and Tharp bring to the table necessary new considerations that must be addressed if effective change is to be managed, not just for the present, but for the future. While much of our effort in reform is directed toward understanding and redirecting the current phenomenon of education, there are rapidly appearing in our education system forces that will necessarily redirect our energies. These last three papers suggest ways in which we might manage this with more, rather than less, understanding.

Jane David makes the point in her paper, "Realizing the Promise of Technology: The Need for Systemic Reform", that changing the goals, structure and supports of the education system are critical prerequisites to effectively harnessing the power of technology to promote change. Technology itself is not the answer to questions of reform, but can be a powerful part of the answer. However, it must be accessible, functional and be supported by proper training. David provides some rules of thumb for thinking about the use of technology in terms of ongoing planning, decentralized decision making, professional development and equity issues. But David warns that the larger and more difficult agenda of reform must move ahead if we are to make effective use of technology in its behalf.

Pedagogically, politically, and practically, argues Patrick Shields, schools and communities will have to be brought together as school reform moves into the 21st century. His paper, "Bringing Schools and Communities Together in Preparation for the 21st Century: Implications of the Current Educational Reform Movement for Family and Community Involvement Policies", argues that public policy must include families and communities more directly in the education of all students, just as earlier programs and policies directed inclusion of a variety of non-mainstream parents and communities. He bases his argument on research on past inclusion efforts that shows a positive relationship between parent and community involvement and improved educational outcomes. But now that schools are seen as not working very well for any students, we must apply these lessons more broadly. This breaking down of the long standing barriers between school and community derives also from new understandings of how learning best takes place. Shields provides a set of 7 public

policies that will promote and support further family and community involvement in schools and bolster current efforts at broad based reform of education.

The final paper in the volume, "Research Knowledge and Policy Issues in Cultural Diversity and Education", by Roland Tharp, addresses a problem that will become increasingly important in the future if demographic projections are correct. The problem is summarized in the four questions he addresses in his paper: 1) Can we account for important current student features in term of the historical forces operating on his or her ancestors in a time frame of hundreds to thousands of years and can this contribute to the design of effective programs? 2) Are culture members privileged in the capacity to teach, administer or investigate the education of their children? 3) Are there forms of education that are specifically or uniquely suited for the treatment of children of different cultures? or 4) Are there general or universal forms of schooling and teaching that will equally and adequately address students of diverse cultures? Despite the answers to the first three questions that suggest the possibility for a highly fragmented system of schooling, Tharp's resolution of the fourth question yields four principles that bring the diversity of the population together in a way that enriches all and promotes current approaches to effective learning.

A More Personal Education System: The Future

The eight papers in this volume speak eloquently to the need to focus more of our attention on the individual in the education system. Just as current learning theory has begun to understand the importance of students' being able to bring their own perspectives and experience to the learning moment, we are beginning to understand that all actors in the education arena must be free to bring their own perceptions and experience to education. This freeing up of individuals will ensure the kind of creativity and energy being demanded by new reform constructs.

The idea of a system based on personal perspectives seems, at first glance, a contradiction or at least an effort to push our understanding beyond what is currently acceptable. The provision of education in the United States is rooted in the "factory model" that emphasized the strengths of the "system' rather than the individual. The individual, whether student or professional, was considered a generic creature that was "treated" by the system in order to meet the goals of the system. This way of approaching education in this country is at the heart of current reform efforts. In each of the papers in this volume concern is shown for the inability of past efforts to consider the individual and give voice and meaning to individual perspectives.

As Fullan and Stiegelbauer rightly point out, there must be more balance between the directiveness of the system and the flexibility of the individual. But the path to reaching this end is far from obvious. As the following three papers, by Cambone, Wohlstetter et al and Little, reveal there are deep and, perhaps, abiding difficulties in reshaping how education is done in this country. The image of the substance and process of education that each of us carries around in our heads is part of how we think about not only education, but ourselves and the world in which we live. The paper by Cambone probably tells this story as well as any, by taking us on a whirlwind tour of the many ways a teacher must recalibrate the day

depending on which context is operative.

How do we personalize not only the system but, surprisingly, the people in the system? The idea that resonates through all these papers and, indeed, through much of the reform literature, is that the people in the system often behave as part of the system rather than as individuals. The task of making a personal system is to free th people in the system to realize their own individuality in a circumstance that traditionally has resisted that individuality.

The strength of any reform effort will be the ability of the individuals to shape their own individual reforms in the context of a larger reform. To do this will require such things as aligning the context of learning with new paradigms for learning (for students and professionals), increasing collaboration, flattening organizations, developing networks and other non-school connections, using technology effectively and embracing diversity.

This approach to reform is radically changing our ideas of what a system is and what we need from it and what an individual must be in this newly evolving system. While the outlines are still somewhat indistinct, fundamental assumptions of who we are, what we do and how we do it are subject to investigation now as never before.

Coordinating Top-Down and Bottom-Up Strategies for Educational Reform

Michael G. Fullan

Neither top-down nor bottom-up strategies for educational reform work. What is required is a more sophisticated blend of the two. In this paper I examine the problem in three ways. First, I review briefly some evidence that corroborates the proposition that neither centralized nor decentralized change strategies work. Second, I present the conceptional and empirical case that a blend of the two strategies is essential. Finally, I consider two levels of the problem - school-district, and school/district-state - to illustrate how simultaneous centralized-decentralized forces can be combined for more effective results. Thus, centralized and decentralized are relative terms that can be applied at any two adjacent levels of hierarchical systems.

Neither Top-Down Nor Bottom-Up Strategies Are Effective

Small and large scale studies ranging from "voluntary" to "mandatory" top-down strategies have consistently demonstrated that local implementation fails in the vast majority of cases.The best known study of the "voluntary" type is the Rand Change Agent study conducted by Berman and McLauglin and associates (1978). They investigated federally sponsored educational programs adopted in 293 sites. Berman and McLauglin found that, even though adoption was voluntary, districts often took on change projects for 'opportunistic' rather than for substantial reasons.

> Local school officials may view the adoption of a change agent project primarily as an opportunity to garner extra, short term resources. In this instance the availability of federal funds rather than the possibility of change in educational practice motivates project adoption.
>
> Or, school managers may see change agent projects as a "low cost" way to cope with bureaucratic or political pressures. Innovation qua innovation often serves the purely bureaucratic objective of making the district appear up-to-date and progressive in the eyes of the community. Or a change agent project may function to mollify political pressures from groups in the community to "do something" about their special interests. Whatever the particular motivation underlying opportunistic adoption there was an absence of serious educational concerns (Berman & McLaughlin, 1978, p. 14).

As dissatisfaction with failed implementation grew in the 1970s, states and districts turned more and more to mandatory solutions. Corbett and Wilson's (1990) study of the impact of compulsory statewide testing in Maryland and Pennsylvania is a case in point. They found that new statements testing requirements caused action at the local level, but in ways that narrowed the curriculum and created conditions adverse to reforms:

> coping with the pressure to attain satisfactory results in high-stakes tests caused

> educators to develop almost a "crisis mentality" in their approach, in that they jumped quickly into "solutions" to address a specific issue. They narrowed the range of instructional strategies from which they selected means to instruct their students; they narrowed the content of the material they chose to present to students; and they narrowed the range of course offerings available to students (Corbett & Wilson, 1990, p. 207).

Corbett and Wilson also identified other unintended consequences including the diversion of attention and energy from more basic reforms in the structure and practice of schools, and reduced teacher motivation, morale, and collegial interaction necessary to bring about reform. They conclude: "when the modal response to statewide testing by professional educators is typified by practices that even the educators acknowledge are counterproductive to improving learning over the long term, then the issue is a 'policy making problem'" (p. 321).

One a more sweeping scale, Sarason (1990) argues that billions of dollars have been spent on top-down reform with little to show for it. Sarason observes that such reform efforts do have an implicit theory of change:

> change can come about by proclaiming new policies, or by legislation, or by new performance standards, or by creating shape-up-ship-out ambience, or all of the preceding. It is a conception that in principle is similar to how you go about creating and improving an assembly line - that is, what it means to those who work on the assembly line is of secondary significance, if it has any significance at all. The workers (read: educational personnel) will change (Sarason, 1990:123).

Political impatience and expediency are as understandable as motivators, as they are ineffectual as strategies for educational reform. Governments can't mandate what mattes, because what matters most is local motivation, skill, know-how and commitment. As Goodlad (1992) observes: "top-down, politically driven education reform movements are addressed primarily to restructuring. The have little to say about educating" (p. 238).

In short, centralized reform mandates have a poor track record as instruments for educational improvement.

The failure of centralized reform has led some to conclude that only driven reform can succeed. Site-based management is the most prominent current manifestation of this emphasis. So far, however, the claim of superiority of grass-roots initiatives is primarily theoretical. In reviewing evidence on site-based management in The New Meaning of Educational Change, I concluded that restructuring reforms that devolved decision making to schools may have altered governance procedures but did not affect the teaching-learning core of schools (Fullan, 1991, p. 201). The evidence continues to mount.

Taylor and Teddlie (1992) draw similar conclusions in their study of the extent of classroom change in "a district widely acclaimed as a model of restructuring" (p. 4). They examined classrooms in 33 schools (16 from pilot schools that had established school-based management [SBMI programs and 17 from non-pilot schools in the same district). Taylor

and Teddlie did find that teachers in the pilot schools reported higher levels of participation in decision making, but they found no differences in teaching strategies used (teacher directed instruction, low student involvement in both sets of cases dominated). Further, there was little evidence of teacher-teacher collaboration. Extensive collaboration was reported in only 2 of the 33 schools and both were from the low participation (non-pilot) schools. Taylor and Teddlie (1992) observe: "Teachers in this study did not alter their practice ... increasing their participation in decision-making did not overcome norms of autonomy so that teachers would feel empowered to collaborate with their colleagues" (p. 10).

Other evidence from classroom observations failed to indicate changes in classroom environment and student learning activities. Despite considerable rhetoric and what the authors saw as "a genuine desire to professionalize teaching ... the core mission of school seemed ancillary to the SBM project" (p. 19). Substantive changes in pedagogy (teaching strategies and assessment), and in the way teachers worked together on instructional matters, proved to be elusive. These findings would not be as noteworthy, claim the authors, except for the fact that "the study occurred in a district recognized nationally as a leader in implementing restructuring reforms" (p. 16). Similarly, Hallinger, Murphy, and Hausman (1991) found that teachers and principals in their sample were highly in favor of restructuring but did not make connections "between new governance structures and the teaching-learning process" (p.11).

Virtually identical findings arise in Weiss's (1992) investigation of shared decision making (SDM) in 12 high schools in 11 states (half were selected because they had implemented SDM; the other half were run in a traditional principal-led manner). Weiss did find that teachers in SDM schools were more likely to mention decision about the decision-making process (e.e., composition of committees, procedures, and so on), but "schools with SDM did not pay more attention to issues of curriculum that traditionally managed schools, and pedagogical issues and student concerns were low on the list for both sets of schools" (p.2).

Similar findings were obtained in the implementation of the Chicago Reform Act of 1989. In essence, this legislation shifted responsibility from the Central Board of Education to Local School Councils (LSCs) for each of the city's 540 public schools and mandated that each school develop School Improvement Plans (SIPs). The LSCs by law consist of 11 or 12 members (six parents, two teachers, tow community representatives, the school principal - and, in the case of high schools, a student). Easton (1991) reports that the majority of elementary teachers said that "their instructional practices had not changed as a result of school reform and will not change as result of SIP" (p.41).

In sum, decentralized initiatives, as far as the evidence is concerned, are not faring any better.

Given the absence of any clear superiority of top-down or bottom-up strategies, two patterns, both ineffective, persist. One pattern resolves the dilemma through the false clarity of ideological preference. Many of those in positions of authority opt for centralized reform - "almost always egregiously indifferent to the role of obstacles", says Goodlad (1992:238). Advocates of decentralization, similarly (although from a different ideological perspective), push ahead with site-based management as an end in itself.

The other pattern, of course, rests on ambivalence about which way to go, usually resulting in flip-flops or swings from top-down to bottom-up emphasis. Both strategies are often pursued simultaneously, but in a completely disconnected manner. Rowley's (1992) case study of school district restructuring covering a 12-year period is instructive and I expect represents a familiar story. Sequoia Valley School District in California engaged in a major restructuring effort in the early 1980s following the appointment of a new superintendent in 1979. By 1985, the district had created a mission statement and a comprehensive strategic plan. The superintendent and the board "adopted a philosophy of school-based management". Over time, however, the board became dissatisfied with the uneven development and fragmentation of effort. The superintendent and board began to establish a number of particular programs with external funds and consultants and small groups of teachers and administrators in such areas as "whole language", "early childhood centers", "cooperative learning", and so on and so on. Observes Rowley (1992):

> Confusion and heated debate inevitably resulted from the lack of clear definition and from the overload of new programs. Was restructuring going to be a centralized, program-driven process in which schools would obligingly align with problems and solutions identified by Board members, the Superintendent, and district level committees? Or, was restructuring going to remain a school-based process with the district office playing a supporting role?
>
> The answer was both. The philosophy of school-based management and strong site councils continued to be heartily espoused by the Superintendent and Board. But they also had committed significant resources to new programs and had installed program specialists in key administrative roles throughout the district. Thus, it became apparent that Sequoia Valley's leaders had inadvertently created oppositional dynamics for change and that during this middle stage the climate for restructuring had become more contentious than-collaborative (p. 26).

The result, not uncommon, was the appointment in 1990 of a new superintendent known for advocacy of "tight school-based accountability and multiple methods of assessing student performance" (p. 28). Outcome-driven education became just the latest in the ebb and flow of district approaches. Because of its imposition and seeming incompatibility with preferred instructional approaches in many schools, conflict increased sharply. Within a year, doubts were being expressed by the board about the new superintendent's leadership style and its adverse effect on the morale of teachers and administrators.

In conclusion, the whole matter of the relative roles and relationships of centralized and decentralized strategies for educational reform is a morass, badly in need of conceptual and strategic clarification.

Why Centralized and Decentralized Strategies Are Both Essential

I have provided some evidence that neither top-down nor bottom-up strategies, by themselves, are effective, but it is necessary to probe deeper by asking *why* they do not work.

Top-down strategies are problematic because you can't complex change processes from the top. Senge (1990) calls it "the illusion of being in control".

> The perception that someone "up there" is in control is based on an illusion - the illusion that anyone could master the dynamics and complexity of an organization from the top (p. 290).

More fundamentally, the forces of educational change are so multifaceted that they are inherently unpredictable. As I stated elsewhere, change is non-linear and complex:

> How is change complex? Take any educational policy or problem and start listing all the forces that could figure in the solution and that would need to be influenced to make for productive change. Then, take the idea that unplanned factors are inevitable -government policy changes or get constantly redefined, key leaders leave, important contact people are shifted to another role, new technology is invented, immigration increases, recession reduces available resources, a bitter conflict erupts, and so on. Finally, realize that every new variable, that enters the equation - these unpredictable but inevitable noise factors - produce ten other ramifications, which in turn produces tens of other reactions and on and on (Fullan, in press)

Controlling strategies do not work because there is too much to control. Even strong leadership, and vision-driven change is seriously flawed, because things are constantly changing. We need a new mind-set to manage situations of constant flux (see Fullan, in press, Beer, Eistenstat & Spector, 1990, and Stacey, 1992).

Given these difficulties of attempting to control change from afar, it is understandable that local participation and site-based management appears to many to be the solution. Yet this alternative is also fraught with fundamental deficiencies. First, there is ample evidence that organizations in general, are not likely to initiate change in the absence of external stimuli. Schools in particular are not known for their innovativeness.

Second, we saw in the previous section, when schools do have the opportunity to control the change process (through site-based management, for example), they do not necessarily take productive action. They are more likely to get bogged down and/or make superficial structural changes.

Third, in decentralized systems it is difficult to discern let alone maintain quality control (on the other hand, accountability fares no better in centralized systems).

Fourth, one could speculate, that it is possible for a given school to become highly innovative, despite the district it is in. I would venture to add, however, that is not possible for such a school to stay innovative despite the district. District action or inaction - personnel transfers, hiring decisions, budget decisions, and the like - inevitably take their toll.

Stacey (1992) summarizes the problem of decentralized decision-making:

> The whole point of flexible structures and dispersed power is to enable those below the top level in the management hierarchy to detect and take action to deal with a large number of changes affecting an organization that operates in a turbulent environment. This is supposed to enable the organization to learn about its environment and so adapt to that environment faster than its rivals do. However, studies have shown that widening participation and empowering people by no means guarantees that organizational learning will improve (p. 175).

When two alternative positions - opposite solutions really - are both found to be basically flawed, it normally means that a paradox lies behind the problem. What is required is a shift of mind-set from either/or to both/and thinking. Beer et al (1990) summarize the situation.

> The top-down approach possesses some allure. It holds the promise of producing rapid change toward an elegantly conceived end state that is symmetrical and complete. Thus, managers can lead their employees in the desired direction. But the unilaterally directive approach also has traps into which renewal can fall. Employee commitment to the newly aligned organization may be low, and employee knowledge of how things get done in the organization may not be considered in the solution.
>
> A bottom-up approach that allows, even demands, participation by employees seems to address many of the failings of unilateral top management direction. But it can suffer from a different set of problems. A participative approach to change may be too slow and ill defined to respond effectively to short-term business demands. It presents top managers with the problem of how to incorporate their perspective and knowledge into new solutions. It raises questions about the motivation and skill of employees to develop an ambitious solution that will "force" them, the employees to change their ways. Even worse, participative approaches to change can be derailed by resistant managers, unions, and workers.
>
> Our examination of revitalization efforts in 26 plants and business units across the six companies reveals that effective renewal occurs not when managers choose one alternative or the other. Instead, effective revitalization occurs when mangers follow a critical path that obtains the benefits of top-down as well as bottom-up change efforts while minimizing their disadvantages (p. 68-69).

Pascale (1990) draws a similar conclusion in examining the turnaround at the Ford Motor Company in the 1980s:

> Change flourishes in a 'sandwich'. When there is consensus above, and pressure below, things happen. While there was no operational consensus at the top as to precisely what should be done at Ford. the trips to Japan caused many senior managers to agree that the problems lay in the way the organization worked. This might not have led anywhere, however, were it not for pressures for change coming from the rank and file (p. 126, 128 emphasis in original).

Finally, research on effective and collaborative schools shows that such schools do not go it

alone, but are actively part of a wider network in which external and internal to the school influences are equally important. Collaborative schools, for example, are more likely to seek outside ideas, more likely to be linked to their districts, and more likely to engage state-level policies proactively (Louis & Miles, 1990, Rosenholtz, 1989, Nias, Southworth & Campbell, 1992). Baker et al's (1991) study of 48 school districts in Illinois confirms that internal development and external involvement must go together. Thirteen of the 48 districts were classified as engaged in "systematic improvement" on a sustained basis. It is no accident that all 13 successful districts were found to be users of external support from regional educational service centers and several other sources. By contrast in all 8 cases that had no external support there was no evidence of school improvement. Time and again we find that seeking external support and training is a sign of vitality.

External linkages do not necessarily involve connections to a hierarchical center, but in effective systems they include two way interaction with those in authority. Thus, the boundaries between external and internal systems, between top-down and bottom-up levels become effectively permeable and mutually influential in successful organizations.

Coordinating Top-Down and Bottom-Up Strategies

Recognizing that both top-down and bottom-up strategies co-exist in effective systems means that the choice of reform strategies will never be entirely clear. Ambiguities and tensions always accompany complex change processes. In this final section my intent is to contribute some clarity to this vexing problem area by making two generic distinctions, and then by providing two case illustrations - one at the level of school (local)/district(center); the other at the district (local)/state (center) levels.

The two generic distinctions pertain to division of labor (between the center and local), and the sequence of strategies. Division of labor concerns the relative roles of the center and local entities. In overall terms, the center's role in bilateral systems is to stimulate and respond to local action, help formulate "general direction", gather and feedback performance data, focus on selection, promotion and replacement, provide resources and opportunities for continuous staff development, and the like. The role of the local unit is to take action, work on shared vision, develop collaborative cultures, monitor and problem solve vis-a-vis desired directions, respond and be proactive with external agencies and events, and basically to develop the habits and skills of learning organizations. These relative roles will become clearer through the two case illustrations to be described below.

Even more problematic is the sequence of events and emphasis. In dynamic systems there can be no step-by-step set of procedures. Recent research, however, shows that non-linear change does work in approximate patterns, which point clearly to the types of strategies that are more or less likely to be effective (Fullan, in press). As heretical as it sounds, reliance on visions and strong shared culture contains severe limitations for addressing complex change.

In studying 'the critical path to corporate renewal' in twenty-six companies, Beer et al (1990) concluded the following:

- Change efforts that begin by creating corporate programs to alter the culture of the management of people in the firm are inherently flawed even when supported by top management.
- Formal organizational structure and systems are the last things an organization should change when seeking renewal - not the first, as many managers assume.
- Effective changes in the way an organization manages people do not occur by changing the organization's human resource policies and systems.
- Starting corporate renewal at the very top is a high-risk revitalization strategy not employed by the most successful companies.
- Organizations should start corporate revitalization by targeting small, isolated, peripheral operations, not large, central, core operations.
- It is not essential that top management consistently practice what it preaches in the early stages of renewal, although such action is undoubtedly helpful (p.6).

Beer et al found that isolated pockets of change reflecting new behaviors, led to new thinking which eventually pushed structures and procedures to change. People learn new behaviors primarily through their interactions with others, not through front-end training designs. Training builds on and extends new momentum. We found this process very clearly in our work in Brock High School in the Learning Consortium (Durham Board of Education, Video; Fullan, 1993). Change started in the behavior and culture of teaching and teacher relationships through small-scale inservice, which in turn spread and led to changes in structure.

This leads to the interesting hypothesis that reculturing leads to restructuring more effectively than the reverse. In most restructuring reforms, structure is expected to push for cultural change, and mostly fails. There is no doubt a reciprocal relationship required between the two. But, it is much more powerful when teachers and administers begin working in new ways only to discover that school structures must be altered than the reverse situation in which rapidly implemented new, structures create confusion, ambiguity, and conflict ultimately leading to retrenchment.

In any case, Beer et al (1990) found that organizations that underwent successful revitalization followed a particular sequence in which individual, small group, and informal behavior began to change first (bottom-up, if you will), which in turn was reinforced and further propelled by changes in formal design and procedures (structures, personnel practices, compensation systems etc.) in the organization (top-down). Both local and central levels can be active and influential at all phases, but what is attended to, and when is critical.

The Case of School-District Relationships

Most school districts are not known for their focus on instruction (Elmore, 1992). Given the absence (in these cases) of top-down initiative from the district, schools in such jurisdictions are less likely to work on development has a poor track record at the level of school and classroom implementation (Fullan, 1991). What works is simultaneous school-district co-development reflecting both top-down and bottom-up initiatives.

How can schools and districts interact, avoiding center dominance on the one hand, or

disregard of the center and individual school drift on the other? A few examples:

Louis and Miles (1990) conducted case studies of five urban high schools which had undertaken major reform projects. Two of the five schools were successful. What is most significant relative to our interest, is that these two schools had different relationships with their districts than the three schools that had not succeeded. Louis (1989) analyzed these relationships. She found that there were two separate dimensions that affected the quality of the relationship. One she called the degree of "engagement" (frequent interaction and communication, mutual coordination and influence, some shared goals and objectives); the other she classified as the level of "bureaucratization" (the presence of extensive rules and regulations governing the relationship). To oversimplify, in situations of low engagement and high bureaucracy, Louis observes that there is frequent reference to rules but limited enforcement, because the schools and districts operate in isolation from each other. The principal, for example, often operates as a buffer to central rules. In the case of high engagement and high bureaucracy, Louis found conflict, interference, resistance, and ultimately failure.

The third situation - low engagement and low bureaucracy - is one of loose federation, informality, and laissez-faire, in which people essentially did not try to engage in comprehensive change. The fourth scenario - high engagement and low bureaucracy - presented "the only clearly positive district contexts" (p. 161). Louis (1989) summarizes: "Essentially, the picture is one of co-management, with coordination and joint planning enhanced through the development of consensus between staff members at all levels about desired goals for education" (p. 161). It was only the schools with this district profile that experienced successful school improvement projects.

Similar findings, independently and more systematically arrived at, are contained in LaRocque and Coleman's (1989) analysis of "district ethos" and quality in school districts in British Columbia. The authors compiled performance data by aggregating school results on provincewide achievement tests. They rated the districts according to high, medium, and low performance. They selected 10 districts for more detailed analysis taking into account size and type of school community. LaRocque and Coleman (1989, p. 169) hypothesized that positive district ethos would be characterized by a high degree of interest and concern relative to six sets of activity and attitude "focuses".

1. taking care of business (a learning focus);
2. monitoring performance (an accountability focus);
3. changing policies/practices (a change focus);
4. consideration and caring for stakeholder (a caring focus);
5. creating shared values (a commitment focus); and
6. creating community support (a community focus).

Three of the ten districts were classified as having a strong district presence in the schools, which is described in the following terms:

> The district administrators provided the principals with a variety of school-specific

performance data; they discussed these data with the principals and set expectations for their use; and they monitored through recognized procedures, how and with what success the schools used the performance data...

The district administrators used their time in the schools purposefully to engage the principals in discussion on specific topics: school performance data, improvement plans, and the implementation of these plans...

In spite of the emphasis on school test results, the nature of the discussions was collaborative rather than prescriptive. The district administrators acknowledged good performance. They helped the principals interpret the data and identify strengths and weaknesses, and they offered advice and support when necessary. Ultimately, however, plans for improvement were left up to the principal and staff of each school - this point was stressed by the principals although their progress in developing and implementing the plans was monitored. The features of collaboration and relative school autonomy probably reinforced the perception of respect for the role of the principal and recognition of the importance of treating each school as a unique entity (LaRocque & Coleman, 1989, p. 181).

All three of these districts had a high performance rating on the achievement tests.

At the other end of the continuum, three districts were characterized by an absence of press for accountability: Little or no data were provided to the schools, and no structures or processes were established to monitor or discuss progress. All three of these districts were found to be low on achievement results.

LaRocque and Coleman (1989a, p. 190) concluded that effective districts have an active and evolving accountability ethos that combines interactive monitoring with a respect for school autonomy.

A third example: Rosenholtz (1989) studied seventy-eight "stuck" and "moving" schools from eight districts. She discovered that some school districts had higher proportions of stuck schools while others had more moving schools. She concluded that districts can also be stuck or moving, and that this directly influences school effectiveness. In particular, she found that moving districts worked interactively and continuously with school personnel on (i) goal-setting and monitoring, (ii) principal selection and professional development, and (iii) teacher selection and professional development.

A last example comes from Learning Consortium in the Toronto area where we have been working for five years in a partnership with four large school districts and two higher education institutions, one of the focuses has been to link school and district development. The Halton (44,000 students) and Durham (55,000 students) districts provide illustrations of the complexity and components of school level and district level developments.

In Halton, for example the strategies used to achieve correlated development include:

- The establishment of a broad-based mission statement and strategic directions statement that provide core foci while enabling flexibility
- The development of a School Growth Planning process as a means of achieving continued growth geared to each community's context
- The use performance appraisal for teachers within the school and for vice principals and principals vis-a-vis the system that is integrated with the three strategic directions (instruction, school planning, and staff development)
- A selection and promotion process for new teachers, school administrators, and district personnel that stresses criteria such as collaborative skills, staff development participation and leadership, implementation planning, and knowledge of the change process
- A systematic commitment to continuous development through allocating staff development funds to each school, conducting systemwide institutes, providing training and support in school growth planning, and establishing a range of indepth leadership institutes for teachers, future administrators, and existing administrators (which allows among other things, future vice principals and principals to develop a track record of capability regarding promotion criteria)
- The development of an assessment and evaluation system for the district, which provides periodic feedback into the processes described above (see Fullan, 1993).

Similar patterns took place in Durham including:

- A broad-based system mission plan
- An emphasis on school growth team development and planning with many and varied examples of school-based initiative
- Massive staff development aimed at capacity-building (cooperative learning, conflict resolution, training school growth planning, training of trainers, and more)
- Changes in leadership training, performance appraisal, and selection and promotion criteria consistent with new directions
- Central district reorganization which combined downsizing and devolution of authority to schools, with refocussing the districts role on direction setting, information gathering and feedback, and regional support to families of schools (see Bennett & Green, 1993).

To conclude, there is a broad pattern to the evolution of redesigning the relationship between schools and districts, which is similar to Beer et al's (1990) findings cited earlier about the critical path to revitalization. Initiatives occur at both district, and school levels, at first in an uncoordinated fashion. Action and variation at the school level is allowed and encouraged. As people gain clarity and skills through experience, and as training and new approaches to selection and promotion begin to accumulate, greater consistency is achieved, and pressure mounts to alter the organization which is now experienced as ill-fitted to the new emerging patterns. As with Beer, formal procedures and formal reorganization are changed later in the process, not at the beginning.

It is also clear that independent as well as (where possible) coordinated action is needed from both school and district levels. In the mid to long run you cannot have district development without school development, or school development without district development. One inevitably takes its toll on the other, for better or for worse.*

Finally, the pattern of evolution being described is very complex, and contains great ambiguity about what is really best. We are still at the very early stages of rethinking the relationship between schools and districts. Many, many questions remain unanswered, and plague those working on school and district restructuring.

The Case of Local/State Relationships

The same problems apply, writ large, concerning local/state or local/national relationships. The same principles of top-down/bottom-up simultaneity also apply. Researchers have found that change occurs when top-down mandates, and bottom-up initiatives "connect". As stated by Fuhrman, Clune & Elmore (1988):

> One of our most interesting and important discoveries is that many local districts are going far beyond compliance; they are responding very actively to state reforms. In over half of our local districts, administrators saw in the state reforms opportunities to accomplish their own objectives, particularly as the state reforms provided significant funding increases. Local districts are actively orchestrating various state policies around local priorities, strategically interacting with the state to achieve goals. For example, one major urban district coordinates almost all state teacher policies, including its mentor-teacher and alternate-route programs, to meet the prime objective of hiring a large number of new teachers (p. 247).

Similarly, in examining the impact of (p. 247) California's major reform legislation S.B. 813, Odden & Marsh's (1988) main findings were:

- Virtually all schools implemented key provisions of S.B. 813 in a manner consistent with state purposes.
- Education reform legislated at the state level can be an effective means of improving schools when it is woven into a cohesive strategy at the local level.
- Successful implementation of reforms at the local level reflects several key themes (district leadership, school collegiality, concern for all students, ongoing staff development, etc.).
- Attention to the substance of curriculum and instruction and to the process of school change correlates with high test scores and improved learning conditions for all students.
- Students with special learning needs - the poor, those with limited proficiency

* In the very long run, it is possible to imagine very different systems which do not include local school districts at all (see Elmore, 1992). Whatever the eventual pattern, some form of combined top-down/bottom-relationship will be essential for effectiveness.

in English, and those at risk of dropping out - received increased services and attention.Unfortunately, the services were generally of a type that has produced insufficient levels of academic achievement in the past. Sample schools lacked appropriate strategies for mounting more effective interventions for at risk students.

- Sample schools wanted to engage in even more complex school improvement, such as focusing the curriculum on problem solving and on higher order skills (pp. 595-96).

From a strategy perspective, the question is how to maximize the productive mix of top-down pressure, incentives and responsiveness on the one hand, and bottom-up initiatives, development, and accountability on the other hand. In a commissioned paper to the Ontario government, we suggested four broad strategies to guide its current restructuring reform (Fullan & Kilcher, 1992):

1. Articulate at the state level on overarching rationale and direction with reference to desired learning outcomes.
2. Local and regional capacity building should be a priority for schools, districts and regions.
3. Invest from the state level in value-added strategies to support and feed into local development (such as funding exemplary programs, research, evaluation and dissemination).
4. Work on defining roles and establishing partnerships , and alliances across key constituencies (universities and schools, teacher unions, etc.).

Clune (1992) similarly opts for a "coordinated decentralized" approach to systemic reform rather than a "standardized centralized" approach. He argues that in complex and differentiated systems centralized approaches paradoxically do not achieve greater coherence, but rather add more layers of confusion. His recommended strategy is to find a "balance among central guidance, central provision of resources, a realistic network of change agents just above the school level, and provision for school improvement" (p. 19). In particular he outlines a combination of tasks that include:

- Sponsor and facilitate a range of curriculum development efforts.
- Facilitate creation of curriculum networks.
- Create incentives for schools to initiate and sustain approved processes of curriculum upgrading.
- Develop personnel policies which compensate skill and effort in the new curriculum.
- Develop a student assessment system which tracks progress and leads practice.
- Sponsor efforts to coordinate different parts of the delivery system.

The goal is to achieve greater coherence without centralization. Clune concludes that direction setting and information monitoring combined with increased decentralized capacity stimulated by change agent networks "is both more feasible and more powerful as a tool for producing coherent, ambitious curricula at the school level" (p. 14).

Although not addressed to the question of state-board relationships, Hampden-Turner's (1992) review of the Hanover Insurance Company is instructive. Investment in continuous skill development al all levels operates in a negotiated system of local and central give and take. The dilemma, successfully managed by Hanover was:

> how to make local branch staff stronger and more self-reliant, while also making the staff at the national office strong, capable, and responsive. There were two perils to be avoided: A strong central staff that suppressed local initiatives and make branches dependent, and a strong local staff that resented any interference from national HQ as an infringement of their autonomy (p. 25).

Hampden-Turner found that Hanover constantly works on the attainment of a larger vision which is tested by specific information and numbers gathered by the organization. Is recognized that local units are comparable in some respects, and different in others. Thus, the center and the locals negotiate goals, develop strategies for success and seek data in relation to agreed upon directions.

Conclusion

In summary, in complex societies, the elements will never be in complete harmony. In such situations top-down strategies result in conflict and/or superficial compliance. Expecting local units to flourish through laissez-faire decentralization leads to drift, ad hocness and/or inertia. Combined strategies which capitalize on the center's strengths (to provide perspective direction, incentives, networking, and retrospective monitoring) and local capacity (to learn, create, respond to, and feed into overall directions) are more likely to achieve greater overall coherence. Such systems also have greater accountability because the need to obtain political support for ideas are built-in to the patterns of interaction.

The reason that simultaneous top-down/bottom-up strategies are essential is that dynamically complex societies are always full of surprises (Senge, 1990, Stacey, 1992). Only the negotiated capacity and strengths of the center and the locals, in combination, are capable of pushing for improvement while retaining the capacity to learn from new patterns, whether anticipated or not. Finally, and paradoxically, one level cannot wait for the other to get its act together. The way that systems change for the better, is that individuals and small groups of individuals intersect, and find kindred spirits, locally and centrally. Systems don't change by themselves. Individuals change systems, acting individually and together regardless of how ineffective they perceive others around them. Breakthroughs occur when productive connections add up to create growing pressure for systems to change (Fullan, in press). The more that top-down and bottom-up forces are coordinated, the more likely that complex systems will move toward greater effectiveness.

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Change Has Changed: Implications for Implementation of Assessments from the Organizational Change Literature

Suzanne M. Stiegelbauer

Introduction

The twenty-odd years of research on change in schools have provided a wealth of information on processes that work and do not work. For many, however, the successful implementation of new programs and processes, or innovations, remains a dilemma. The long-term commitment necessary for successful implementation and continuation is hard to keep in focus and even more difficult to keep funded, although the real goal of change remains always to have an impact on outcomes. Schools and teachers get involved in new things to make the educational process better and to improve themselves or their students' capacity to learn. Yet, reaching outcomes requires keeping up the pressure, getting past initiation to the real work of change — work that progressively has taken on new dimensions and new possibilities.

When we speak of change, we may be talking about a specific agenda, as in the use of assessments, but we also are talking about changing the way that people (including students) work together as they apply assessments, and we are talking about how those assessments relate to other aspects of school life. In short, our concern is with the school, not just the classroom.

This paper deals with those elements important to the actual work of change: people, processes, practices, and policies (Loucks-Horsley, 1989). The paper also is about a new model for change, one which reflects a different way of thinking about how change fits into today's educational systems. To paraphrase Matt Miles (1992), and at the risk of overstating the obvious, the secret of change still lies in the applied common sense of the people involved. People know more than they think they know; the problem is putting that knowledge into action, and that means reflecting on or processing what they think and developing a flexible sense of where they are going. This paper takes some of the pieces of change as presented in the research of the last two decades and puts them together so that educators can use what they know to develop an environment wherein change succeeds.

Change: Old and New

A Linear Approach

Back in the 1970s, when the research on change in schools began in earnest, change was viewed primarily as classroom change — one teacher, one classroom, one innovation. In fact the central paradigm for planned educational change through the early 1980s provided an *innovation focussed* perspective on the implementation of single changes in curriculum and

instruction (Fullan, 1985). Thinking about change was linear in those days. One found or developed an innovation that would meet the needs and outcomes one had already defined. Not surprisingly, many desired results did not occur.

We now know a number of different reasons why — lack of match to the environment, lack of follow-through, lack of definition, lack of practice and training in the innovation. Change in these circumstances could be described as an *event*, because it was selected and announced; and it was assumed that change would then simply happen. Emphasis was on designing and adopting good programs, not on implementing them. Frustration with the lack of outcomes foreshadowed by such an approach was a major factor in the initiation of research on the change *event*, or on what happened between adopting a program and getting results.

An Overlapping Approach

Change is now approached a bit differently. The research on change has generated an emphasis on process and its context. Effective change no longer affects one teacher in one classroom, but the very *culture* of schools. As Larry Cuban says, many of the early efforts at change might be called "first order changes." They are addressed to more superficial elements of the classroom and the school system and do not stress the organization to any meaningful degree. However, many of the changes required by current societal and educational demands go deeper than any surface treatment can address, and require what Cuban calls "second order changes" — changes that go deep into the structure of organizations and the ways in which people work together (Cuban, 1988). This kind of change is multifaceted, slower, and means changing attitudes, perceptions, behaviors, relationships, and the way people collaborate.

Many argue that making change operational and institutionalized within a system is only part of the challenge. Crandall, Eiseman, and Louis (1986) note that the goal of institutionalization is often tantamount to routinization, which decreases the capacity of schools to integrate responses to new needs and issues. The assumption is that renewal (Hall & Loucks, 1977), rather than institutionalization, is a more appropriate focus for school improvement. Renewal implies an organizational culture geared toward continuous learning and improvement, rather than completing the implementation of individual changes (Stiegelbauer & Anderson, 1992).

In new models for change, organizational capacity for continuous renewal and growth points toward the direction of the future and "changing the culture of schools — what schools do and how they work — is the real agenda" (Fullan & Hargreaves, 1992). Planning for individual change is only part of changing the educational environment as a whole. This sounds imposing, and in many ways it is. However, the past 20 years have taught us something about strategies and processes that can be applied to good effect. (See Figures 1 and 2 for visualizations of the old (linear) and the new (overlapping) processes of change.)

CONTRASTING VIEWS: LINEAR vs. OVERLAPPING

FIGURE 1

A Linear View of the Change Process

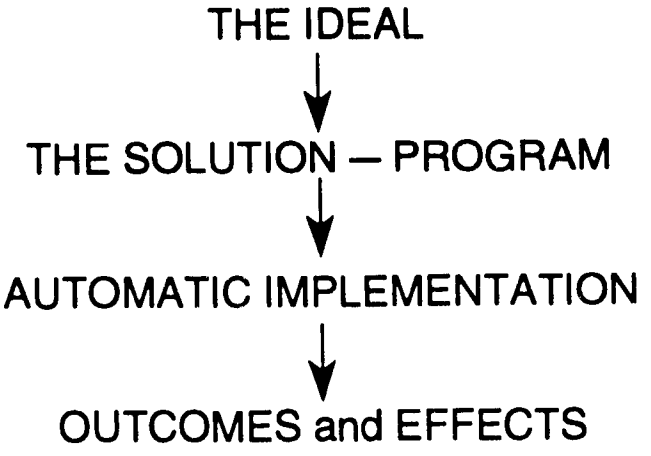

FIGURE 2

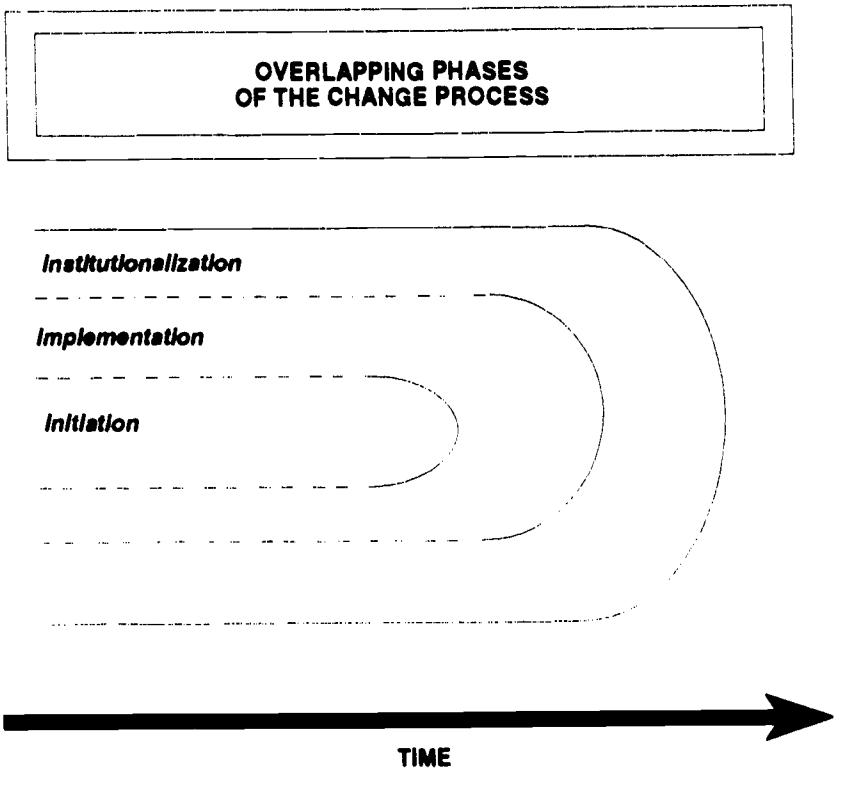

Figure courtesy of Michael Fullan

People: The Most Important Element In Change

The baseline for any change is working with people who will put plans into operation; people who will lead, support, and act as resources; and people who will act as catalysts and energizers. Early research recognized the necessity of people, but it took a long time to define what that recognition really meant to change, itself.

One obvious meaning is that people are different and will respond to change in different ways — some will quickly become involved, some will resist, some will perhaps never engage themselves in the process. Another element that becomes obvious is that teachers, usually the objects of change, are historically *independent craftspersons* who often work in isolation and who place great value on the practical outcomes of their work (Huberman, 1983). Finally, research shows that, given these variables, the more contact that occurs, especially one-to-one supportive contact (Hall & Hord, 1987) and group problem solving or *process analysis* discussions (Miles, 1992), the more likely it becomes that these independent individuals will take on the change.

Fullan (1991) asserts that an individual's involvement with and commitment to change is motivated largely by an individual's subjective understanding of the meaning of change. Within this *subjective reality*, individuals have to decide "what's in it for them" and how they will deal with this new opportunity. It is the "transformation of subjective realities," or the establishment of a new meaning or relationship to the change, that is the essence of any substantive change process (Fullan, 1991).

Sometimes subjective meaning can be mediated by dealing with the objective reality of the change (i.e., what the change really is, how it relates to current practice, and what its effects will be). This is Fullan's second factor related to meaning. On the one hand, there is the individual and his or her personal being; on the other hand is his or her professional life and responsibilities. Somewhere within this framework, change lives or dies.

Teachers are very concerned about what might be called a *practicality ethic* (Huberman, 1983). Objectively, a change has to have practical outcomes for them and for their students. A change also has to be sound, not superficial; be clear in its goals and procedures; have a role within the organizational status quo that will lend it long-term support and ongoing clarification; and finally, change has to be valued by the organization and by the teachers within that organization. Many teachers feel "burned" by putting effort into changes that were short-lived, not valued, not clear when implemented in the classroom, and not practical for students. Such negative experiences reinforce the subjective reality that change is not worthwhile.

Learning-related Actions

In this context, it makes sense that schools use assessment as an area around which to focus a number of learning-related actions, which can in turn contribute to future innovations. What can teachers learn about talking to each other about assessments? What kinds of assessments work best for them? What do students think about assessment? How can commitment to

experimentation be encouraged? Group dynamics focused on problem solving and implementing solutions can help clarify how teachers will approach change; and the dynamics of the group also go a long way toward developing consensus around the value of change within the organization.

The Need for Information

In the early stages of response to change, there is a need for information about how the innovation will affect individuals personally (*self*); later, individuals need both time to practice the change even as they manage it (*task*); and finally, individuals will be interested in refining what they are doing to better meet the needs of their students (*impact*). These change-related concerns describe the process that teachers go through as they take on something new. Individuals will go through these stages at different rates, but facilitators can use certain guidelines for the kind of information and support individuals or groups will need at different points in time.

The Need for Leadership

First of all, change requires leaders -- those who keep up the pressure and provide visible sanction for what is happening; and change also requires support in terms of policy and funding. The research makes it clear that district, board, and school administrators are the main determinants of whether or not change gets implemented. Without their continued and highly visible support, change has little chance to succeed. Leaders may or may not be facilitators; however, they must be communicators who are committed to the goals of the change and demonstrate the sincerity of their intentions to all members of the system. Their experience can guide those who are more conservative in their response to change and who want to see more concretely what the change is all about.

These leadership and support functions of change illustrate Fullan's (1985) idea of *pressure and support* as one necessary ingredient to a change process. Without a certain amount of pressure nothing happens, nor will anything happen without support to tailor change to the needs of individuals and individual contexts.

Practices: Need, Complexity, Clarity, Quality, Practicality

The qualities of innovation itself make a difference to successful change. The best practices are classroom-friendly, well-defined, practical, and relevant to teachers' needs and interests. Portfolios have been adopted widely because they have most of these qualities. Teachers like to feel that any new practice has clear benefits for them and for their students. Practices that are too similar to or too different from conventional approaches present problems of implementation because teachers either do not clearly distinguish what is new or feel a sense of loss or resentment in being asked to change from what they perceive as successful current practice.

Need and Complexity

The one-teacher/one-classroom innovations of the 1970s and 1980s were frequently developed from the perspective of *technical rationality* (Miles, 1992). Innovations were developed because they were in some way technically better than current practice and would presumably lead to better results. This decision about better results was seldom the decision of the implementing teacher. Some teachers did develop and market innovations that worked for them, such as the "Programs that work" of the National Diffusion Network. Initially, the movement toward technical rationality led to an insistence on "innovation quality, fidelity of implementation, and to a search for 'teacher-proofness'" (Miles, 1992, 9). In other words, a technically good innovation should be able to be introduced anywhere with the same results. This turned out not to be so, and that circumstance launched much of the research on implementation as we know it currently.

On the contrary, it turned out that many innovations are high on cost, low on fit, and involve "false clarity" (i.e., they appear easy to implement, but actually involve more effort or change than people anticipate (Fullan, 1991, 70) or are superficially interpreted). Practical changes are those that address salient needs, fit well into real teacher situations, are focused, and include concrete how-to-do-it possibilities (Mortimore, et al., 1988). Huberman (1983) describes a number of factors that affect innovation implementability and attractiveness to teachers, including:

- Craft legitimization. Was the product field tested?
- Compatibility. Is the social context of prospective users, particularly with regard to opportunities and incentives for action, incorporated into the innovation?
- Accessibility. Is the innovation designed to relate to the conceptual framework of a person who does not already share the assumptions of change?
- Observability. Is there opportunity for the prospective user to assess the knowledge in light of his or her own reality — such as vivid descriptions of the ideas at work?
- Adaptability. Do the innovations encourage local adaptation?
- Inspiration. Does the innovation have a strong inspirational thrust? Are idealistic-altruistic values an important component of its message?

Given the *classroom press* of teachers for immediacy and concreteness, innovations have to be accessible and beneficial for teachers and students in both an immediate and long-term way. Change does not always equal progress, especially if it is not practical for teachers or systems.

Clarity, Quality, and Practicality

Two elements of practices that affect clarity and quality of implementation are size and the complexity issue described above. According to several large studies of implementation, the larger the scope of change and the more personally demanding it is, the greater the chance for success (Crandall, Eiseman, & Louis, 1986; Fullan, 1991). Although size and complexity may initially deter a potential adopter, in the longer term the greater the teacher effort and energy expended in implementing a new practice, the greater the potential outcome. Small innovations often do not succeed in the long run because they are not perceived to be worth the effort or because teachers cannot distinguish the innovation clearly enough from other practices. On the other hand, innovations that are too large require too much of the organization as a whole and frequently result in distortion or partial implementation to make them manageable. In essence, "the greatest success is likely to occur when the size of the change is large enough to require noticeable, sustained effort, but not so massive that typical users find it necessary to adopt a coping strategy that seriously distorts the change" (Crandall, et al., 1986, 26). In short, innovations must be practical.

One way to improve clarity in innovation use and to reduce the potential of distortion employs the concept of Innovation Configurations (Heck, Stiegelbauer, Hall, & Loucks, 1981) or Practice Profiles (Loucks & Crandall, 1981). This method outlines (1) core components of the change developers believe is required if desired results are to be obtained and (2) related components which enhance the operation of core components or increase the likelihood of achieving desired goals. It also lays out implementation requirements and the necessary resources, such as user knowledge and skills, or materials and equipment, which may be required to implement the change. A profile checklist also can be used to explain the innovation to users and to design strategies addressed to support specific components. Profiles also may help evaluate the *fit* between the innovation and the teacher and the school more accurately, allowing the school to adapt components, as necessary, or determine what adaptations are likely to affect goal outcomes. Assessing implementation requirements is critical to ensuring that the resources necessary to implementation are in place and whether the system is ready to give the support demanded by the innovation (Crandall, et al., 1986).

Processes: What Makes Change Work

Strategies

Strategies to support the understanding of innovations are as important as support for individuals working with the innovations. Such strategies need to be directed at a number of factors at once. It used to be the case that simply announcing the change was considered the same as implementing it. Successful change, however, requires a long-term process of action, refinement, and support to clarify and to integrate innovation use. When we talk about process, we mean those factors that go into the three phases of change (see Figure 2). They are (1) *initiation*: deciding on an agenda and beginning work; (2) *implementation*: putting the innovation into action, in context; and (3) *institutionalization or continuation*: seeing the innovation in place and integrated into the daily life of the school. Going through these phases can take three to five years for stable implementation and predictable outcomes.

At any point in this sequence, the direction of the process may be altered, resulting in adaptations to the innovation or even in dropping it. The more lock-step, "technical rationality" approach to change would see this as undesirable, though occasionally inevitable. In fact, a "hyperrational" approach, which views change in terms of "what should be changed" (Wise, 1977; Fullan, 1991) often acts as a barrier to setting up an effective process of change, given the nonrational quality of social systems (Patterson, Purkey, & Parker, 1986). New views on change look at this process and the events within it as opportunities to improve goals and outcomes for the health of the organization — systems, teachers, and students alike.

Both the change process and the people involved in it go through something like developmental stages. Different kinds of activities are needed to address each stage. At its simplest, an image of this process can be configured around Hall & Hord's (1987) Stages of Concern model: early in the process, activities need to be addressed to personal issues, then to management tasks, and, later, to refinement issues. Implementation and organizational requirements for resources and support also must be considered early in the process. Involving teachers early on in problem identification and task-related strategies, such as peer coaching for skills, helps develop commitment. True commitment, however, is usually the effect of seeing outcomes occur, not the cause. "The commitment of teachers increases as they simultaneously see themselves master the practice and perceive that their students are doing better" (Crandall, et al., 1986, 34). Finally, the organization has to provide resources, ongoing training and coaching, and monitoring to nurture the immediate process of implementation (Hall & Hord, 1987). Strategic conceptualizations like these provide facilitators with a starting point.

Another way to begin is through the use of *temporary systems* — project groups, task forces, consultative relationships that "...at some more or less clearly defined point in time will cease to be" (Miles, 1992, 9), but which support the change through the process of implementation. These temporary groups have the advantage of being able to define themselves and are often more egalitarian and experimental than the organizational environment around them. These kinds of bounded groups become a model for the management of change, so that "...creative attention given to the invention and use of new types of temporary systems could show very high payoff," Miles stated in 1964 (1992, 10). As they form new norms within the *team*, they are often able to influence the norms around them to good effect. When the team disbands, members have new skills they can contribute to other projects.

Research and Organizational Themes

Research on temporary systems has influenced thinking on the management of change, including what the organizational environment should look like. With that as a given, enter the reality of larger, multilevel efforts for change. Here other factors come into play, including nonrationality, or non-linear effects in the process. Research suggests that activities directed to some broader but consistent *organizational themes* also have a positive effect on a change process (Fullan, 1991; Louis & Miles, 1990). Organizational themes include:

- Vision building, or the capacity of the school to develop a shared vision of what the school and its change should look like. When this shared purpose is

present, schools are better able to build consensus and credibility through the use of symbols, public dialogue, and the example of those for whom the change makes sense.

- Evolutionary planning, closely related to the first theme, embodies the capacity of organizations to "take advantage of unexpected developments in the service of vision" (Miles, 1987, 13). "Have a plan, but learn by doing" (Fullan, 1991, 83).

- Initiative-taking and empowerment allow leadership to come from a variety of sources, including cross-hierarchical steering groups in contact with other groups with similar interests. This, the basis of collaborative work cultures that reduce the professional isolation of teachers, increases the potential of social progress to support implementation. As one gains the recognition of one's peers, incentives to succeed increase.

- Staff development and resource assistance are often seen as start-up training for innovation use, not as a continuing process. One of the least developed yet most important elements of staff development is follow-up. New conceptions, skills, and behaviors require continuous, interactive, cumulative learning to be fully taken advantage of. *This means in-service must happen all the way through the process of implementation, not just at the beginning.* Fullan describes it this way:

> "Implementation, whether it is voluntary or imposed, is nothing other than a process of learning something new. One foundation of learning is interaction. Learning by doing, concrete role models, meetings with resource consultants and fellow implementors, practice of the behavior, and the fits and starts of cumulative, ambivalent, gradual self-confidence all constitute a process of coming to see the change more clearly" (1991, 85).

- Monitoring, problem-coping, and restructuring the change process are just as important as measuring its outcomes. This is in part an information issue: information about what is working can be shared, while information about what is not working can serve as a stimulus to *problem-coping* — arriving at solutions that make sense. This is another form of Miles' *process analysis* (1992) — shared, self-analytic behavior, "a sort of sustained mindfulness that leads to further diagnosis and action taking" (Miles, 1986, 6).

Needless to say, perhaps, evaluation is always a delicate point. Getting monitoring right requires sophistication and trust. In this context, restructuring refers to how the school as a workplace is or is not organized to support change, which includes policies, organizational arrangements, roles, funding, availability of time to hold meetings, and demands on teachers

and other staff. Working with innovation may require that the organization change to make the change work.

Interactive Change

The change process being described in the above themes is interactive and complex. While these themes may be a part of all three of the phases of process — initiation, implementation, and institutionalization — they are especially in demand during the implementation phase, when most of the learning about change occurs. It also is the phase requiring the most *person* support, in group and one-on-one consultation and coaching, in order to *problem-cope* as matters progress. This is the time to hang fast and wait for group consensus, cumulative learning, and critical mass to have an effect.

Institutionalization

The last phase of the change process, *institutionalization*, has its own requirements. Institutionalization depends upon change becoming embedded in the context and structure through policy, budgets, and timetables; and through generating a critical mass of administrators and teachers skilled in and committed to change (Huberman & Miles, 1984). While *institutionalization* may seem to connote a final phase, it actually is difficult to complete. In fact, evidence suggests that, rather than support institutionalization, organizations tend to enter a process of *renewal*, which may result in either tailoring the innovation to more current needs or to replacing it as emphasis is given to yet another change. Institutionalization succeeds best when all phases of the change process are considered at the beginning (e.g., how will funding be maintained for ongoing inservice activities and needed materials?).

The "Bottom Line"

Rather than implementing single innovations, schools are beginning to develop their capacity for continuous improvement as a generic skill, based on changing needs and new programs. This is not to say that successful innovations should not be continued, only that they should be viewed in terms of their relevance to renewal and to the improvement of practice, not just in terms of mastery. The single innovation approach often has benefits in mediating the chaos of change, especially early in the process. The "bottom line" to any change, however, is how it fits within the organization, since it is organizational health that will make the longer-term difference. Educational reform is largely a local process wherein central support is vital; effective linkage systems between leaders, facilitators, and users within a system are essential; and wherein emphasis is on continuous evolution, with a focus on classroom practices and outcomes (IMTEC, 1992).

Policies: Supporting Change

How change is supported through policy can make the work of those implementing the change more or less difficult. Good policies can make people more flexible and they can clarify directions and priorities, help focus people, and validate whatever is going on.

Focus on Policies

The focus of policies should be on the people and activities that put the change into action. Questions that must be asked include: If policies are not in place to support those kinds of things, what policies need to be in place? What kinds of linkages are there and what linkages need to be developed? How will finances be found to actually make the necessary changes? The goal of policies should be directed toward whatever it takes to develop the desired outcomes, given the social reality of various systems.

Generally, when we are discussing policy issues, we are talking about administration and organizational linkages. What has been said about change as it affects people, practices, and processes now takes another turn as we consider what it takes to support and maintain strategies related to all of the above. This can be discussed at a number of levels — the school, the district, the state, and the nation. The conditions for success remain the same at all levels: administrative support is vital to change, and policy decisions make and break change efforts.

Learning to Support Local Schools

The issue for upper administration (district, board, ministry, state, national) is learning to support local schools in their efforts: "...in other words, how to make demands on, support, encourage, empower, enable, and build a strong local school" (IMTEC, 1992). Supports within the system must be built around the real needs of the schools in development. One of those supports is assessing necessary linkages beyond the school that contribute to the school's work. Another support is developing easy relationships across the system.

Learning to Support System-wide Initiatives

Policy can support system-wide initiatives and learning as well as local projects. Fullan and Hargreaves (1991) make a number of recommendations for school systems: (1) develop more trust and ability to take risks as a system, especially in the selection, promotion, and development process; (2) foster increased interaction and empowerment in the system; (3) give the curriculum content back to schools; and (4) restructure administration to meet current needs. Such recommendations emphasize the need of systems to develop connectedness and real empowerment — the sharing of power with students, with teachers, and with principals. Rosenholtz (1989), in studying what makes a difference in the capacity of schools to deal with change, found that "moving" schools to action placed a great deal of emphasis on the selection of good personnel and on learning opportunities for all. Moving districts to action might mean considering the same criteria. Collaborative cultures may emerge in such schools, but they still require support at the district level, in the spirit of interactive professionalism laced with cross-school and cross-district contact.

Teachers, parents, and students are more likely to develop commitment and collaboration around issues of local interest. Whether the solution to local concerns comes from the inside or from the outside, the process and the potential power of interaction across levels remains the same. The task of local districts is to "...set goals and standards to provide funds,

research and resource materials and the means to achieve those goals" (Fullan & Hargreaves, quoting Michelle Landsberg, 1991, 103). The specific goals, once the framework is established, become an agenda for the school.

The Use of Assessment in Change

Besides clarifying and supporting changes after they are implemented, assessment can be a major contributor to the change process itself. At the people and practices level, once individuals are comfortable with assessment or monitoring materials as problem-solving or problem-coping devices, assessment can play a role in making the change more practical and workable. At the process level, various forms of assessments and monitoring tools (e.g., those of the *concerns* model) can help facilitators learn how to work with individuals or help temporary systems teams understand the effects of their efforts. At the policy level, assessments have the potential to determine where linkages and support are most needed and to validate ongoing efforts as a part of continuous improvement.

The Dual Purpose of Assessment

Assessment serves a dual purpose in the process of change, and may be considered part and parcel of a specific innovation — for example, finding the best way to use portfolios, reflective strategies, or student monitoring worksheets effectively and training people to use them. Assessments may at the same time be part and parcel of the innovation process, helping to check on progress. In a reflection of the restructuring movement of the last few years, schools are more and more engaged with changes that involve both process and content assessment. This duality acknowledges that however good a change is, it is still a change, and people will need time to learn about it and learn how to use it to clarify their work.

An Example of Change

The restructuring of a high school in northern Ontario (Stiegelbauer & Anderson, 1992) offers one example of the use of assessment strategies embedded in the innovation and implementation of change. Like many other schools in the United States and Canada, this one faced budget cutbacks that potentially meant the loss of a number of programs the school staff and board saw as important. They decided to find another way to organize their school so that they could keep these programs.

The result of their efforts is a student-centered high school called Project Excellence, which puts teachers in the role of student advisors, subject monitors, and coaches for student learning. Students, on the other hand, completed course units, were tested for mastery at the end of each unit, were coached by teachers if they had problems, and participated along with teachers in the design and implementation of the program as it evolved (Anderson, Stiegelbauer, et al., 1989). Monitoring and assessment were essential in determining how to implement the innovation and also were part of the implementation process. During the first three years of implementing and clarifying the innovation, teachers, administrators, and occasionally parents and students met bi-weekly to assess, adjust, and maintain consensus

about what they were all doing. The result is a restructured school that works, proving that monitoring and ongoing assessment are an important part of how and why it works.

Project Excellence is only one example of people working together to apply assessments and relate those assessments to other aspects of school life. Whether the use of assessment is narrow or broad, related to a specific curriculum or part of a larger change process, some kind of reflection and monitoring can only facilitate change. A cautionary note, however — many people have had negative experiences with assessments in the past or see assessment strategies as compromising their own independence as teachers. Working on this issue will probably be part of the change process, and an important one at that. Unless people see assessments as beneficial to them and understand how to use and apply them well, assessments will not have their greatest possible effect on change. People, in effect, must **want** change to work.

Summary and Propositions: Change has Changed

Key research on the *do's and don'ts* of change suggest that, rather than developing a new strategy for each change, systems must engage in continuous improvement. Instead of seeing change as distinct from other events within a system, systems must learn to view change as a part of everyday reality.

The emphasis of change used to be on the management and implementation of single innovations — one teacher, one classroom. The new emphasis, based on the research of the past 20 years, is on developing systemic capacity for change. In this framework, change is part of a continuous learning process for educational professionals. Strategies for working with change can benefit from the work done on managing single innovations. At the same time, however, specific change efforts offer opportunities for different kinds of interactions that contribute to a kind of organizational learning that develops the whole system, not the teacher-implementor alone.

As part of the new paradigm of change, we look at change differently. I borrow here from Fullan and Miles' 1992 article on "Getting Reform Right," paraphrasing a bit:

- Change Is a Journey, Not a Blueprint. Rational, planned change is certainly helpful in the beginning, but in work with people in schools on implementation projects, there inevitably comes a moment when something happens. Perhaps it is the "implementation dip," perhaps it is a change in personnel, but whatever it is, it means diverting from the plan and changing what is being done. If we think about the process of change as a blueprint directing us from point "A" to point "B" to point "C" as in figure 2, its a little harder to see a diversion as an opportunity. When we believe from the beginning that the process of change is a journey where detours, interesting villages, or waterfalls are potential opportunities, then change is not so intimidating. Matt Miles, in his AERA presentation (1992), reminded us that when you have groups of people working on things together, you have the capacity for a journey.

Collaborative work not only provides a problem-coping focus, but also the support to make the risk taking more rewarding.

- Change Is Systemic. Change projects are often initiated to solve one problem without looking at the relationship of that problem to other issues in the school or the overlap of personnel and resources that will be a part of all that the school does. Having a larger vision for the school or system puts change in perspective regarding where the school or system is going and how resources can be shared to get it there. Any major reforms in complex systems such as schools, school districts, or boards need to build structures and capabilities at all levels. "Ad-hoc solutions will not work in the long run; only institution-building based on sustained commitment works" (IMTEC, 1992).

- Change Is Learning; Reform Is Risky; Resolution Is Uncertain; Problems Are Our Friends. On a journey through change, you may get where you are going, but sometimes you get somewhere else. You may get waylaid for a couple of years. All of that opens up opportunities for different kinds of learning and different ways of accomplishing a desired effect. It is always a little risky to be open to opportunity, yet from the perspective of learning, it has advantages. Thinking about change as a learning process opens the door to opportunities to reframe, look at results differently. Taking on unexpected problems and finding solutions to them creates the capacity to continue to do so. "Deep coping," as Fullan and Miles state, appears more likely when schools are working on a "clear, shared vision of where they are heading" and when they create an active coping structure (such as a temporary group) to tackle problems and focus energy (1992, 750). Know ahead of time that no journey is without problems.

- Change Programs Do Not Run Themselves; Change Is Resource Hungry. Change will eat up as many resources as you want to give it. You need people, you need money, you need supplies, you need special facilities, you need time. Ongoing resources are an important part of making change work. Looking at innovation in terms of discrete changes makes this kind of resource management all the more imposing. On the other hand, looking at the bigger picture, developing capacity for management, and seeking overlap help to manage this resource problem. The more linkages, relationships, and networks that you can develop between parts of the system, the more likely it is that you will have effective problem-coping management. Linkages develop commitment, help with resources and support, empower and train people, and provide personnel for facilitation and leadership. They provide support for the substantial effort which needs to be devoted to such tasks as checking on progress, keeping everyone informed of what's happening, linking with other change projects, and solving problems. In schools where change succeeds, these kinds of activities occurred more frequently than in other schools (Fullan and Miles, 1992). You cannot assume that change will come into being, other than in name only, without this kind of work.

- All Large Scale Change Is Ultimately Local Implementation. If it does not work at the school or classroom level, it is not going to work at the system level, no matter how good the idea or the innovation. When you have individuals who are able to work with the change, no matter what its source--mandated or locally developed -- you can get schools and systems working with the change. Evidence says that the school is the center of change and focus on classroom practice makes change meaningful to teachers. It is the school's vision and collaborative work that put the change in action; the qualities of the change which demonstrably address real classroom issues give momentum to that action. Schools do need the support and commitment of other levels for a top-down, bottom-up balance, but change has to happen in one place, the place where the most work must occur.

- Changing the Culture of Institutions Is the Real Agenda. Finally, the new perspectives on change have a different agenda from the earlier, technologically-based frameworks. When we are talking about change, we are talking about new ways to deal with education and its institutions which better allow us to address problems and find solutions on a continuing basis. New ideas on change see this as an issue of constant learning for all, not a one-shot implementation effort. These ideas on change also emphasize the value of collaborative work in the process of change, work that institutionalizes the interaction between different levels and participants in the system, that is addressed to both global and specific concerns, and that respects all elements of the system for what they can contribute, not for what they conventionally are.

For change to be effective, we have to find new ways of interacting as human beings in organizational settings. Any innovation, such as performance assessment, can serve as a starting point. These new ideas on change are even more complicated than the old ones and making them work requires a new mind-set and a different style. In tandem with that complexity are two givens: change is a constant and "wishful thinking and legislation have a poor track record for social betterment" (Fullan & Miles, 1992, 752). Understanding the factors that influence the success and failure of change opens the door to a fresh approach and "...is the best defense and the best offense" (Fullan & Miles, 1992, 752) for improving schools.

The following guide to change implementation (Figure 3) is a summary of the central ideas contained within this paper. Its intention is to provide the reader with an easy-to-use reference to the most important elements in the process of innovation.

Figure 3

Change Has Changed: Guidelines

PEOPLE: The Most Important Element in Change

- Change is a process, not an event. While mandates have a role, it is the long-term process of engaging and supporting people working with change that will make the most difference.
- A variety of roles play a part in any change process. These roles can add up to consultative and interactive processes that support not only a specific change, but strategies for any change.
- Change is a highly personal experience; people respond to change differently.
- People go through developmental stages related to the self, to management or task, and to the refinement of change in relation to student results. Understanding these stages will help facilitators address individual needs and interests, as people work with a specific change.
- Change involves adaptations in behaviors, practices, skills, and often beliefs about what is important and valuable. People often experience initial work with change as a loss of what they do well. Finding ways to combine their areas of strength with what is new will promote comfort with change.
- Teachers are guided by a *practicality ethic*. They want to know that a change has practical outcomes for themselves and for their students.
- Success in facilitating change requires pressure and support from leaders and one-on-one interactions with teachers to solve problems and to support innovation.

Figure 3 (Continued)

Change Has Changed: Guidelines

PRACTICES: Need, Complexity, Clarity, Quality, Practicality

- Practices must fit into teachers' situations, be clear, and include concrete how-to-do-it information.
- Practices must demonstrate clear benefits for students.
- Change is not always progress; practices must be relevant to local needs, concerns, and adaptation.
- Too small or too large an innovation may result in no change at all. The greatest success occurs when change requires noticeable, but manageable and sustained effort.
- Change affects not only teachers, but schools and school systems. Practices need to be viewed in relation to other practices and to system goals.
- Change in practice requires change in behavior, skills, attitudes, beliefs, and frequently, ways that people work with one another. Each one of these is a kind of innovation in itself.
- Examining new practices in terms of core components, related components, and implementation requirements can help in determining fit and in designing implementation strategies.

Figure 3 (Continued)

Change Has Changed: Guidelines

PROCESS: What Makes Change Work

- The process of change involves three phases: initiation, implementation, and continuation. From the beginning, all should be considered in planning.
- Organizational themes contributing to successful change include developing a shared vision, evolutionary planning, providing for initiatives, empowerment, ongoing training, developing strategies for problem coping, analysis, and restructuring organizational norms to support implementation and ongoing learning. These themes are interactive and interwoven throughout the process of change.
- The social reality of systems undergoing change creates a nonrational and nonlinear setting wherein unexpected events should be viewed as opportunities for growth and for a redefinition of goals.
- The change process goes through developmental stages related to the concerns of individuals working with change: personal, management, and the refinement of work. Strategies need to be addressed to these concerns as part of the innovation process.
- Commitment is an effect of change, not a source. Individuals become more committed as they develop mastery and see student results.
- Temporary groups, assigned the creative responsibility of managing change, help develop new relationships and new learning within the organization, as well as more focused activities related to change.
- Process takes time (as much as three to five years of effort). Planning for funding and strategies need to consider this time frame in designing efforts to support change.
- Continuation needs to be considered early in the process to develop longer term strategies for funding and training new staff.
- The broader agenda of change is the development of an organizational capacity to respond to changing needs and conditions. The goal is not mastery of a single innovation but ongoing learning and the development of collaborative work cultures.
- Change is a local process, where effective linkages and experimentation contribute to bettering classroom practices.

Figure 3 (Continued)

Change Has Changed: Guidelines

POLICIES: Supporting the Change

- The focus of policy should be the development of organizational supports and linkages that enable schools to improve.
- Districts and schools can improve system capacity for change through selecting good people and providing them with opportunities to learn.
- Change requires the interaction, connectedness, and the sharing of power across different components of the system. Empowerment means giving people responsibility and support to actualize that responsibility.
- The presence or absence of supportive policies can make or break a change effort.
- People will be more committed to changes that are of local interest to them, whether those changes come from the outside or from the inside. Change as a local initiative should fit within system goals and priorities, but still address local needs.

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Time for Teachers in School Restructuring

Joseph Cambone

Time for Teachers in School Restructuring

"We need more time to do the work of restructuring our school." Repeatedly we hear this plea for more time in proposals, reports, and presentations on myriad efforts to alter the ways in which American schools structure their activities. Classroom teachers are finally faced with the exciting prospects of school revitalization, and many school staffs across the country have begun searching for ways to find time for teachers to do the important work of restructuring while they continue to teach. All kinds of methods are employed, from highly original released time schemes to buying more substitute time. However, even in those schools where time has been created, bought, borrowed, or stolen for restructuring work, among teachers there remains a feeling that it still isn't enough. Inevitably, the work quickly surpasses the time allotted. Time, adequate in quantity and rich in quality, is elusive. Yet, we continue to look for more ways to get it. Somehow, if we can find more time, we seem to say, we will be able to successfully meet the task of restructuring schools. Why, despite all the efforts to manage it, does time for teachers in school restructuring remain so elusive?

In this paper, I argue that without a fundamental change in the ways we conceptualize time, especially for teachers, our best efforts at teacher participation in school reform will probably wither. To date, reformers have focused their attention too tightly on ways to schedule or manage time that allow for school restructuring activities, and they have missed an important fact: Teacher time is not just time that is scheduled for them. Often externally imposed schedules actually work against teacher participation in school restructuring. Time is something that is constructed to a large extent by the individuals who live that time. Indeed, in their densely packed worklives, teachers construct their time both within and outside of the time scheduled for them, and they use that time in highly differentiated ways. There are different kinds of teacher time shaped around different kinds of teacher needs, and each kind of time is interrelated with another in much the same way as the gears of an old-fashioned clock. To understand time for teachers, we must investigate the systems and sub-systems of time that work together - or don't - as teachers manage their worklives. If we deepen our understanding of the multiple meanings of time for teachers, its construction and use, we may be better able to assist teachers in taking an activist role in school restructuring.

In what follows, I posit some different types of time that teachers construct, and demonstrate the way these time constructs mesh to form time for teachers. I begin by elaborating the most general theories about time in schools. Next, I explain the teacher constructs for time that appear in key studies on school restructuring, and the meanings of these types of time for teachers are explored individually. Using various scenarios found in restructuring cases, each of the meanings of time is tested using the metaphor of teacher time as a system of meshed

gears. My aim is to connect theoretical notions about time with documented examples in the literature of school restructuring. Ultimately, I suggest that recognition of the multiple constructs of teacher time can enable us to adapt innovation initiatives to the rhythm, boundaries, and understanding of time for teachers, rather than working in conflict with them.

To accomplish these goals, the report draws upon four sources of information: theoretical writings on the topic of time in schools; key findings and case reports emanating from research into selected types of school restructuring efforts; heretofore unanalyzed data from several of those same studies; and anecdotal evidence and personal communication with principal investigators in key studies around the country. The studies used include those conducted by:

- The National Center for Educational Leadership (NCEL), a shared investigation into school improvement between Harvard University, the University of Chicago, and Vanderbilt University. Data were drawn from 52 high schools nationwide, semi- randomly chosen because they were experimenting with shared decision making.

- The National Center for Restructuring Education, Schools, and Teaching (NCREST) based at Columbia University. Data were drawn from an evaluation study of a planned intervention in shared decision making at 12 schools, conducted by the New York City Teacher Centers Consortium of the United Federation of Teachers.

- The National Center of Innovation of the NEA Mastery in Learning (MIL) project. Data from this study are being compiled as an evaluation of a four phase process in school reform being piloted in 31 schools in 14 districts. Additional data were drawn from the School Renewal Network, a computer bulletin board used by participants.

- The Coalition of Essential Schools Data were taken from ongoing reports of the School Ethnography Project (SEP) which has studied the work of eight charter schools in the Coalition since 1986.

- Reports from the National Education Commission on Time and Learning (NCT&L) which is studying the feasibility and wisdom of extended school day and year programs.

Some Useful Theories about Time

Time is relative, as Einstein said and every school child can tell you. But what exactly does that mean? Even though it is an easy fact to memorize, it is a hard concept to understand, given that the Western world, and the United States in particular, is so biased toward living by the clock (Keyes, 1987). In our day-to-day existence, we tend to forget that time is largely a collective subjectivity - an agreed upon convention that allows us to structure our lives temporally. Though our notions of time are subjective, they are strong nonetheless, and

it is wise to analyze time carefully before we tinker with it. When we try to rearrange time as school reformers are wont to do -by changing the order of activities, adding more minutes to a period, or changing the purpose of a given time slot - we end up adjusting a phenomenon that people use to structure their thinking, indeed their very being (Heidegger, 1962). Thus, to restructure people's time is actually to restructure their thinking and being.

To understand time, we must understand the meaning people attach to it. For the purposes of this discussion, then, it is useful to review time for teachers using three general theoretical lenses: the personal and social construction of time; time as a variable in learning and teaching; and time as a political variable. As we will see, these lenses by no means exhaust the possibilities for analysis, but provide a starting point for the discourse on the time dilemmas of teachers.

The Construction of Time

Time can be constructed in three general ways, and each construction can coexist with the others. Time can be constructed rationally, phenomenologically, and cyclically.

Technical-rational time

When we discuss time for teachers in restructuring, we usually are referring to technical-rational time. Once the desired ends of an activity have been determined, the means for reaching those ends can be designed scientifically and administered rationally, according to this line of thinking (Apple, 1983; Habermas, 1970; Schön, 1983). Regarding time in schools, Hargreaves writes that technical-rational time "is a finite *resource* or *means* which can be increased, decreased, managed, manipulated, organized, or reorganized in order to accommodate selected educational purposes" (Hargreaves, 1990; p.304). Thus, as problems in school organizations arise, it is believed that time can be altered administratively to meet those needs: schedules can be changed to accommodate fewer periods, the school day can be extended, collaboration time can be scheduled into the day. It is this way of conceptualizing time that has dominated the means by which reformers seek to construct time for restructuring schools.

In schools attempting shared decision making, such as those in the NCEL and NCREST studies, usually one of the first orders of business is to find time to meet; in schools revitalizing curriculum, time must be found to conduct research and to develop plans; in schools that focus on pedagogical change, like the Essential Schools, means must be found to extend the learning periods. With the exception of extended school day or year programs, the resource of time must be increased and managed within the confines of pre-existing time boundaries, and administered with no small amount of precision.

The notion that time is a commodity or resource that can be managed toward desired outcomes looms large in the thinking of reformers and school personnel alike. Once time is made for an activity, the expectation is that the activity assigned that slot will be accomplished. But there is ample evidence suggesting that this is not always the case and time assigned to a task is not always used for that task. Hargreaves (1990) points out that, in

schools he has studied, the time scheduled for teacher collaboration was not always used for such; and he cites a study by Campbell (1985) that demonstrated that time set aside for collaboration in some schools was often used by teachers to relax or to do personal business.

We will see that time is not always used for its administratively intended purpose for a panoply of reasons. Teachers and administrators construct time somewhat differently, given their differing needs, work, and preferences. It is the subjective experience and use of time that often foils its technical allocation.

Phenomenological time

Phenomenological time may be described as lived time. It is the subjective experience of time "where it has an inner duration which varies from person to person" (Hargreaves, 1990; p. 307). For school people, it can be captured in that experience of time that makes a 45 minute detention study hall longer than a class of the same clock duration spent with 25 highly motivated students. Phenomenological time is also intersubjective: the reform-minded administrator may experience the time elapsed in implementing a new plan as considerably longer than the teachers who were asked to implement that plan (Werner, 1988). Thus, both the subjective and intersubjective construction of time play a key role in how school people come to understand time in school restructuring.

Our construction of time is intimately connected with the work we do. Much teacher activity is made up of a variety of concurrent tasks. The busy elementary teacher who is juggling her relationships with different children, asking and answering questions, setting individualized tasks, and making the myriad decisions such teachers make in the course of a day, experiences time in what Hall (1984) refers to as a *polychronic* time frame. Polychronic time is characterized by doing several things at once, the completion of transactions, a high sensitivity to context, and an orientation toward people and relationships. Hall, an anthropologist, shows that polychronic time frames are common in smaller organizations, Latin and Amerindian cultures, and among women.

In contrast to the polychronic time frame is the *monochronic* time frame. Those who work within this time frame tend toward linear arrangements of activities. There is a low sensitivity to context and an emphasis on the completion of tasks, schedules, and procedures. Such time frames are characteristic of Western cultures, large organizations, and males (Hall, 1984). The busy school administrator may be likely to organize his or her time in a monochronic time frame. Indeed, the larger U.S. culture places extraordinary pressure on administrators of all kinds to use time efficiently and in a linear way - in essence to become the "one minute manager" (Blanchard & Johnson, 1982).

It is in the juxtaposition of these two subjective time frames that we begin to see the kinds of difficulties that can arise in school reform efforts. The differing conceptualizations of time held by teachers and administrators may be closely linked to the kinds of work they are called upon to do. While administrators often conceive of time as a commodity that can be managed to render tasks complete, teachers' work is highly context-dependent and individualized. In these differing time frames Hargreaves claims, "can be seen much of the

reason for the apparent failure of administratively imposed reforms in education" (Hargreaves, 1990; p. 311). He offers examples from his study of preparation time for teachers to demonstrate how these two time frames can conflict. He explains instances where administrators scheduled time for teachers to "collaborate" without reference to the compatibility of the people that have been co-scheduled, or to the utility of that particular collaboration. Similarly, teachers may be scheduled to collaborate at times of day that they would prefer to use for doing other tasks - to phone parents or copy materials, and the like.

The polychronic time that teachers spend in highly complex social interactions takes considerable concentration and effort to sustain. In the dense activities of their days, teachers often sense time passing quite rapidly. Csikszentmihalyi (1990) has demonstrated that people deeply involved in a project often enter a state of "flow" where time seems to pass unnoticed, and concentration is extraordinarily deep. Scientists, artist, and performers of all kinds talk of this phenomenon when they realize that they were so involved with their work that an hour or three has collapsed into a few moments. Although many teachers do not describe their experience as one of flow, some often experience accelerated time in their classes when a demonstration or discussion "takes off" and student, teacher, and subject work in concert, only to be interrupted by the period bell. The "flow experience" is one of synergy between self and activity, and it is not an entirely foreign experience to teachers.

A different perspective on phenomenological time, that of public and private time, is explicated by Zerubavel (1981). Although public time for teachers is regulated by union contracts and by the conventions of the school day, teachers must still devise quite personal ways to delineate that time which is private and public. When and for how long a teacher will spend time grading papers, preparing lessons, counselling students, writing recommendations, or chaperoning school activities on a Friday night are decisions that depend on how teachers understand and construct their private or public time (Sizer, 1984). Zerubaval writes, "Time functions as one of the major dimensions of social organization along which involvement, commitment, and accessibility are defined and regulated in modern society" (Zerubaval, 1981; p. 141). The internal rules by which teachers regulate their private and public time have a bearing on whether they will relinquish any private time for school restructuring activities.

Cyclical time

Connelly and Clandinin (1990) have studied the work of Zerubavel (1981, 1985) on the sociology of time and applied it to schools. Principal among all of Zerubavel's points is that "the world in which we live is a fairly structured place" (Zerubval, 1981; p.1) and that the structure of sociological time is cyclic. Connelly and Clandinin (1990) argue that the characteristics of these sociotemporal cycles are important if we are to understand time in schools, and the resistance that is engendered among school personnel when a change in schedules and calendars is implemented.

A key characteristic of sociotemporal cycles is that they have strong, resilient boundaries; in schools, the demarcations of the beginning and endings of periods, school days, and school years provide good examples of the boundaries that cannot be transgressed without incident (Connolly & Clandinin, 1990). Often, such boundaries are invisible until they are crossed.

But in examples later in this paper, we will see that extending the school day and year, or changing the schedule of the day violates these boundaries and can have a remarkably upsetting effect on the lives of school people.

Sociotemporal cycles also have structure; they have beginnings, middles, and ends, each with some sort of routine and ritual. In schools, the day begins and ends in particular ways, with both students and teachers performing quite specific tasks. Teaching periods have their structure, as do semesters, and full school years. Changes in these structures are often difficult to make. For instance, changes in the times when homeroom takes place in high school, or instituting a school-wide program that requires everyone to read silently at 9:00 a.m., can disrupt sociotemporal structures of the day.

These sociotemporal cycles overlap, and many different cycles run concurrently. Annual, semester, monthly, weekly, and daily cycles all overlap in the life of a school, and the overlapping may vary by the job that one has. An administrator's cycles may overlap in ways that are quite different than a teacher, whose cycles are quite different from her students' cycles. Nevertheless, these varying yet overlapping structures, played out over time, lead to a strong sense of regularity and a deeply embedded sense of cultural rhythm in schools. Connolly and Clandinin (1990) point out that a sense of ritual and routine characterizes sociotemporal cycles in schools in a most important way. When one realizes that many overlapping, highly structured cycles are routinely at work in schools, it comes as no surprise that schools are as resilient to across-the-board changes as they are despite valiant efforts to do so.

As for the actual cycles in schools, Connolly and Clandinin (1990) identify ten: annual, holiday, monthly, weekly, six-day, duty, day, teacher, report, and within-class cycles. Each varies in duration, sequence, temporal location, and rate of occurrence. They also differ for participants in school life. For instance, the administrator is most likely to concern herself with monthly cycles because of monthly reports of attendance or lunch receipts. However, monthly cycles do not usually impact classroom life, where other cycles hold sway (Connolly & Clandinin, 1990). Similarly, the daily cycle of schools differs for students, teachers, and administrators with each keeping schedules different from the other.

Important to our discussion of teacher time in restructuring is understanding that school life is deeply cyclical, and that there are strong and enduring characteristics of the cycles that help to define school culture. Participants in schools derive meaning from the way time is structured and used, and they come to rely on its regularity and predictability. In allocating time for restructuring work, it is important to keep this in mind. It is wise to avoid creating time that is orthogonal to the cycles of time that are deeply embedded in the culture of schools, for such culturally invalid kinds of time will often end up being unused or extinguished in the day-to-day life of schools.

Time as a Variable in Learning and Teaching

In addition to how time is constructed, it is important to look at how time is used. For teachers, time is mostly used for teaching; in the case of restructuring, it is also needed and

used for learning new ideas and ways of working.

Learning time

Restructuring requires a fair amount of time for school people to learn new concepts, skills, and attitudes. But learning new ideas or ways of working is largely a volitional activity for adults, in the sense that adults can avail themselves of new situations or ideas, or willfully avoid them. Unlike an infant or toddler whose fascination with her environment grows as her neurological capacity grows, the adult teacher is not always so fascinated, not always easily induced to engage with new ideas. Certainly the time that is scheduled for adult learning isn't always used that way, and we can easily find evidence of teachers doing any number of "off-task" activities at in-service training, faculty meetings, or other venues meant to teach some new idea or skill. There are many possible reasons for such inattentiveness, and issues of time are among them. What kind of time is needed for adult learning? Of what quality and duration should it be? And in which contexts should it be offered?

Useful ideas for trying to understand what it is that transpires when adults must learn new management, curriculum, or pedagogy concepts, can be found in the work of Carroll (1985) and Berliner (1987). Although their work has been largely concerned with predicting and controlling how children and youth learn in classrooms, the concepts of *allocated time, engaged time, time-on-task, aptitude, perseverance, and pace* are worth considering in terms of adults, nonetheless. Applied generally to such teacher learning activities as committee meetings, faculty meetings, in-service, and retreat, these ideas seem crucial for understanding how change can be affected in the cognitions, and hopefully the actions, of teachers.

Allocated time is the time scheduled for the learning activity, measured usually in minutes per day, or hours a week or year. Theoretically, this is time over which participants have the least control, created as it is through administrative means. Engaged time is the amount of time when a participant actually gives attention to whatever is being presented. Such attentiveness is differentiated from time-on-task, when a participant is engaged in a specific kind of task related directly to an outcome goal of learning. Berliner (1990) defines aptitude as the amount of time a person needs to learn under optimal conditions, where perseverance is the amount of time someone is willing to spend on the task. Pace is the amount of content covered in a given time period.

Later, when learning time for teachers involved in restructuring is elaborated, we will see that it is often most difficult to engage teachers in learning about restructuring. It takes considerable time for them to become receptive to ideas, to thrash out ideological differences among themselves, and to actually attend to the tasks at hand. Moreover, because the tasks of restructuring challenge the ways in which teachers have been taught to think (Weiss et al., 1992; Cambone et al., 1992), they are often challenged beyond their ability to persevere. The time it takes for teachers to learn the ropes of restructuring is substantially longer than many teachers, or administrators for that matter, are willing to give.

Curricular or Instructional time

The concept of curricular time is a difficult one to unpack, because it deals with the way time is allocated, by whom, and the way the time is used for instruction. This time is different than the time for learning teachers might need in restructuring efforts. Rather, this is the time they need to teach children.

Ben-Peretz (1990) writes of curricular time as a variation on Berliner's (1987) allocated time, but where such allocations are prescribed by curriculum developers or in some cases by school boards. In Ben-Peretz's formulation, curricular time is not planning time, per se, but the time a teacher has to teach what is assigned for that day. A curriculum guide may suggest that a particular topic be taught in a 45 minute period, for instance, with 15 minutes spent on a warmup activity, 20 minutes on presentation, 10 on review, etc. In some ways, curricular time is the quintessence of technical-rational time, where the conception of the curriculum is far removed from its execution (Apple, 1983). Curricular time that is planned a priori by the required use of basals, texts, and courses of study rankles many teachers. Frequent complaints can be heard regarding the inherent insensitivity to student learning and teacher intelligence that is built into such time.

While teachers may lament the loss of control they have over how much time they can spend on certain topics, it is also true that they demand their time to teach curriculum, regardless of who designed the curriculum originally. Teachers covet their curricular time, and many claim they simply close their classroom doors and teach what they think needs to be taught - be it a variation of the material required, or something else entirely. Regardless of the source of the curriculum, teachers want and need the time to do it. One reason teachers are reluctant to involve themselves in restructuring activities is that it removes them from teaching and limits their curricular time.

For those teachers who have the freedom to design their own curriculum, curricular time can be construed as the time it takes to conceive, research, and plan units or lessons. Teachers can design their own curricular time instead of having it crafted for them, but it comes with a cost in time that would usually be spent privately or doing other tasks. As we shall see later, this kind of curricular time is more often found outside of the teaching day or week. Teachers use Saturday mornings, weekends, and summers (Boles, 1990; Lieberman et al, 1991b; Muncey & McQuillan, 1991). Curriculum designed in this way is then piloted in instructional settings by teachers, and revised as data are returned on the effectiveness of instruction. Curricular time in this sense is planning, development, and instructional time combined.

Political time

Hargreaves makes the point that in physics we have come to accept that time is relative. The fixed notion of time is a human invention and convention that we have agreed to and "most of us unquestioningly organize our lives" around it (Hargreaves, 1990; p. 312). In a discussion in which he draws an analogy of physical time to political time, he cites explanations of relativity offered by Hawkings (1988), explaining that time slows as we approach the speed of light; it also runs more slowly as we approach a massive body like the earth. He then compares these phenomena to those who are close and far from the action of

classroom life: Those far from it perceive time to go slower than those in the thick of it. The analogy uncovers the subjective experience of participants in school reform as one imbued with politics. Those at far point from the action of schools are often administrators or planners; those close to it are the actual implementors of the desired change. The administrator's impatience for discernable change often brings about pressure upon teachers to move faster and produce more.

> From their distant standpoint, they [administrators] see the classroom not in its densely packed complexity, in its pressing immediacy, as the teacher does. Rather, they see it from the point of view of the single change the are supporting and promoting...a change which will tend to stand out for all the other events and pressures of classroom life. Administrators see the classroom monochronically, not polychronically. And because of that, the changes they initiate and support seem to move much to slowly for their liking (Hargreaves, 1990; p. 314).

Of course, even the teacher who is in full support of a particular program change will, in the course of her polychronic day, have her concentration drawn into myriad other problems and interactions. She will consider administrative timelines to be too aggressive, and Hargreaves claims that the teacher will work to slow things down so she can sort things through and integrate her classroom efforts. This can result in administrators becoming more impatient for implementation, and subsequent calls for acceleration of the change process. In turn, the teacher slows down even more, and the political battle is engaged (Hargreaves, 1990; p. 314).

This clash between administrators and teachers over how teacher time will be used, and how quickly it is used, highlights the role of power and politics in understanding time for teachers in school restructuring. Reformer or administrator notions of how teachers ought to be spending their time are often at sharp variance with how teachers prioritize and use their time. When reformers attempt to carve time out of the teaching day for restructuring meetings, they bump up against the curricular time of teachers. If only a little time is taken, there is hardly any resistance from teachers; but if the pressure for time away from teaching duties intensifies (Apple, 1982, 1983), reformers will meet with considerable resistance and a slowing of the reform process. Of course, the administrator can require that more time be used despite the resistance of teachers. Such is the prerogative of the powerful, monochronically-oriented administrator, and may be the nature of time as a political variable.

The way time is distributed among school personnel is another way in which time is a political variable in restructuring, and reflects power relations in schools. Hargreaves (1990) argues, and the data from restructuring studies bear out, that higher status academics, such as English and History, often get greater curricular time allowances, larger staffs, and consequently more political clout. In one high school in the NCEL study, for instance, informants claimed that the English department had the largest share of curricular time, faculty, and most importantly, power in restructuring itself. This department revamped its curriculum offerings to be on a quarterly credit system instead of the district-wide semester system. They accomplished this with the blessing of the principal, who approved of this change mostly because it was finally an indication that some shared decision making had occurred. The loud protests of the guidance department did little good, even though the resulting transcript format

and credit calculations were incongruous with the rest of the district. It was left to guidance counselors to transpose English department credit into the district format.

Political relations in schools are also apparent in the ways in which the vast majority of teacher time is scheduled for classroom work. Teachers have been traditionally tied to the classroom, which is considered the significant work of teachers (Hargreaves, 1990). When a teacher is called away from teaching in order to plan or consult, her status increases. But the status comes with a price, and time away from teaching responsibilities engenders conflicted feelings in teachers and administrators alike. Teacher's involved in restructuring often talk about their guilt over not using their time correctly when they are away from class for meetings, or when they must get a substitute.

There are other political prices to pay. In the Coalition of Essential Schools studies and some of the NCEL school cases, we can read of teachers engaged in high profile programs where they are given fewer students to teach, more time for planning, and fewer conventional school duties (Cambone et al., 1992; Muncey & McQuillan, 1991). The political fallout was significant when colleagues construed that their own time was not as valuable as the specially- treated teachers. How much time a teacher spends in classroom work is very significant to American teachers, tied as it is to issues of equal and fair treatment.

Thus, despite reform rhetoric to the contrary, it is still understood that teacher time is to be spent in direct contact with students, teaching in classrooms for most of the day. This is particularly true for elementary teachers, whose largely feminine teaching force spends almost all of its time with students. Much of the temporal infrastructure of schools has been built around this tradition of direct and sustained contact with students; and teacher understandings of their power, status, and efficacy are intimately linked to that infrastructure. When teachers are asked to devote time to activities that have not been part of that tradition, as they are in restructuring, it necessarily creates substantial disequilibrium (Cambone et al., 1992). In efforts at school restructuring, it appears to be paradoxical to ask teachers who have been thoroughly socialized into one type of political relationship to engage in new political affiliations - without changing the temporal infrastructure that supports the original power and status relationships.

The Multiple Meanings of Time for Teachers

When the data from the present studies in restructuring were analyzed using the theoretical constructs for time in schools described above, there emerged nine ways of viewing time for teachers in the context of restructuring. They are, in no particular order, *student time, teaching time, learning time, innovation time, managed time, administrative time, cyclical time, political time*, and *experienced time*. These are simultaneously experienced time constructs through which life is lived in schools; in fact, it is the nature of time for teachers that different aspects overlap and interact with each other constantly. What will become clear as explanations unfold is that each construct points to at least one other, and sometimes many other, kinds of time for teachers. That is, turning the gear of one kind of time for the teacher necessarily turns another interlocked gear or gears, like in an old-fashioned clock.

Multiple gears of time are turning for the teacher in an average day, in what appears to be a polychronic experience of time: A teacher meshes student time with teaching time, while somehow managing to find time for photocopying, calling a parent, and arranging a doctor's appointment for her daughter. The teacher is on the move, both physically and intellectually, shifting her attention from task to task, trying to give each the kind of time that it needs, in the amount that can be afforded. Many teachers have a highly developed capacity for meshing their different time requirements into a well-oiled routine.

Yet frequently, the teacher finds herself overloaded with demands for her time as the needs of students increase, the marking period ends, or the winter holidays approach. Sometimes she is so overloaded that she experiences "timelock" (Keyes, 1987), where the different gears of her living clock grind to a stop, her ability to attend to her tasks is diminished, and almost nothing gets done. It is always a challenge for teachers to keep the demands of their time in precise balance, living as they do in multiple and overlapping time constructs.

Into this already delicate balance, the time demands for restructuring schools have been added. Is the kind and amount of time needed for these activities compatible with time for teachers as it is presently constructed? Can a new sub-set of gears be added to teacher time without disrupting the entire mechanism? If so, how? And if not, what can be done?

Time for Students

Most teachers choose their careers in hopes of spending time with students. In fact, students are the people with whom teachers spend the balance of their time, and they are a prime source of teacher energy and despair. Each interaction between a student and teacher takes concentration and teachers use tremendous energy to sustain student time. In the teacher's polychronic day, many such interactions take place, often in tightly packed succession and most often during time originally set aside for teaching. The nature of student time appears to differ somewhat among elementary, middle school, and high school teachers. As children grow older, their teachers appear to expect that the time they spend will be less related to a student's social and emotional needs, and will tip more toward an intellectually-based relationship. In the NCEL interviews particularly, teachers mention how they are frustrated at having to deal with outside issues of students when they want most to be using their time for teaching.

For high school teachers, student-teacher time is enhanced or diminished by the daily or weekly schedule - the cyclical time of schools - which allows room for interaction outside of teaching time. Again, the NCEL study provides a good example. In a Maine school (grades 7 through 12), teachers have been assigned advisees that they retain through all 6 years at the school. Protected time is built into the schedule for teachers with their 12 advisees every day. Teachers consider this a nearly sacred part of the infrastructure of the school, a sociotemporal ritual that helps them maintain the shape of their work in classrooms, and throughout school life.

There are a number of examples of time for students in the studies. Similar student-teacher interactions are reinforced in most Essential Schools, where teams work to reduce the number of students they teach to no more than 80 so that more time can be spent with teachers and

students working together. In one alternative school in the NCREST study, Delancey Street Preparatory, the SDM team helped the school rearrange the schedule so that two hours every Wednesday afternoon were set aside for students, with one hour for activities and one for mentoring.

However, as important as student time is to most teachers, it can be exhausting time. The more a teacher becomes involved with a student, the more thinking and planning goes into the relationship. Some Essential Schools teachers found that the workload increased tremendously as they switched their teaching to be more student-oriented. This affected their private time and their ability to manage their preparatory time, as well.

It is also true that as the social, emotional, and behavioral needs of students increase, it appears that the hats a teacher wears multiply too. One teacher in an NCEL school speaks for many teachers when she explains that she has become social worker, nurse, police, and parent for her students in addition to being their teacher. She has begun to bring those student problems home with her, and her student time has begun to corrode private time.

Each of these examples of student time interlocks with other kinds of time for teachers: The cyclical time of schools, its boundaries, structure, and rhythm, are changed when more student time is sought; the private time of teachers must be redesigned in some cases; the time that teachers have management control over, such as preparatory time, also changes. In the Maine school, student time was part of the original design of the school; but in the other examples, finding more student time required careful consideration of the other kinds of time that were impinged upon.

Time for Teaching

Teaching time is the actual doing of instruction, a different way of construing curricular time, discussed above. It is comprised of the hours teachers spend in their classrooms, labs, studios, and workshops trying to engage students in learning. This is a huge portion of teacher time, and is a matter of considerable debate regarding the ways it is constructed, how it should be used, and who has control over it.

Some view teaching time as a commodity that can be manipulated to increase student performance. As I've already mentioned, in efforts to extend the school day or year, one of the issues that arises is how teachers can find more effective ways to stay on task so that more teaching happens in the time allotted to it. But educators cannot come to consensus on what constitutes the tasks of teaching. Some teachers would differ with those who consider teaching time to be the equivalent of instructional minutes. They say, for instance, that the time spent interacting with students about their social and emotional growth is as much a task of teaching as teaching math, science, or reading (Cambone, forthcoming). Such teaching time resists measurement in minutes, and is hard to structure instrumentally, even though it is shaped within the allotted time. It is time crafted from inside the experience of teaching and learning, and is created by the teacher in interaction with her students and the material under study (Cambone, 1990; Hawkins, 1974; Latus, 1988).

Teaching time is a distinctly personal investment for teachers and they tend to covet it. For this reason, we often see struggles among teachers and reformers over teaching time: some want to extend it; some want time away from it for other professional activities; some will not involve themselves in restructuring activities expressly because those activities require time away from their core activity. Teaching time has always been what has defined the American teacher, for good or for bad. Teachers are caught in the paradox of being isolated from others by their time teaching, while seeing their strongest results with students borne of intensive teaching time.

In a discussion on the NEA network about one district's plan to increase teacher's non-teaching time to 50 percent, one correspondent alludes to this paradox for teachers. Some teachers in his district, elementary more than secondary he says, are

> ...in a panic over this one....teachers [were] very concerned about spending any more time than they do already away from their kids. A high school administrator then said [to them] that they really have to learn to let go a little, for their own good. It is important to take care of themselves. Staying isolated in a classroom is not the most healthy thing to do, either personally or professionally (School Renewal Network, 3/10/92).

Part of the concern of elementary teachers over being away from their students may be found in the amount of overlap they experience between teaching time and student time. The developmentally-oriented elementary school is qualitatively and quantitatively different in the amount of time that is spent on the fundamental socialization of children. Thus, teaching time for the elementary teacher, and increasingly for the middle school teacher, is constructed to allow time for this phenomenon. This time is different than it is for a high school teacher, who likely spends more of his teaching time transmitting information. But, it is not just socialization that is at issue for elementary teaching time; often the whole teaching enterprise is different, and time is constructed accordingly. One teacher on the School Renewal Network recalled that her fondest memory of teaching was in a multi-age classroom where she had the same children for three years. Referring to herself as much as the children, she wrote

> I found it amazing how much we were able to slow down and relax -to think and to dream. I read aloud, we drew pictures and listened to music, we sat in the grass and wrote poems on the first lovely day of spring, we hunted for frogs in the brook for hours, and one day I remember sitting silently under a hedgerow for an hour watching ants milk aphids with the kids - and we did all the content stuff we had to do, too....I think I taught at least four years worth of curriculum in three years - and I believe it was the atmosphere of unanxious expectation that great things would come in their own time...(School Renewal Network, 6/09/92).

Each teacher has had some moment like this, and it is intoxicating. The moments differ for teachers in mood or substance, depending on what they teach and at what level. But teachers work tremendously hard for those kinds of moments, and so teaching time becomes almost a sacred thing. It is also idiosyncratic to the individual teacher. After all, teaching is a craft,

and the time that they make and use is part of that craft. Seasoned teachers, particularly, can be somewhat pugnacious when they are exhorted to use their teaching time differently than they have in the past, especially if the suggestion feels like a university-initiated recipe for time usage. The so-called effective teaching variables (Brophy & Good, 1986; Rosenshine, 1979), however useful in their pure form for helping to shape teaching time, will invariably be adjusted by the veteran teacher to meet her requirements for time.

Perhaps these idiosyncrasies about their time explains why some teachers resist the changes in teaching period length suggested by many school reformers. In the NCEL interviews, a number of teachers discussed how reformers at their schools attempted to modify the day to create longer class periods. They met with considerable resistance from their colleagues. One teacher finally confessed that he and his colleagues were actually frightened by the idea of double periods. They had no idea how they would actually use the time; after so many years of crafting their teaching time to fit 50 minutes, they could not conceive of how to craft it to 100 minutes. Teachers in Essential Schools experience similar challenges when they attempt to extend periods to do more project-oriented work. Changing the amount of teaching time implies a change in their pedagogy, which in turn, requires a reordering of notions of curricular time. One teacher balked at the idea of having students do more project and library work. She realized that she didn't have the time to generate the new curriculum and teaching plans that would facilitate such learning, and such an effort was going to take more time (Muncey & McQuillan, 1992b).

As with each construct we will discuss, teaching time meshes with other portions of time for teachers. In the present instance, we can see that teaching time is constructed differently by different teachers, even when they have the same amount of minutes to use. How teachers craft time is a matter of personality, preference, and cognitive style; in other words, a teacher's use of teaching time mirrors to an extent how he thinks. Of course, one can argue that the effective teacher ought to be in the service of teaching students to think; this would require that the teacher adapt his or her teaching time, and hence his or her thinking, to what students need to do their best work. But to change teaching time implies that teachers will need more learning time; changes in thinking don't come easily to anyone.

Further, we can see that elementary teachers will necessarily differ from high school teachers in the way they construct teaching time because their time is used for substantially different purposes. The nature of the work is different, and the cycles of time differ in elementary school. The boundaries between first period Earth Science and fourth period British Literature, clear and strong in most high schools, are more easily blurred in the elementary room as a read-aloud experience with *The Very Hungry Caterpillar* (Carle, 1989) is woven together with a hands-on experience with metamorphosis, and the making of 25 construction paper butterflies for a class mobile.

The careful reformer will not mistake teaching time as the same for all teachers. Nor will they mistake teaching time as a single variable that has scant relationship to other aspects of teacher time. At the very least, teaching time is linked to the time teachers spend with students, the cycles of time in schools, a teacher's subjective experience of time, and the time they manage as they do their work.

Time for Learning

Without a doubt, teachers involved in restructuring need time to understand new concepts, learn new skills, and to develop new attitudes and tolerances. One person writing on the NEA School Renewal Network says it well:

> ...I have been hit with the reality that not only is it difficult to change paradigms to accept change, but it TAKES TIME. Time for researching, time for discussing, time for assessing, and more time. There seems to be an overwhelming amount of ideas for change, not only in structure and governance, but also in teaching and learning innovations, technology, and the philosophy of education....I'm beginning to wonder how this is going to take place when in reality our time is already "overspent" in teaching, planning, conferencing, etc. I agree with [the] statement that "reform cannot be carried out in the spare time of teachers" if it is to be effective (NEA School Renewal Network, 1991).

If time is needed for adult learning, how do we find that time, and what might be the characteristics of that time? Adult learning time in schools can be sliced two ways. It can be time that is allotted for the purpose of learning, say in the form of a workshop, an in-service, or even a course; or it can also be the time that it takes - weeks, months, years - for a person to experience and digest new ideas or ways of working.

In terms of time allotted for adult learning, Berliner's constructs for learning time (1990), offer one avenue for deepening our understanding. Usually some sort of time can be allotted in schools for teacher development, but it is unclear how individuals will actually use that time. For this reason it seems that of all the variables Berliner describes as part of learning time, the concepts of engaged time is particularly salient. Engaged time, the amount of time a participant actually attends to the learning presented, is one of the most difficult things to engender in teachers attending school-wide in-service or planning meetings. It seems very hard for teachers to focus on complex ideas when they get short bursts of released time from their regular work. For instance, some Seattle teachers in the NCEL sample talked at considerable length about how little attention they were able to give to restructuring meetings. Full-day and half-day sessions had been arranged once a month by the team of school leaders to focus on a variety of topics in small action groups. Teachers reported how they grouped with their friends and allies, and although they did some work, they mostly socialized. When learning time is allocated for teachers in the middle of their teaching time, it often used as respite from the routine of schools, not for learning.

How hard and for how long teachers are willing to persevere at the task of learning about restructuring is also an issue in learning time. Many participants find themselves quickly discouraged by how much attention to group process must be paid in order to generate long-lasting products (Cambone et al., 1992; Lieberman et al., 1991b; Muncey & McQuillan, 1992a; Weiss et al., 1992). It is hard work learning the skills of conflict resolution and consensus building. Not everyone is willing to commit to it. In one NCREST school, some members of the SDM team were highly task-oriented, and they rushed forward to implement changes without a full consensus with fellow members, and against the warnings of their

facilitator. Eventually, the team came to a standstill, with the group divided equally on some important issues. To their credit, they realized that they had ignored good advice, and had made important errors in group process. They persevered by returning to the beginning of the decision-making process, and again moved forward (Lieberman et al., 1991b). But many teachers are not so willing to persevere at learning, and find the whole process to be thoroughly disheartening.

The pace of learning, how quickly new information is brought to teachers and how quickly they digest it, appears to play an important role in their learning. Learning time for teachers is a developmental process, as it probably is for us all. A phrase used in schools across the country is "buy-in," and it seems closely related to the developmental learning process for teachers. If this phrase is unpacked, we find that it refers to the process of first coming to understand the concepts presented in restructuring proposals, to next wondering how they differ from past "innovative" suggestions, to weighing them against one's own values and experiences as a teacher and a citizen, to waiting until some initial results are in, to testing some ideas for oneself, and then to giving one's support, however limited, to learning more and trying things out for oneself. What complicates this process most profoundly is that buying in to reform is not purely an intellectual process, but a social and emotional one, as well. I and my colleagues have argued elsewhere (Cambone et al., 1992) that teachers have long been socialized into thinking and responding in particularly timid ways; many teachers are unsure of how to use their strengths and abilities in the larger arena of school life. In the context of school reform, it will take teachers a long time to unlearn their wary attitudes toward traditional school authority, to develop a strong sense of professional identity, or to willingly take responsibility for school- wide decisions. Teachers, taken as a group, are a reticent lot, and many have good reason to be.

Of course, merely allowing time and experience to unfold does not bring about specific learning outcomes for teachers, nor anyone for that matter. There must be significant investment in adult learning as a goal, like at the Green Valley Essential School described in the SEP studies. Over a ten year period, the principal and staff have reorganized the school schedule, instituted an advisor-advisee program, lowered the dropout rate, and changed the school discipline policy. Investigators point to the principal's enthusiasm and vision, but also his investment in teacher learning time. This is reflected in his commitment to professional development activities for teachers, including the use of the summer to plan the upcoming school year, but also in such activities as encouraging teachers to keep journals. He collects these journals each week and reads them twice - once for understanding and once to respond (Muncey and McQuillan, 1992a). Allotting and managing time to conduct these activities must be a difficult task for teachers and principal, alike. But these examples highlight both the process time and the pace of learning that can stretch over months and even years.

Finally, learning time for teachers cannot be separated from the content that they are encouraged to learn. This content, as the teacher in the quote that led this section states, is complex in the extreme, and spans a wide group of interrelated topics. The structure and governance of schools, teaching and learning innovations, educational technology, and philosophy of education, not to mention adult behavior, are each fields of study in themselves to which people dedicate their entire thinking lives. It is small wonder that teachers need quality time

in copious quantities to encounter different ideas, test them, reflect upon them, and experiment with them in their practice.

Bird and Little argue that "considerably more time for these activities [of learning] should be made in the normal school day, either by addition or by the elimination of activities that are less important" (Bird & Little, 1986; p. 504) However, it appears in the studies reviewed here, that allocating time for teacher learning is not as effective when it is integrated with teaching time, student time, and the standard cycle of schools. Brief forays on Tuesday afternoon into topics of school governance or curriculum reform just do not do the trick. Adult learning time appears to need more breathing space that can't be found in the brisk tempo of the regular school day or week. It requires room for reflection, experimentation, and deep discussion. Some schools appear to have begun to acknowledge these facts. One NEA school, for instance, has been thinking about making a commitment to provide its teachers with 50% of their time as non-instructional time by the end of the decade (Watts & Castle, 1992). Ostensibly, some of this time will be put aside for professional learning.

Learning time seems to mesh with innovation time, discussed next, and some schools in the studies have begun to see the double benefits. Often a big leap in understanding and skill improvement comes when a team of teachers gets away to focus on restructuring as a topic all by itself, unimpeded by the time constraints of the work day. While many of these times encroach on teacher's private time, happening as they do during weekends or summers, most teachers report that it is time well spent. Subsequent work is done more easily.

Time for Innovation

There appears to be a pattern of behavior among teachers suggesting that in order to be innovative, creative, free to try new ideas, they must be away from the time and place of schools. Prolonged release time, retreat time, and summer work time are all venues that schools in the various studies have used with success. Discussing this phenomena in the schools they studied, the NCREST investigators write, "In all cases, team members reported how important the retreats were to their work. As one said, 'It is a time when we can actually work through major problems and have enough time to do it'" (Lieberman et al., 1991a; p. 14). Evidence from Essential Schools also shows that teachers benefitted from symposia, conferences, retreats, and prolonged workshops.

This need for special, uninterrupted time to innovate is not surprising in light of the phenomenology of teacher time. While working every day in a polychronic time frame, teachers are focussed on the interactions among students, and between themselves and students. Part of a teacher's mind is engaged in the curriculum and teaching she is doing; part is wrapped up in managing her administrative, planning, and duty tasks. For many teachers, part of their thinking is concentrated on how they can keep control and safety in their classrooms. Of course, for some teachers, as the pressure of the day mounts, the adrenaline that courses through their bodies pushes them to heights of creativity in their pedagogy. But many teachers cannot find the creative space in their packed days to think big thoughts, toss around creative plans, or do the detailed work that will change their school's governance, curriculum, or schedules. Most teachers, on most days, are fully engaged in implementing, not

innovating.

As with learning time, innovation time for teachers is usually sandwiched in between all of their other tasks. The correspondence among teachers in the School Renewal Network provides a good example of the dilemmas this creates for teachers. There are a number of descriptions of how they have squeezed an hour or so out of their weeks for innovation. There are elaborate plans where teacher aides carry out prepackaged art and exercise programs so that teachers can be released to plan; substitute time is used to free up teachers in groups; teachers bank their time by teaching longer days, 4 times a week. On the fifth day, they spend their time in collaboration (School Renewal Network, 1992). But Watts and Castle claim that such efforts are tinkering with, and not necessarily transforming of, schools. They write that these efforts are like "building an airplane while we're in the air" (Watts & Castle, 1992; p. 7).

As I mentioned at the top of this discussion on innovation time, some schools actually land for awhile and do the redesign work on the ground. The schools studied by NCREST, and the Essential Schools that were able to survive, share the planful use of retreats and time away from school to think and work. The Maine school in the NCEL study carried out a yearly outdoor challenge week for its entire teaching and non-teaching staff just before the school year began. Teachers found this invaluable for building teamwork skills, trust, and confidence in each other.

In most schools though, innovation time must double up with planning time. However, day-to-day planning is a substantively different endeavor from innovation, much like building the plane while aloft. If teachers are to do the important work of school redesign, they need the research and development time to do it. Constructing that kind of time, and adding it to the current mix of time constraints, is indeed a daunting task.

Managed time

Managed time is what we usually think time is when we think of time at all. Everyone participates in some form of managed time - either as the manager or the managed - throughout most of the workday. We cannot adequately discuss how teachers find time for restructuring without first asking how they manage the time for work they already do. Before any tasks of restructuring are added, teachers already must manage paltry amounts of time to do preparation, grading, faculty meetings, hall duty, study hall, parent conferences or calls, extra help after school, for sorting and filing student work, talking to the speech and language specialist about Maria's bilateral lisp, attending IEP meetings, getting the AV equipment ordered, and tracking down, photocopying, or making dittos of materials - all above and beyond their teaching time, and all in the context of a school schedule that is managed by someone else. It is not surprising that a teacher's ability to manage time is so important to the work of teaching, that states require student teachers be evaluated on whether the are competent at managing their time before allowing them to be certified.

Of course, teachers only manage their time to an extent, given the school schedule. As one NEA teacher said and many teachers would agree, "The schedule is GOD. You can do any

innovation you want in your classroom as long as you don't mess with the schedule" (Watts and Castle, 1992; p.4). The daily, weekly, semester, and yearly cycles of school time are decided by others, and not managed by teachers. It almost goes without saying, that the way time is scheduled in schools is intended to meet administrative and institutional needs but not necessarily the teaching and learning needs. This is not surprising, nor is it illogical. The time that teachers can manage for themselves is completely constrained by the boundaries of the schedule, which in turn is constrained by the sociotemporal cycles of schools. A teacher simply cannot decide that 7:30 until 10:45 are his most productive teaching hours, and 11 to 11:45 is the best time for grading papers. Too many overlapping schedules -student's, specialist's, classroom teacher's schedules - must be coordinated if there is any hope for order and purpose in the school.

Individual teachers are constrained by the larger school schedule, but even when teachers try to organize into clusters and to manage their time collectively, they often run up against time constraints imposed by the larger school culture. Particularly at the high school level where students might want to take second language courses and other electives, cluster programs founder as they try to accommodate student scheduling needs. The constraints aren't always derived from the lack of available hours. For instance, Essential Schools have adopted the philosophy that "less is more" partially in response to the ways that having too many choices dilutes student learning in any one discipline. The less is more philosophy helps with scheduling students in alternative schools, where the four core subjects (mathematics, English, science, and history) are the predominant offering. However, while scheduling issues are diminished, the political implications of dividing time between so few subject areas constrains how far teachers can go in managing the scheduled time (see *Political Time*, below).

The grand schedule of schools is remarkably resistant to change, and so in order to get their work done, teachers exert considerable control over time in class, between their classes, at preparatory and lunch periods, and before and after school. High school teachers have quite a lot of control over the way in which a class period will unfold, for instance; elementary teachers can control the flow of their entire day - up to a point. Teachers control whether they use a preparatory period for preparing, meeting with another teacher, or arranging for their car to be serviced. Teaching time, student time, and other managed time all must coexist, and somewhere in the day everything they are required to do to keep life running smoothly must be done. For the conscientious teacher, this means using up some private time to finish work. In *Among Schoolchildren* (1989), Tracy Kidder describes Chris Zajac sitting after dinner at least a few nights a week grading her student papers because in her busy day, there simply was not enough time to do all the work. This image is familiar to all teachers. In my own experience, my first principal and mentor taught me that my weekend ended and my job really began on Sunday evening at 5 when, like it or not, my thoughts would turn to planning and preparing for the next morning.

Administrative time

Into this already packed worklife, teachers have added the tasks of restructuring. The two new tasks that seem to surface most often throughout the literature are management meetings for activities such as strategic planning, decision-making teams, and site-based management

groups - and co-planning periods for teachers to collaborate on teaching plans. Administrative time is relatively new to teachers and finding it is particularly difficult. Teachers and administrators have tried to buy, borrow, and even steal time for the administrative work they want to do. But little real progress has been made at satisfactory solutions, for each new arrangement of time bumps up against another need teachers have for time. Mostly, administrative time is being shoe-horned into the existing ecology of teacher time, and it has upset the entire system.

It is, however, exciting and even exhilarating work for many teachers. For instance, at the Stephen Day School in the NCREST study, a group of reluctant teachers became excited about SDM as a result of a week-long student counseling and orientation program they had successfully planned and implemented. The team and staff felt they had finally taken some control of their destiny. But it was not without cost, "We're dying now because there's *just no time* to handle all our regular duties and responsibilities as well as these new ones - but we're dying with smiles on our faces" (Lieberman et al., 1991b; p. 6).

Teachers have mixed feelings about their struggle to find administrative time. It affects their teaching time, as well as their student time. One teacher wrote about the guilt she feels leaving her class to do her administrative work.

> Last week as we went out for our Steering Committee meeting, my students said, "Another meeting Mrs. H-?" I replied that it had to do with school concerns and one student said, "Don't be so concerned." I know where they're coming from. I haven't been sick, but I have been out for staff development workshops....In the long run it all will supposedly benefit the students, but what about doing my job which is to teach (Renewal Network, 2/14/92)?

In a school described in an NCEL study, a collaborative team of elementary grade teachers met periodically on Saturday mornings in order to avoid being out of their classes too often. The team was made up of three general teachers and one special education teacher. They collaborated around almost every aspect of their teaching, including such things as their literature curriculum, instructional groupings, or behavioral and learning problems of individual students. The Saturday morning meetings were crucial, even though during the week they had bought collaboration time with grant money that brought specialists into their classrooms to teach (Boles, 1990).

There is clearly no way that teachers can successfully do all they are asked to do, and all they want to do, in the current schedules of schools. To have more administration time, they must - at least - reinvent the school schedule and their current means for time management. Teachers are experimenting with a variety of methods. After examining the correspondence from the School Renewal Network, Watts and Castle (1992) listed some of the strategies that teachers have employed to resolve these dilemmas. Some faculties have freed up more time from the constraints on the school day through early release, team teaching, administrators teaching on occasion, and the use of parents. Some schools have actually altered the school calendar or day to accommodate new blocks of time. In other schools, new time has been purchased using grant money, substitute funds, or staff development monies. For the most

part, teachers have only succeeded in juggling time within the confines of the existing school cycles. As long as the tasks they must accomplish as teachers remain the same, and the schedule constraints remain the same, teachers will not be able to change their managed time. Without a change in their current managed time, they will never find adequate administrative time. Even at one of the most successful SDM schools in the NCREST study, a key finding was that "those interviewed pointed out that the combined responsibilities of creating new programs while teaching the old ones were draining, perhaps to the point that they could not both be managed well" (Lieberman et al., 1991a; p. 28).

There may be some promise for finding administrative time for teachers by extending the school year or day. This will happen only if policymakers, parents, and other stakeholders in schools are willing to redistribute teaching time in order to make more room for administrative time for teachers. Until recently, the Federal government advocacy for increasing instructional time for students had been quite strong, and will take precedence over time for teachers. Without a change in that emphasis, it seems unlikely that the extended year will provide the needed time for teachers. Whatever the case, a change in the length of the school year implies a change in the more than just the cycle of schools, but in the entire community.

Cyclical time

When educators speak of the "culture" of schools, they are speaking in part of the cyclical time of schools. The rhythm and tempo of school life shape the activities and the meaning of school: Certain activities take up certain measured units of time in clearly delineated sequences. Class periods repeat until they become days, which become weeks, semesters, and years. The most grand cycles are those that mark the end of elementary school, middle, and high school. The public school cycle is, for most children, a twelve year cycle embedded in a larger set of social cycles. Twelve cohorts of children are involved at different stages of their school cycles during each year. Each of those cycles is tied to other aspects of the epicycles that each teacher, student, administrator, and parent lives out within their school experience.

The culture of a given school can be felt in how well the cycles of people and institution are synchronized to work in smoothly overlapping ways. In schools where there are striking discontinuities in the cycles - where false fire alarms happen frequently and intercom interruptions are just expected, where students skip classes frequently, or where not enough teachers are assigned, or absenteeism desiccates the teaching force and disrupts the cycle of classes - school culture is decidedly different than at schools where the opposite is true (Kozol, 1991). To maintain a culture that tips toward the positive, schools must be scheduled in regular, overlapping, interwoven, and highly predictable ways. It is not surprising that efforts to change those cycles - by lengthening teaching periods, instituting schools within schools, having teachers teach fewer classes, building in collaboration periods where there were none before - are met with difficulty. As one teacher said, "I think that it's very difficult to reform an institution that has been virtually the same for a hundred years" (Cambone et al., 1992).

When educators seek time to meet for restructuring activities, they are pushing at the multiple

rhythms that school people already keep, and are forcing the existing cycle of schools into slightly more disarray. We can see this difficulty arise in any number of examples:

At the Stephen Day School in the NCREST study, the committee for restructuring strove to keep membership open so as to include as many people as possible in the process. They felt this was the true spirit of shared decision making. But as the membership swelled, so too did the problems for finding time when everyone could be together. More members meant more schedules to match. But there was no common time to be found for a large group of people living out different epicycles of school life (Lieberman et al., 1991b).

Finding team time to collaborate in the weekly schedule of schools created a rippling effect throughout some of the schools in the Mastery In Learning project. Each effort teachers made for finding time had implications for changing the cycle of another person's time: Specialist's time was used to free up classroom teachers; non-core classes were scheduled at the same time so core teachers could meet. Or, the changes invoked adjustments in the actual cycle of the whole day: Time was banked every day by extending the schedule in the afternoon, and used for meeting when enough was saved; school was delayed in the morning so teachers could meet. But, shifting the daily schedule has implications for transportation time and the cycles of bus schedules or car- pools; there are implications for the cycles of family life, as parents must change their morning routines to accommodate the different school schedule.

Problems emerge when schools decide to extend the year and the cycles of the school bump up against the external cycles of the community. Schools are sometimes met with opposition from seasonal businesses in the community that rely on students for workers, and vacationing families for revenue. One man who testified before the NCT&L claimed that the effect of year round schools on the amusement park industry would be substantial (NCT&L Summary, 1992). Extended year plans also meet with resistance from teachers who find the idea entirely too disruptive to their lives as they are currently constructed. One union leader claimed that the teachers in his district would "riot" if the year was extended. Other opponents cite the negative effects of year round schooling on keeping school buildings in shape, because maintenance and repair usually take place in the summertime (NCT&L Summary, 1992). The concerns in each critique center around the effects of school cycles rubbing up against existing sociological cycles, and underline the fact that schools do not operate in isolation of the larger culture and society.

Political time

Wherever an alternative program is begun and time or other resources are allocated to its institution, issues of equity and favoritism emerge among faculty. Time and energy devoted to a new project by a principal, or any powerful team within the school, is shot through with political meaning. Of the eight original Coalition schools in the SEP project, only three remained substantially affiliated after five years. The difficulty that each withdrawn program encountered is partly attributable to the divisiveness caused among staff because Coalition members received what many considered preferential time, duties, and power.

This is also true of programs begun in one of the NCEL schools (NCEL data are a particularly rich source for political issues of time). In Colorado, a principal threw her weight behind a group of young teachers who wanted to begin an alternative program for delinquent and absent students - not a particularly popular group of students with the vast majority of teachers. The program they created was looser than the rest of the school, and students could sometimes be heard in the halls when others were in class. Senior faculty skeptics concluded that the special program teachers were not using their time well to do their jobs. What irked some particularly was that the coordinator of the new program had her teaching time reduced, and had been given an office and a phone. The politics of time and preferential treatment doomed the effort. As a senior teacher said:

> The people who tried to assume leadership around these issues [the new, young teachers] were never given that right by the others....And I don't mean formally, necessarily. I mean informally. They were never given that right to be leaders and went ahead on with that [anyway]. They can't lead anybody because they don't have folks bought in with what they're doing (Cambone et al., 1992; p.44).

The politics of time are present in discussions over how comprehensive high schools are going to manage their limited resources. Which specialty will grow, and which will shrink or be eliminated? A high school in the NCREST study had a large vocationally-based program in printing as a magnet. With the advent of computerized publishing, the draw of such a program diminished. As the school team tried to move forward with their reform agenda, it was the politics of this issue that needed to be addressed. How would resources of time and money be allocated, they wondered, now that a preparation for the printing trades was no longer a draw? A Washington teacher in the NCEL project summed up this type of political dilemma well:

> When we get into making decisions, a lot of them are based [on] political things....They are based on...what is going to help my area. I mean they are very territorial on this....Therefore, whatever is on the table people really scrutinize. How is this decision going to affect me? How is it going to affect my department? There is a real division. There even is one as far as...requirements versus electives. The electives people always want to try and stay together because they can easily get pushed out, and so there is even a division that way. There are a lot of different divisions and there are a lot of different things going on (Cambone et al., 1992; p. 41).

Politics of time are not played out among teachers only, but between teachers and policymakers or administrators. In another NCEL anecdote, a Virginia teacher complained bitterly regarding the amount of bureaucratic interference and time consuming paperwork he had to deal with from the state legislature which required documentation of what was being done in schools on a number of reform related issues. "I wish that legislators would come down and teach a day...," he said. "And then go back and legislate. Because until they've worked a day, they have no idea what they're expecting [from us]" (Cambone et al., 1992; p. 20).

Experienced time

Anecdotes regarding how teachers experience time have been woven throughout these discussions of different aspects of time for teachers. It would be redundant to rechart too much territory. But it is important to underline that the subjective experience of time - how quickly or slowly it seems to flow, its polychronic or monochronic nature, and its public and private qualities - plays a most important role in every aspect of a teacher's understanding of time.

It is particularly important to underline a worrisome quality of the comments teachers make in this sample of studies. Throughout, there are the voices of teachers who are joyful and stimulated in ways they have never been before; but even those teachers who have considerable enthusiasm for the restructuring process sound exhausted. The demands on their time simply feel too great. One very enthusiastic teacher wonders whether teacher "empowerment" isn't going to lead to teacher "expirement." As her days are becoming more packed than ever, she worries that she is not giving adequate time to her teaching, her students, and her own family (School Renewal Network, 1992). Her comment may foreshadow her own withdrawal from the restructuring effort, when she can no longer sustain the energy to engage. Indeed, the experience of expirement may cause many able reformer-teachers to withdraw from the process. Weiss (1993) points out that many of the SDM efforts at schools in the NCEL study were exhausted after 2 years of work, and that the SDM efforts and results were rendered "puny".

The experience of guilt that teachers have over their use of time for restructuring cannot be ignored, either. Many teachers in this sample talk about guilt over shortchanging students and their private life alike. In the first instance, they may well be feeling pain over separating from an old and unhealthy experience of teacher isolation, as one man quoted above has said. But guilt is not an inherently unhealthy emotion, as pop psychologists would have us believe. Guilt is often an indicator that we are not being true to ourselves, our beliefs, or our goals. In the context of restructuring, teachers are often being asked to choose between two equally important activities, teaching and school revitalization, without being given the time to do either adequately. It is an unfair choice to put to teachers, and one that could bring down the whole restructuring enterprise. In the final analysis, how teachers experience their time should be of primary concern to reformers, for any substantive change in schools hinges on teachers and their willingness to engage in that change (Sarason, 1971, 1993)

Conclusions

In this paper I have shown that simply finding more scheduled time for teachers will not induce the restructured schools we desire. Rational, scheduled time is only one of many kinds of time teachers need to do the job (Hargreaves, 1990); but unfortunately, rationing time has been the primary intervention in school restructuring efforts. Reformers have limited the meaning of time for teachers and thereby missed important avenues for restructuring schools.

Indeed, the work of teachers requires many kinds of time, and is highly differentiated. Teachers construct it and use it in ways that match the work in which they are involved.

These different aspects of teacher time mesh with each other and, in turn, mesh with the concepts of time held by administrators, the community, and the larger society. Teachers are forever working to manage an already overwhelming variety of tasks. Each task has its own time requirements, and each meshes with the others with varying degrees of ease. New tasks of school management tend to disrupt the delicate ecology of teacher time.

An anecdote taken from the NCREST data highlights how these two problems of time - the need for time for specific tasks, and the ways these types of time are meshed - can bedevil even the most successful of restructuring ventures. Recall that the Delancey Street School SDM group reorganized their school schedule to have time on Wednesday afternoons for student activities, student mentoring, and restructuring meetings. They also added brief meetings at the beginning of school for the whole staff, and they adopted a schedule for instruction that allowed prolonged periods. They initiated staff workshops, a family program, and a new interdisciplinary curricula. Moreover, evaluators found that the team had been successful in involving the whole school in their efforts. In all, they were highly successful in meeting ambitious restructuring goals. But the cost in time had been significant, and they were having severe troubles keeping up with the work their changes engendered. The reporters write:

> Some members pointed out, for example, that even though the schedule change had created times for meetings during the school day, individual schedules were still packed [cyclic time]. They found it difficult to do their restructuring work [administrative time], plan lessons [managed time and curricular time], experiment with new techniques [time for learning and innovation], engage in professional dialogue [time for learning], and participate in student activities [time for students] (Lieberman et al., 1991a; p. 11).

I have bracketed the different categories of time for teachers that I see at work with this group of able teacher-reformers. We can see that time is needed for each of their activities, but that each requires a different kind of time. Moreover, and most importantly, for these different time needs to mesh compatibly as a group, adequate time must be found, overall. Without some adjustment of either the jobs that teachers take on, or the amount of time that is allocated to those jobs, it is unlikely that teachers will be able to sustain the work of restructuring as it is currently configured.

It complicates matters that, in general, teachers and administrators may actually construct and understand time differently; as a result, each may conceptualize, execute, and evaluate school restructuring differently. Further complications arise when one considers that substantial changes in school structure often imply changes in how schools fit into their communities. The rhythms of schools and communities are interlocked. Changes that extend a school day or year, for instance, will necessarily change family tasks for teachers, parents, and children alike.

A useful metaphor for illuminating the problem of time for teachers is the old-fashioned clock: small gears mesh to form sub-systems, which in turn interlock to form increasingly larger systems. Time for teachers is a group of interconnected gears, and that system of gears

is connected to time for administrators, which in itself is a system of interconnected gears. Administrator time is connected to school time, which is woven with the time of the community, and so on. If we are willing to accept this analogy, then it follows that restructuring schools will require that we restructure time itself to some degree, and consequently, many other facets of our lives.

What, then, can be done, short of reinventing Western culture? The question is only partially facetious, given the complexity of the problem outlined here. Six rules-of-thumb for the would-be school reformer emerge from this discussion and are listed here in no particular order of importance:

First, if teachers are to participate in innovation in schools, they need special time to do it. Innovation time cannot compete with teaching time. The use of retreats and summer work groups appear to help separate out these two types of time and tasks. But extended year schemes seem the most appropriate means for finding this most important time, where portions of intercession periods could be used for innovation time. Currently though, when policymakers and administrators discuss intercession in extended year programs, they seem to see potential only for enrichment or remedial activities for students. Of course these are important activities; but it would be foolish to overlook the needs that teachers have to work at professional research and development of new initiatives and programs.

A second rule-of-thumb is to study the cyclical nature of time in a target school before changing schedules or adding more tasks. It appears crucial to understand how the cycles of time for teachers, administrators, students, and parents are constructed, and the ways the four interact. It is not easy to read the meaning these cycles hold for key players in a school, because the meaning is embedded in the life of the culture. Often, people are not aware of what meanings a certain ritual or routine holds until it is altered by others. Yet, the willing reformer can train him or herself to observe these sociotemporal cycles, if they are willing to take the time.

Third, reformers must not interfere with a teacher's time for teaching. Whatever the amount of time they have, and in whatever scheduled configuration, teachers must know that their teaching time is held sacred by everyone in the school culture. This requires an elimination of meetings held during their scheduled teaching time, and an elimination of non-emergency announcements, visits, socialization, and so on. Teachers should not be put in the position of having to choose between teaching and school governance, or anything else for that matter. Furthermore, administrators and policymakers must differentiate between the kind of teaching time needed in elementary, middle school, and high school settings. These are substantively different constructs, and cannot be treated uniformly.

Fourth, if teachers are to learn new skills and ideas, they need time to do it, and that time must be in excess of the inservice hours that are routinely allotted. Berliner's (1990) concepts of *aptitude* and *perseverance* are important in adult learning. Aptitude is the amount of time needed for learning under optimal conditions. Teaching is not an optimal condition for teacher learning unless it is matched with time for reflection, discussion with a mentor, and retesting of a teaching idea. We will never see teachers' true aptitude for learning new

skills and ideas if we are unable to provide them with the optimal conditions, that is, the appropriate time. And without that time, there is no reason for a teacher to persevere.

Administrators must examine their own constructs for time, and realize whether they are construing teachers' time from their monochronic standpoint, or from the polychronic framework of teachers. The administrator needs to develop skill at taking the perspective of teachers and experiencing their work through their eyes. Such a perspective will necessarily change the form and pace of reform efforts, as teacher and administrator negotiate the implementation of the reform effort, rather than engage in a power struggle over the effort.

Finally, we must realize that if we add a new subset of gears to the existing mechanism of time for teachers, and do not change the overall design of the mechanism, the mechanism will stop working, in whole or in part. Time for teachers in restructuring cannot and should not be shoe-horned into the existing time structure.

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New Boundaries for School-Based Management: The High Involvement Model

Priscilla Wohlstetter, Roxane Smyer and Susan Albers Mohrman

Introduction

While school-based management continues to be a priority in state and district reform efforts across the county, there is scant evidence linking SBM to improved school performance (Ogawa & White, in press; Fullan, 1993). Part of the explanation, argued by us and others elsewhere (Wohlstetter & Odden, 1992), is that improving school performance may be an unrealistic expectation for a *governance* reform that alters the balance of power within educational systems toward schools. A means-end relationship between governance and school improvement is difficult to argue in the absence of some kind of instructional guidance mechanism that sets forth the direction of change with regard to curriculum and instruction -- the technical core of schooling. Consequently, if one goal of reform is to create high performance schools, a key research question related to the evaluation of SBM is: Can SBM when combined with a push for curriculum and instructional reform produce school improvement? In other words, when a direction for curriculum and instruction is provided, does SBM enable schools to redesign themselves for high performance?

Also of interest to this research are the organizational design mechanisms associated with SBM. Traditionally, SBM policies (as well as research on SBM) have had a limited focus on issues related to power, such as how much power should be devolved to the school site and who should be the ultimate authority on the campus. However, what we know from decades of organizational research is that organizational performance improves not only when power is shifted down to lower levels of the organization, but also when those empowered are trained for their new decision-making roles, have information to make informed decisions and are rewarded for high performance (Lawler, 1986). This framework of high involvement management offers hunches about conditions that might enable schools to make changes in the way they deliver their services to create high performance. Thus, if our goal is to create high performance schools, it is arguable that the boundaries of SBM need to be expanded beyond involvement of school-level people in organizational decision-making. It should be defined as an overall approach to involving participants in the management of schools that includes in addition to decision-making power increased professional development to prepare participants for expanded roles in the governance process and in the operation of the organization. Access to information related to management and performance, and reward systems that motivate and reinforce effort to produce high performance are also elements of the high involvement model. The argument is that providing instructional direction through an instructional guidance mechanism and moving decisions into the schools are not enough.

These other resources -- information, knowledge and skills, and rewards -- will be required if school-level actors are to have the capacity to make the changes required to implement the new directions.

In sum, the research reported here, which focuses on the utility of SBM as a means for schools to generate performance-oriented changes in their instructional practices, is distinguished in two ways. First, it evaluates SBM in reform contexts where there was a push for curriculum and instruction reform, either from the state or the district. Second, the study goes beyond traditional boundaries of SBM by applying a model of high involvement, developed in the private sector, to better understand mechanisms that may contribute both to the successful governance of schools and to curricular and instructional reform in classrooms. The findings confirm the importance of expanding the definition of SBM to include aspects of the organization beyond decision-making power in order to create the capacity within schools to develop high performance. For practitioners and policy makers, this research offers practical design and implementation strategies to help schools improve their performance through SBM.

The High Involvement Framework

The recent history of SBM, under the rubric of community participation, decentralization or teacher empowerment, can be traced back to the 1960s. Then, as well as now, reformers often adopted SBM for ideological reasons as a means of democratizing schools (David, 1989; Malen, Ogawa & Kranz, 1990). Embedded in the theory of reform also was the purpose of school improvement. Through SBM, decision-making authority was extended down the professional hierarchy to stakeholders not traditionally involved -- teachers and parents -- and once empowered, these groups who were closest to the students would make better decisions and school performance would improve. Schools often were instructed to create councils of stakeholders at sites and those councils usually were vested with varying amounts of authority in the areas of budget, personnel and curriculum (Clune & White, 1988). Once councils were set up and power (at least on paper) was transferred, district offices felt they had accomplished the reform and were ready to move onto the next. Research on SBM was concerned with questions related to politics (see, for example, Wohlstetter & McCurdy, 1991).

Lawler, in work conducted primarily in the private sector, confirms the importance of power for improving organizational performance, arguing that it is a necessary but insufficient condition. Employees must have power --especially in the areas of budget, personnel and work processes -- to make decisions that influence organizational practices, policies and directions. In Lawler's framework of high involvement management, there are three other organizational resources that need to be decentralized in order for employees to have the capacity to create high performance organizations:

- Knowledge that enables employees to understand and contribute to organizational performance. Knowledge includes both technical knowledge to do the job or provide the service; business knowledge for managing the organization; and interpersonal, problem-solving and decision skills for working together as a team.

- Information about the performance of the organization. Such information includes data related to production (revenues, costs, sales, profits, cost structure); customer satisfaction; and benchmarks with other companies.

- Rewards for high performance, including adjusting the compensation structure to be aligned with the behaviors, outcomes, and capabilities required for high performance. Employees may be paid on the basis of the knowledge and skills needed in the work environment to get the job done. There also may be performance-based pay that is allocated on a group or team basis and may include, for instance, profit sharing, gain sharing or group-based salary bonuses (Mohrman, Lawler & Mohrman, 1992).

In sum, Lawler's model posits that four resources --knowledge, power, information and rewards -- create the conditions that enable employees within the organization to restructure for high performance. If SBM is viewed as a school improvement reform, Lawler's work suggests that districts need to transfer more than power over budget, curriculum and personnel to the school site. Schools, like high performance organizations in the private sector, also need to involve the school community in professional development opportunities (knowledge and skills), to share information broadly, and to reward participants, if they are to be successful at restructuring curriculum and instruction and improving school performance.

In the study reported here, Lawler's notion of high involvement management offered a framework for evaluating SBM. The suitability of the framework to schools is suggested by Lawler's findings that high involvement management is most appropriate for service organizations that engage in knowledge production; that exist in a changing environment and have complex job tasks requiring constant decision-making; and that are characterized by interdependence among tasks within the organization. All of these traits apply to schools (Wohlstetter & Odden, 1992; Mohrman, Lawler & Mohrman, 1992). Also noteworthy is the fact that such learnings from the private sector were gleaned during a time when these organizations were faced with a situation currently confronting American public schools -- namely performance that was not meeting the requirements of a changing environment, and few prospects of new money to infuse into the organization. The parallels between schools and organizations in the private sector where high involvement management has been successful argue for a test of a broader conceptualization of SBM. Application of the high involvement framework suggests that for schools to enjoy the greatest success in improving performance, power would be devolved to the school site, and there would be an emphasis on increasing the knowledge and skills, information, and rewards at the school-level. The underlying hypothesis is that, with those resources, critical conditions necessary for creating a high performance organization would be present and schools would have the capability of implementing strategies for improving school performance. This study explores the applicability of this framework by examining whether these four resources are more likely to be present in SBM schools that are achieving success in implementing curricular and instructional changes than in SBM schools where such changes are not forthcoming.

The Study

The basic research question guiding this study was whether and under what conditions SBM could provide the capacity where school-level educators would introduce changes to curriculum and instruction designed to improve performance. The research also was concerned with testing whether the high involvement model describes the conditions that enable schools to introduce improvements. Our research applied the high involvement model and examined: 1) Mechanisms that existed for decentralizing knowledge, power, information and rewards in schools and how they worked; 2) How SBM reforms combined with reforms in the areas of curriculum and instruction to improve school performance; and 3) Factors that were important to the successful implementation of SBM. We also were interested in a comparative perspective that would inform why SBM in some schools produced change in curriculum and instructional practices -- what we called actively restructuring -- while other schools in the same district were struggling and little change had occurred. This article presents an analysis of whether these two sets of schools differed along the dimensions that constitute the high involvement model. The expectation is that schools that are actively restructuring will be characterized by a greater distribution of power, information, knowledge and skills and rewards to school-level participants.

The Districts

Past research has shown that SBM is everywhere and nowhere (Wohlstetter & Odden, 1992). Everywhere because school systems all over the country are involved in SBM (Clune & White, 1988; Malen, Ogawa & Kranz, 1990) and nowhere because the extent of decision-making responsibility devolved to the school is limited (Clune & White, 1988; Malen & Ogawa, 1988; Wohlstetter & Buffett, 1992). In selecting districts for this research, the aim was to focus on exemplary SBM districts, so that the phenomenon we wanted to examine was in fact in place. Using a nomination procedure that involved consulting with university and policy researchers, federal, state and local policy makers, and practitioners including district and school-level educators, districts were identified and screened to ensure that: SBM had been underway for three or four years; significant authority had been devolved to schools; and there was a strong push (either from the state or the district) for curriculum and instruction reform.

The research reported here is based on data collected in four school districts in North America -- Edmonton, Canada; Jefferson County, Kentucky; Prince William County, Virginia; and San Diego, California.[1] The districts typically adopted SBM about four years ago; at the extreme was Edmonton where the first pilot began in the late 1970s. Schools in the sample districts generally had substantial authority in terms of the budget. They were able to some extent to decide the mix of personnel (although state law and union contracts constrained this in some districts), to carry-over some funds from one year to the next and to purchase some services from outside the district. All four districts were implementing SBM in combination with curriculum and instructional reform, but there was variation in terms of who was providing the instructional guidance system. In San Diego and Jefferson County, the state provided direction in the areas of curriculum and instructional reform. In Prince William County, the district played the key role, although curriculum reform was lagging the implementation of SBM. In Edmonton, the district through its curriculum department played the predominant role, however, the province (state) provided general goals and a broad

curriculum framework that drove local effort.

Aside from the screening criteria, districts were selected to represent a range of school-based management policies. Three of the districts we studied mandated that schools adopt SBM; the one exception was Jefferson County where SBM was voluntary and the vote to adopt SBM was a school-level decision. Some plans -- in Jefferson County and San Diego -- required site councils with heavy teacher involvement; in Edmonton and Prince William, SBM plans empowered principals, although in Prince William the principals were explicitly directed to involve teachers and the community in decisions and planning. In terms of the catalyst for reform, superintendents typically initiated the move to SBM among our four districts. However, in Jefferson County the teachers' union also played a major role: the reform was brought to the negotiating table and enacted through contract language.

In each of the four districts, we studied six schools --two elementary, two middle/junior and two high schools. At each level of schooling, we studied one actively restructuring school that had been successful in making concrete changes in the areas of curriculum and instruction, and one struggling school that was active with SBM but far less successful in making changes. This approach was taken to make it possible to examine what conditions were present when SBM led to changes in teaching and learning. The identification of struggling and actively restructuring schools was by either the district superintendent or the associate superintendent for curriculum and instruction. In most cases, nominations were solicited from area superintendents and/or curriculum specialists in the district office and the following definitions were used:

1. "Struggling schools" had active SBM governance activities in place, but had not made concrete, observable changes in their approaches to instruction.

2. "Actively restructuring schools" had active SBM governance activities in place, and had made concrete, observable changes to their instructional approaches.

In order to accommodate the study design, we focused our research in large school districts. The enrollment in San Diego was approximately 125,000 students. In Jefferson County, there were about 95,000 students. Prince William County enrolled 45,000 students and the student population in Edmonton, Canada was about 79,000 during the 1992-93 school year.

Study Methods

To gain an understanding of SBM and the conditions leading to school improvement, each district was visited by a team of three researchers for one week. During that period, interviews were conducted at the district office with the superintendent, four assistant superintendents (for school-based management/restructuring, curriculum/instruction, personnel and finance), selected school board members and the union president -- a total of about nine individuals in each district office. These interviews collected information about the state and district context, including district-level aspects of SBM and curriculum change. Site visits to schools typically included interviews with the following people: the principal, vice-principal, members of the site council (including administrators, teachers and parents), union chair,

resource specialists or selected department chairs, and several other teachers with differing perspectives on SBM and curriculum/instructional change. The interviews focused on the chronology and implementation of SBM, its form and context, and its impacts on teaching and learning, on the organization of the school including mechanisms for distributing power, information, knowledge and skills, and rewards, and on perceptions of the school district, and the involvement of various participants and stakeholders. At the district-level, a total of 38 interviews were conducted across the four districts. At the school-level, we averaged about seven interviews per site for a total of 161 interviews in 23 schools.

In addition to interviews, faculties at school campuses were asked to complete a short survey. The survey was designed as a broader check on the attitudes of the staff regarding SBM than was possible from the subset of staff who were interviewed. The survey asked respondents to rate how satisfied they were with SBM, the amount of influence campus constituencies had on SBM, how much support existed for SBM and to what extent SBM had influenced campus outcomes. Open-ended questions asked participants to identify factors that facilitated and were a barrier to the application of SBM to the improvement of teaching and learning on campus.

The discussion, which follows, reports on information gleaned from 23 schools in four districts. Slightly more than half of the schools we studied were classified as actively restructuring, based on their success in making changes aimed at improving instructional effectiveness; the other half were classified as struggling -- schools that were active with SBM but where classroom practice had not changed much.[2] Some of the changes in curriculum and instruction that had been instituted in actively restructuring schools included: team teaching; non-graded, mixed ability groups; cooperative learning; writing across the curriculum; interdisciplinary instruction, and hands-on instruction (performance events).

The methodology employed is a comparative case analysis. Researchers wrote rich case descriptions of SBM, school improvement areas and organizational features including mechanisms for sharing knowledge, information, power and rewards in each school. The cases were then examined to find patterns where actively restructuring schools differed from struggling schools in these areas. The remainder of this article describes those patterns.

Results and Discussion

Knowledge

In traditional school districts, professional development activities focus on training related to curriculum and instruction, and compared to the private sector, the investment is generally fairly skimpy. Consider, for example, that businesses in the private sector on average devote about 1.4 percent of payroll costs to training, while schools commonly expend as little as 0.5 percent of the budget on training (Bradley, 1993). As schools under SBM take over management responsibilities from the district, the need for technical know-how expands beyond content and pedagogy to include functional skills (e.g., budgeting) and skills related to SBM, such as group problem-solving, conflict resolution and time management.

Across the four districts, the teachers' contract dictated the number of staff development days

that each campus was responsible for delivering. Two of the districts we studied created new organizational arrangements to supply support services to schools. Jefferson County had extensive staff development opportunities available to schools through the Gheens Academy, the staff development office of the district, with an annual budget of more than one million dollars. The district's priority on professional development was also evidenced by the status accorded the director of Gheens -- a position that was at the associate superintendent level and in the superintendent's cabinet. Furthermore, when schools in Jefferson County voted to adopt SBM, the district provided extra money for professional development. Edmonton, Canada also offered extensive staff development through its Staff Development Office, directed by the Associate Superintendent for Consulting Services. Consultants were available for customized campus training and teachers frequently traveled to the district office for development activities, which were offered after school hours and on weekends to encourage teacher participation. Edmonton also supported a large professional library for teachers and administrators, as did the Gheens Academy in Jefferson County. Such initiatives contrast sharply with recent findings suggesting that staff development funds typically are among the first to be cut in tight budget times "because its importance hasn't been recognized and because political realities make it an easy mark" (Bradley, 1993, p. 17). On the other hand, the picture was not entirely rosy in the four SBM districts. San Diego was in the middle of significant budget problems and viewed their inability to support extensive staff development as a barrier to effective SBM implementation. Prince William County invested heavily in staff development for principals, and then they relied on principals to develop their staffs, an approach that achieved unequal success. District administrators in both these districts felt they had underestimated the extent of staff development required to support SBM.

In the area of knowledge and skill development, there were identifiable differences between actively restructuring and struggling schools. In actively restructuring schools, there was intense interest in professional development, and professional development was viewed as an ongoing process for every teacher in the school and the principal. In ratings of professional culture, for instance, respondents typically felt teachers were extremely oriented toward "continuous improvement." Such schools worked to build the capacity of the entire staff to help manage the school. School-wide staff development also helped to promote a professional community among faculty and to develop a common knowledge base among all members. The content of the training, likewise, tended to cover a wide range of areas from budgeting and scheduling to curriculum and instruction areas (i.e., team teaching, writing across the curriculum). Staff at actively restructuring schools also took advantage of opportunities to receive management training focused on shared decision-making skills like how to run effective meetings or how to build consensus. This difference was apparent even in the districts that were short on training and development resources. Actively restructuring schools in these districts were more likely to take advantage of limited district offerings and support, and to write supplemental grant proposals to get targeted training dollars from outside the district. They also solicited training support from businesses in areas such as total quality management, planning, and group process.

Struggling schools, on the other hand, had more sporadic training for staff and, beyond required development days, offered few opportunities for whole school development. Whereas actively restructuring schools often had an emphasis on bringing whole faculties together

sometimes for an extended period of time, like at a retreat for a few days, schools that were struggling tended to continue to view staff development more as an individual activity. The Gheens Academy in Jefferson County publicly encouraged schools to send cross-role teams and had a general preference for training people from the same school in groups, rather than individuals from many different schools. Professional development opportunities at schools that were struggling were more in line with findings from earlier research on SBM -- namely that training typically was too general/standardized or so narrow that it didn't speak to the day-to-day realities of the school (Johnson & Boles, in press). In sum, professional development activities in actively restructuring schools were broadened to include a larger proportion of the staff and to include a wider range of knowledge and skills than are found in traditional districts and in the struggling schools we studied. These findings complement those from a recent study of Chicago school reform where researchers concluded that successful schools had moved toward "more sustained, school-wide staff development" (Consortium on Chicago School Research, 1993, p. 26).

Traditionally, in-service training and other staff development workshops are conducted by administrators from the district office who not only deliver the training but also decide its content and timing. By contrast, in SBM schools professional development typically is a bottom-up activity where school-level actors define their own needs and how services will be delivered (Wohlstetter & Buffett, 1992). In actively restructuring schools, sources of training outside of district offerings and even outside of traditional education circles often were tapped. For example in Jefferson County, representatives from Rohm and Haas, a chemical company, trained school staff in group problem solving, participation, management and leadership skills, and many of the principals in the district went through South Central Bell's management training program. Two actively restructuring schools in Prince William County sent administrators and several teachers to Xerox workshops on Total Quality Management. The teachers later conducted in-services at the school sites to train colleagues. In addition, many of the actively restructuring schools applied for available grants that provided staff development funds to stimulate school reform. There was a notable absence of such activities in the struggling schools.

Our findings in this area support the importance of capacity building for redesigning organizations. Actively restructuring schools generally sought out resources for and implemented higher levels of professional development and involved more of the school community in training. These patterns suggest important connections between professional development and SBM: 1) it is difficult for schools to accept responsibility for management (and for organizational outcomes) without technical know-how; and 2) school staffs who direct local governance activities actively seek out staff development to build new capabilities. The importance of these findings are underscored by previous research in SBM schools that found both limited attention to professional development and a preoccupation among participants with process over outcomes (Ogawa & White, in press; Johnson & Boles, in press).

Power

By definition, SBM schools have power structures that are different from most public schools

in America. In traditional schools, initiatives tend to emanate from the top of the organizational hierarchy with the superintendent and school board. By contrast, SBM schools are places where significant authority has been devolved from the district office to the school campus and initiatives come more often from the schools themselves. Policy decisions related to how power should be decentralized to schools focus on two major issues -- who should be empowered at the school site and how much power should they have. In the four districts we studied, there was some variation in terms of where such policies were set. In Jefferson County and Prince William County, SBM plans largely were designed by schools that were allowed to set their own parameters, including the composition of the council and the choice of who could chair. In San Diego, the district and union issued broad guidelines, including specification of teacher membership ratios for the councils. The change agendas of the councils were left to the school to decide, although school plans and goals were required in several districts. In Edmonton, school plans were expected to incorporate outcomes, expectations and indicators set by the district.

This section examines three issues related to devolving power and its influence on the capacity of the school to restructure itself: 1) participative structures; 2) the role of the principal; and 3) the amount of authority devolved.

Participative Structures. Councils at SBM schools typically consisted of elected representatives of various stakeholders in the school (e.g., teachers, parents, classified employees and campus administrators). Interestingly, councils under specific mandates did not look all that different from councils designed under loose guidelines in terms of membership, leadership and areas of jurisdiction. Edmonton was the only district of the four where no council was created at the school site; all teachers were considered part of the governing body and principals devised their own methods (usually informal) for obtaining teacher input. For the parents' perspective, Edmonton schools consulted their specially-created parent advisory councils. The role of this body was not to design policy, but to provide input on parents' views and desires that the school then could incorporate into its decisions.

Once site councils were created, schools, particularly the actively restructuring ones, tended to further disperse power at the site by creating subcommittees. A common conclusion in research on SBM is that teachers become frustrated and burned-out from the enormous workload of teaching and managing. Subcommittees allowed greater numbers of teachers to participate in the formal decision-making process and also seemed to help reduce the burden on any one teacher.

The subcommittees, which were structured around issues related to schooling such as curriculum, assessment and professional development, also seemed to focus teacher energy and interactions on specific work tasks, not abstractions like "culture" or "empowerment." Hannaway (1993) found similar benefits to subcommittees in her study of two school districts that had decentralized effectively. Subcommittees in some actively restructuring schools tended to serve as work groups for the site council, alternatively receiving ideas from the council to develop and submitting ideas/recommendations to the council for approval. In other schools, subcommittees initiated activity, receiving input and ultimately approval from

the council.

Membership of the subcommittees typically was some combination of teachers who served on the council and those who did not. In some actively restructuring schools, non-council teachers chaired the subcommittees. These schools tended to view subcommittees as a further dispersion of power on campus; the subcommittee structure allowed greater numbers of teachers to hold leadership positions. Other schools had council members chair the subcommittees. Respondents from these schools tended to view the subcommittee chairs as liaisons to the council and during interviews, focused on the need for a tight link between the school site council and its subcommittees.

The profile of a fairly representative actively restructuring school included an eleven-member governance council composed of the principal and seven teachers elected by each of the teaching teams. Parents and classified employees also served on the council. Although members were elected to serve, council meetings were open and in this school any faculty member attending the meeting enjoyed full privileges, including being able to vote. The school had six standing committees: 1) instructional materials, 2) students services, 3) staffing and budget, 4) planning, 5) curriculum and 6) professional development. The chair and vice-chair of each subcommittee were non-council teachers, although each committee had council teachers, too. Ad hoc committees were created as needed; scheduling, for example, was handled through an ad hoc committee.

The effectiveness of the councils tended to differentiate actively restructuring and struggling schools. Struggling schools got bogged down in establishing power relationships on campus. These schools expended large amounts of energy formalizing who was empowered. The majority of struggling schools had strict guidelines that delineated authority. They tended to empower a subgroup of the faculty and to have only a limited number of mechanisms for involving faculty in decision-making. Furthermore, the guidelines that delineated who had power were very clear leading to feelings of "we" -- the empowered -- and "them". One struggling school in San Diego spent almost a year developing a governance document that strictly delineated power roles. The document established, for example, that only elected teacher representatives, or their alternates in the event of an elected member's absence, could speak at council meetings. Further, only the elected member, not the alternate, was able to vote. The Consortium on Chicago School Research (1993), likewise, found that in schools with "adversarial politics," conflicts about power tended to dominate discussions and the schools' ability to focus on improvement efforts was greatly diminished.

It also was common for principals in struggling schools to be involved in a power struggle with their staff. This frequently was precipitated by the disjuncture between the principal's espoused view of how the school worked --participatory management -- and her/his own management style. It especially became evident when the principal's personal values were in conflict with actions advocated by the council. In one struggling school where the council adopted a "zero tolerance for fighting" policy -- meaning that any student involved in a physical altercation was subject to immediate suspension -- the principal actively undermined the council's decision by not enforcing it, even though the policy was incorporated into the student handbook. Thus, when teachers sent students to the office for fighting, they were not

likely to be suspended, especially if it were their first offense. The non-support of the principal had alienated and divided staff, and the school consequently was spending lots of time on issues of control.

The Role of the Principal. Successful principals were able to motivate staff and create a team feeling on campus, as well as guiding and providing a vision for the school. Notably, there was little difference in leadership style between Edmonton, on the one hand, where the principal was the key decision maker and the other two districts where the site council had more authority. In the private sector, research by Peters and Austin (1985) stresses the importance of MBWA -- "management by wandering around." Principals at actively restructuring schools often employed this technique by routinely engaging faculty in timely and informal conversations in the halls away from their offices. In addition, these principals almost always were characterized as entrepreneurial. They sought out grant opportunities and then encouraged faculty to write proposals for the funding of innovations that addressed school-initiated concerns, like the integration of technology across the curriculum. Successful principals also typically served as a liaison to the outside world with regard to educational research and practice, gathering information to share with teachers at faculty meetings and the like. Research and innovative approaches, such as Howard Gardner's Multiple Intelligences, Caught in the Middle, or Deming's Total Quality Management, were disseminated frequently and often used to improve instruction on campus. Many principals viewed themselves as an information clearinghouse.

Many of our findings regarding principal leadership echo findings from research on effective schools (Purkey & Smith, 1985, 1983; Wilson & Corcoran, 1987; Austin & Holowenzak, 1985) and more recent studies of school decentralization (Bimber, 1993; Consortium on Chicago School Research, 1993). Principals in the actively restructuring schools were highly regarded by the faculty -- "this school runs like a tight machine because of strong leadership." However, contrary to previous research, we found that in several actively restructuring schools the principals moving away from the role of instructional leader toward more of a managerial role. The principals worked to shield teachers from concerns in which the teachers had little vested interest or expertise, so that they -- "the instructional experts" -- could concentrate on teaching. One principal, for example, increased his visibility in the community to encourage people to come directly to him with non-instructional problems, which then could be resolved without infringing on faculty time.

The Amount of Authority Devolved. With regard to the amount of power decentralized, this study did not find a strong, simple relationship between the absolute amount of authority a school has and its capacity to restructure. Findings suggest, however, that a minimum threshold of authority -- focused on factors that affect teaching -- is a necessary condition for active restructuring. The level of authority a campus has is typically dictated by the model employed by the district the school is in. Schools in our sample had significant authority over budget -- most controlled a lump sum budget; personnel -- schools to some extent controlled the mix of staff positions; and curricular decisions --within state and local constraints, schools could make operational decisions about curriculum delivery.

Like previous research (Wohlstetter & Buffett, 1992; Clune & White, 1988), we found that

the first area of control that schools attained was usually some degree of budgetary authority. At least part of the budget of the schools in our sample was allocated to the campus as a lump sum. The primary complaint of both actively restructuring and struggling schools was that after paying salaries and other fixed costs, few discretionary dollars remained. Indeed, upwards of 90-95 percent of the school budget was often determined before dollars were allocated to the school site.

The budgeting process was another area that differentiated actively restructuring and struggling schools. Just as actively restructuring schools tended to disperse power throughout the organization, the majority of them also involved multiple stakeholders in the budget process. The schools made an effort to focus attention on the needs of the whole school rather than balkanizing the needs of academic departments or teaching teams. For example, a principal of an actively restructuring school in Prince William County made a special end of the year budget to keep faculty focused on the school as a whole. At the end of the school year, the principal asked department heads to pool any funds remaining in departmental budgets, so funds could be spent to benefit the whole school. Then a faculty meeting was held to decide how to spend the money. To facilitate decision-making, each department drew up a wish list of things they thought were needed to improve instruction in the school. At the meeting, faculty discussed the lists and decided what they believed would have the most significant impact on the school as a whole. Through this process, academic departments were placed in the context of the whole school.

Control over personnel meant that the campus was able to hire staff that conformed to the culture of the school and to create a mix of staff positions that supported the teaching and learning strategies of the campus. The majority of schools in our sample had some control over which teachers were hired, although schools typically had to hire teachers from district approved lists. It was common for the central administration to make the first cut and then send schools a slate to select from. However, it was also possible for schools to reject an entire slate and request additional possibilities. One complaint of many actively restructuring schools in our sample concerned the acceptance of teacher transfers. While schools often were given wide latitude in selecting new hires, the same schools were often required to accept transfers from within the district. Frequently these teachers were seen as undesirable, often because they did not fit the emerging approaches to teaching and learning; said one principal, "It's a turkey trot."

Actively restructuring schools tended to utilize authority over the mix of positions in innovative ways to support teaching and learning. For example, itinerant resource teachers frequently were hired in different combinations to cover classrooms, so that groups of teachers could have regularly scheduled common planning periods.

All of the schools in our sample could make some curricular decisions on the campus. They described themselves as having control over the "how's" of the instructional program. Generally, the "what's" of the instructional program were outlined in district or state guidelines. Teachers in actively restructuring schools have achieved greater agreement about instructional direction. In Jefferson County, teachers in three schools were unified by frameworks provided by outside reformers -- the Coalition of Essential Schools and the

National Alliance for Restructuring Education. But achieving collective agreement also required discussions, off-site meetings and collective planning. Perhaps the most significant common element across actively restructuring schools was the extent to which organizational mechanisms were in place that generated interactions for school-level actors around issues related to curriculum and instruction. Likewise, in actively restructuring schools in Chicago where researchers found sustained discussions about educational issues, time had been set aside for teachers to meet, and places were made available for teachers to congregate and talk (Consortium on Chicago School Research, 1993).

Many of the elementary schools and some of the middle and high schools that were actively restructuring created teaching teams or houses, where a group of teachers (usually 4-6) were responsible for instructing a cohort of students. Decisions regarding curriculum and instruction usually were decentralized to the teaching teams or to a curriculum subcommittee and through such vehicles, teachers had ongoing task-related contact with one another. For example, one curriculum subcommittee at an elementary school solicited ideas in the areas of science, math, language arts and physical education from teachers school-wide to develop an interdisciplinary curriculum framework on health. The product of this effort, with contributions from nearly all staff members, was a curriculum designed to promote healthy lifestyles among students of all ages and abilities. Lesson plans in the curriculum spanned a variety of health-related topics -- the nutritional value of foods, measurement, physical exercise, communication, creativity and safety -- and tapped a range of skills. In one lesson, for instance, students first read and compared nutrition labels on food containers, and then recorded information about the amount of saturated fat, sodium and sugar in different foods. With this information, the students next used math skills to calculate the recommended daily intake of these "three evil S's of foods." At the end of the lesson, as an assessment mechanism, students used their knowledge to plan a creative meal within specified levels of fats and calories.

Besides teaching teams and curriculum subcommittees, school schedules in actively restructuring schools often were redesigned to encourage teacher interaction. One frequently used method was a common planning period for teachers at the same level or in the same subject area. Teachers used this time to develop curriculum and share lesson plans. In addition, some schools went so far as to add an extra period to the school day to allow for planning; sometimes this required a waiver from local policy or the teaching contract. Struggling schools were unlikely to have redesigned the parameters within which the faculty operated, in part because they had not developed a shared vision of how they wanted to teach.

In addition to the large role of site councils and local school administration, superintendents worked actively to help create the capacity for high involvement. Superintendents were largely aiders and abettors, moving central offices from a directive role toward a service orientation and offering resources (e.g., professional development) to support/encourage school-level change. The district office in Jefferson County offered extra money for professional development to encourage schools to move to SBM. All four superintendents led the charge to develop a service orientation in the district office. All had flattened and downsized the hierarchy in the central office. The Jefferson County superintendent gave each principal the number of a "lightening rod" to call in the district office if they had a problem.

If the principal did not get a satisfactory response from the lightening rod, then the superintendent instructed the principals to call him directly. Superintendents in many of the sample districts also worked hard to develop a district-wide culture that encouraged risk-taking by schools. These superintendents reported great variability in the extent to which schools took advantage of changes in the district climate. Some schools had a strong vision, and made modifications and secured deviations from many district-wide practices to help implement their local vision. Other schools laid low, did not challenge past practice, and continued to see themselves as victimized by the district.

Information

In private sector organizations, as in public schools, information about the system historically has been available primarily at the top of the organization. In the United States, the most widely available information about a school are student test scores and those are routinely disseminated from the top of the organization down the hierarchy to the school-level. Information sharing in actively restructuring SBM schools contrasted sharply with this norm: first, the kinds of information disseminated were much broader and second, there was a strong focus on sharing within individual school communities.

Similar to the effective schools research (Lezotte, 1989; Edmonds, 1979), we also found that most actively restructuring schools that we studied had a vision statement, delineating the goals and mission of the school. As would be expected, vision statements focused on the technical core of schooling and often were nested within a district or state framework, depending upon the source of the instructional guidance system. We also observed that by focusing on the goal of schooling, faculties in actively restructuring schools got away from concerns about the governance process -- the kinds of issues that seemed to stymie the struggling schools. The process of writing a vision statement most frequently was a school-wide effort that tended to draw faculties together toward an established purpose. Many actively restructuring schools used professional development days to "retreat" and define the mission and goals for the school. Once completed, the faculty felt they shared ownership in the vision and felt responsible for implementing it successfully. Across all four districts that we studied, school boards had implemented some kind of choice plan. Such policies seemed to force schools to be concerned about attendance and within our sample, resulted in a strong push by schools, particularly the actively restructuring ones, to develop mission statements that distinguished them from their competitors in the district.

Benchmarking information, how the school was doing relative other schools, was often overlooked in the schools we visited. In some cases, even when information was available on campus, only the principal or other school administrators were aware of it. Even in the actively restructuring schools, educators tended to dismiss the relevance of these data.

In Edmonton, there were strong district initiatives to collect and disseminate information to stakeholders. For the past thirteen years, the district has conducted annual surveys of students and staff. In addition, there is a biannual survey of parents and the general public. The biannual surveys are staggered so parents are scheduled one year and the general public the next. The survey results, which focus on the extent to which constituents are satisfied with

their school, are released every fall and campuses use the information to identify areas that might need to be changed or improved. The district also sponsors regularly scheduled meetings of school staff at the district office and "key communicators" -- that is, parents who are designated at each school to get information from the district and to disseminate it. All four districts that we studied also had developed or were developing a computer network, electronically linking schools to the district office. However, school-level interviews suggested the networks were not often tapped -- for dialogues between teachers or administrators within or across schools, or between the central office and schools.

In Hannaway's study of two decentralized districts (1993), she also found high levels of information sharing and concluded that such interactions often were a consequence of district initiatives. Here we found that information sharing tended to be primarily a school responsibility with some encouragement from the district office, like in Edmonton. Actively restructuring schools typically had *multiple* mechanisms for communicating information to stakeholders. For instance, schools routinely communicated in writing to faculty what was happening at the school and, to a lesser extent, the district. Information was placed in teacher mailboxes or made available in a central location, such as the teachers' lounge. At the very least, actively restructuring schools made council meeting agendas and minutes available to staff. Many actively restructuring schools also provided teachers with the school budget, student achievement results and information about the curriculum.

Other mechanisms that helped facilitate the flow of information within restructuring schools were common planning periods for teachers and the subcommittee structure. During planning periods, teachers communicated with one another about what they were doing. Thematic units often are implemented school-wide, and lesson plans were shared and modified to use with children of different ages. The subcommittees, which were focused on work tasks, also helped to coordinate the flow of information and work across classrooms and grade levels. Struggling schools, on the other hand, tended to have few mechanisms for sharing information. Further, mechanisms that were in place tended to be informal. At struggling schools, the teacher grapevine was the most frequently cited means of communication. Information shared in this way tended to be incomplete and unsystematic; scarce information, moreover, tended to breed suspicion and was more common in struggling schools.

Among the actively restructuring schools, there was a strong customer service orientation and a strong interest in satisfying the customer. Actively restructuring schools seemed to feel they owed information to the community and consequently, made special efforts to assure that parents were fully appraised of what was happening on campus. The majority of schools had newsletters that were sent to parents, often on a weekly basis. The newsletters included information about the school's budget, student performance data, SBM data (e.g., election results and decisions from council meetings) and curriculum information (e.g., instructional themes for the year). Frequently, parental input was solicited through the newsletters. Actively restructuring schools also used teacher/parent conferences to communicate with parents about school politics and school performance.

Aside from mechanisms within schools, there were innovative mechanisms usually established by the central office to ensure communication between SBM schools and the district. For

example, schools in Edmonton, Canada were divided into seven regions and each region was made up of schools without regard to geographic area or grade level. Principals from the regions meet monthly at the central office to discuss what is going on across schools and at the district-level. Further, monthly meetings are held horizontally between elementary, junior and senior high principals. San Diego also keeps schools networked though district-level department meetings. Department chairs from individual schools attend the meetings where district-wide curriculum issues are discussed. Principals also meet in groups with the superintendent once a month. In Jefferson County, principal liaison groups, composed of eight or nine members, give principals an opportunity to share information horizontally with other schools, and vertically with the superintendent.

In conclusion, the schools we studied had many mechanisms in place that encouraged high levels of interaction and information sharing within school communities and across schools. This horizontal orientation is in sharp contrast to the thrust of many SBM plans which typically stress how information ought to be shared *vertically* between individual schools and the district office, usually focused on whether schools are adhering to regulatory policies (Johnson & Boles, in press).

Rewards

Rewarding stakeholders for performance was one area where actively restructuring and struggling schools showed few differences: Rewards for performance were almost nonexistent. For instance, there were no financial rewards in any of the districts we studied for the performance outcomes being sought through work directly related to being an actively restructuring school. Jefferson County awarded extra money for professional development to schools who voted to adopt SBM, which was a district investment in the development of new capabilities, not a reward for performance or outcomes.

Rewards for desired behaviors included reduced courseloads for grant writing and sometimes stipends for attending staff development activities during the summer or on weekends. These were especially utilized in the actively restructuring schools, reflecting both their higher level of improvement activities and their entrepreneurial activity to secure extender funds. Actively restructuring schools also tended to secure grants to pay for staff off-site meetings and teacher support for engaging in various workshops, and to bring in outside trainers.

Recognition was the most frequent mode of rewarding staff both in actively restructuring and struggling schools. It was common for principals to write thank-you notes to staff. One principal at an actively restructuring school in Edmonton described thanking teachers as, "...the daily dose. That's my main job -- to provide a support system for teachers." Another method was to include teacher kudos in school newsletters. Sometimes teachers acknowledged colleagues by putting congratulatory notes, candy bars and sodas in their school mailboxes. A few schools selected a *Teacher of the Year*, and many teachers were nominated for state and community awards.

In some schools, group rewards generally were favored over individual rewards. Some principals stressed the importance of moving away from the idea of winners and losers in

order to create a sense of community; thus, in those schools individual recognition among students, as well as faculty and staff, often was not done. Instead, whole faculties were rewarded with staff development activities (accompanied by free dinners), flowers and parties at the end of the school year. One principal had custom-designed cups with the school motto made for everyone. PTAs also helped reward teachers by hosting faculty recognition nights or breakfasts.

Sometimes whole-school rewards for desirable behavior were embedded in district SBM plans. The SBM plan in Edmonton, for instance, offered schools the option of paying their own utility bills and any savings derived could be used by the school as they saw fit. In all four districts where SBM schools were able to carry-over surplus funds, the reward for being frugal was the ability to build-up a discretionary fund for special projects or needs.

"Showing off" was sometimes used to instill a sense of pride in the school. At an actively restructuring school in Jefferson County, the walls in the teachers' lounge and the office hallway were filled with framed awards, newspaper clippings and thank-you letters. There is a saying in the school that if you say something good about the school and stand still long enough someone will put you up on the wall. Principals in these actively restructuring schools typically took an active role in public relations activities aimed at increasing the school's visibility in the community. In part this was a method of developing community understanding, acceptance and pride in the changes that were being made.

Extrinsic rewards were not the only ones that kept teachers motivated. Intrinsic satisfaction also was highlighted during interviews. For instance, teachers found it rewarding to have the power to influence decisions; to be innovative in curriculum and instruction; and to be better able to respond to student needs. At a struggling school in Edmonton, the principal noted that teachers do their job for one reason: they believe what they are doing is important. At another struggling school, a teacher commented, "Are there supposed to be rewards for good teaching? In education, I thought you did it because you liked to do it. If I were in business, I might expect a little more." A similar thought was expressed by another teacher at a struggling school in San Diego: "Believing you're doing the right things makes the school a better place for teachers and students." The atmosphere of an actively restructuring school in Prince William County was described as one where teachers received psychic satisfaction from their work and celebrated each others' successes. As one teacher from an actively restructuring school in Edmonton commented, "We do this because we want to -- we like it." In sum, teachers in both the actively restructuring and struggling schools we studied found the practice of educating rewarding in itself. The idea that teachers are intrinsically motivated is not new to educational research (see, for example, Smylie & Smart, 1990; Cohen, 1983).

Focus on Instructional Improvement

This research found that establishing school site councils does not automatically lead to their application to improve teaching and learning, even when an instructional guidance mechanism is in place at the state or district level. Schools within the same districts varied in their ability to use their school-level power to focus on and effect change.

Across the districts and schools we studied, several characteristics surfaced as key to the capacity of school-level participants to target SBM energies toward restructuring. First, all actively restructuring schools had organizational mechanisms in place that generated interactions for school-level actors around issues related to curriculum and instruction. In struggling schools, teacher isolation continued to be the prevalent culture. The actively restructuring schools we studied offered stories of cross-role training and of teachers in similar positions being trained together; of information being shared by teachers across classrooms and grade levels; and of faculties working together on teaching teams, subcommittees and school site councils. Thus, there were many opportunities for school site employees to mutually influence the emerging direction of the school. While the high levels of interaction created a sense of community, the instructional guidance system regardless of whether it emanated from the state or the district -- provided an agreed to direction that effectively focused interactions on teaching and learning. In essence, the instructional guidance system served as a resource to schools, providing a direction for school-based change. Our struggling schools operated in a context where the instructional guidance mechanism was present, but school-level employees were not directing their energies in that direction. They were concerned primarily with who controls the school. They had relatively impoverished mechanisms for convening school dialogues in general, and around instructional issues in particular.

A related characteristic of actively restructuring schools was a written vision statement that typically was nested within the state or district's instructional guidance system. There was consensus among faculties about where they were, where they wanted to be and how they were going to get there. The principal played a strong leadership role in helping the faculty to articulate a vision by presenting ideas for innovation and by providing the time and support for effective group process. The vision seemed to frame the discussion of school improvement across decentralized work groups and provided a common purpose for faculty to rally behind.

Actively restructuring schools also often had established strong ties with organizations and associates outside the school for professional development and information sharing. Schools sought expert advice beyond the district and even beyond traditional educational circles. Some actively restructuring schools tapped resources in the private sector for management training and for building up their technology capabilities. In sum, we began to see evidence that actively restructuring schools, like effective organizations in the private sector, were optimizing their situation, given the resources they could secure, and they were doing what they were good at and relying on others to do what they were good at.

Conclusion

The research reported here has focused on the utility of SBM, defined in a broader way, for enabling the restructuring of schools for high performance. SBM, therefore, was studied in combination with an instructional guidance system that provided an agreed-to direction for curriculum and instruction. This research was concerned with the conditions that enable schools to use decentralized power to introduce changes that create the capacity for high performance. Applying the framework of high involvement management, we hypothesized

that school-level actors, in addition to being empowered, need training to acquire the knowledge and skills necessary for creating a high performance organization; need access to information about the performance of the organization; and need to be rewarded for their efforts. Thus, we were interested in testing a new, expanded definition of SBM that went beyond the traditional boundaries of shared power.

The importance of the first three factors of the Lawler model (knowledge and skills, information, and power) was confirmed in the comparison of actively restructuring and struggling schools. Those schools that were introducing significant change in the teaching and learning process had invested more heavily in the development of both team process skills and instructional staff development. They also had many more approaches to sharing information with multiple constituents. Finally, they had more mechanisms for participation in the governance of the school, and a greater percentage of the faculty were involved.

The area that did not discriminate was the use of rewards, although the actively restructuring schools had found many ways to extend resources, and to provide extra compensation for teachers involved in developing new instructional approaches. Pay for performance was not more prevalent in the restructuring schools.

The lack of extrinsic reward structures in schools is not surprising. Translating the concept of pay for performance to schools is probably the greatest challenge to SBM. Indeed, many would make the case that such an approach is not appropriate for public schools. Skill-based pay schemes in high involvement private sector organizations reward employees for the knowledge and skills they possess. By contrast, the conventional compensation system in education uses indirect, proxy measures of knowledge and skills, namely years of education (level of degree) and years of teaching experience (tenure) (Odden & Conley, 1992). The situation is further complicated by the fact that teacher compensation is negotiated through a union contract, and unions prefer schools and teachers to be treated uniformly throughout the district, which of course flies in the face of differential pay -- the natural consequence of a decentralized reward system. On the horizon, however, are school districts, such as Littleton County, Colorado, that in cooperation with the union are experimenting with differential pay schemes that link teacher pay to teaching skills.

In education, the lack of rewards for performance also may be linked to the issue of measurement. As noted earlier, proxy measures are used to assess teachers' skills, although the work of the National Board for Professional Teaching Standards appears promising in this regard. The Board's assessments, which will be different from any current teacher evaluations, will "stress teachers' knowledge of their students and demonstrated ability to work with other teachers to improve local schools" (Wirt & Kirst, 1992, p. 364). Local school districts in the future could use the Board's certification assessments to develop a skills-based pay system.

There also is the problem in education of measuring organizational performance. In spite of national movements to develop educational goals and curriculum standards, there remains scant evidence that districts have bought into these and that the guidelines are driving curriculum and instructional change in classrooms. Consequently, little consensus exists at

the school-level over the goals of education and there are few quantifiable measures beyond student test data. The results of this study suggest that empowering *schools* does not lead to restructured reward systems within schools, and that some schools are able to restructure nevertheless. On the other hand, just as many schools were unable to get school-level actors to focus on performance, despite their new authority.

The question for school districts is whether the kinds of change activities that we saw in the actively restructuring schools can be sustained and broadly diffused in the absence of an incentive structure. In our actively restructuring schools, many teachers and principals worried about burn-out, as many change activities were add-ons to an already full day. It is highly probably that the incentive approaches used in the private sector cannot be translated directly to schools. Nevertheless, the question remains of whether the massive changes implied by school reform can be accomplished without incentives.

This research adds to our understanding of conditions that enable schools to get school-level participants actively involved in introducing improvements to the school. If the intent is to improve school performance, we need to find approaches to SBM that direct the attention of school-level educators with expertise in teaching and learning toward that end, rather than toward management for the sake only of transferring control. We found that the majority of actively restructuring schools did not want to manage the daily operations of the organization beyond what was needed to effect change in teaching and learning. School-based *management*, therefore, may be a misnomer. Instead, what we probably want are mechanisms that foster high levels of *involvement* by school-level participants in decisions related to the school's performance and in finding new approaches to improving performance. Relevant decision areas include professional development (knowledge and training for faculty); school budget; and personnel, including how faculties are constituted and compensated as well as technical decisions about how to organize for and deliver teacher services. We also learned from this research the importance of combining SBM with ambitious curriculum and instruction reforms. SBM as a governance reform can act as the enabler or facilitator of school improvement, but without an instructional guidance system, there will be little agreement that improvements in teaching and learning are the goals of SBM. On the other hand, just having such a guidance framework in place and introducing SBM does not insure that schools will focus on changes in instruction.

This study vividly illustrates the importance of school-level factors. The role of the principal is key, and meaningful improvement does not occur when SBM is the playing field for adversarial relations between the principal and staff. The high involvement framework offers a way to conceptualize a new role for the principal, who must facilitate broad involvement by creating and supporting meaningful decision-making influence, the development of new skills and knowledge, information sharing, and rewards (intrinsic, extrinsic, recognition or financial) for making a difference.

Finally, this study has not shown that high involvement in actively restructuring schools leads to performance outcome improvements. Some, but not all, of the restructuring schools felt they had impacted student involvement and other process indicators. Hard test score changes were not reported, and many schools felt that such test scores do not accurately capture the

results of their new approaches. This debate will no doubt continue. In the meantime, we rely on qualitative reports that restructuring activities can have and are having an impact. Whether this is true only time will tell. What we can say from this study, however, is that the schools that were introducing changes in instruction and learning as an outcome of their SBM activities were more likely to have higher levels of information sharing, greater knowledge and skill development, and more mechanisms for broad involvement. This provides support for our initial hypothesis, and evidence that districts should take a broader organizational view of SBM.

Endnotes

1. Similar research methods were used to study SBM schools in Victoria, Australia. The research results are reported in A. Odden and E. Odden, *Applying the High Involvement Framework to Local Management of Schools in Victoria, Australia* (April, 1994).

1. Our original intent was to have a sample of 24 schools --six each from four districts -- evenly divided between "struggling" and "actively restructuring." But, one "struggling" elementary school dropped out of the study at the last minute and so one district in the sample had only five schools represented.

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Teachers' Professional Development in a Climate of Educational Reform

Judith Warren Little

This essay posits a problem of "fit" between five streams of reform and prevailing configurations of teachers' professional development. It argues that the dominant "training" model of teachers' professional development—a model focused primarily on expanding an individual repertoire of well-defined and skillful classroom practice—is not adequate to the ambitious visions of teaching and schooling embedded in present reform initiatives. Emerging alternatives to the training model, though small in scale, embody assumptions about teacher learning and the transformation of schooling that appear more fully compatible with the complex demands of reform and the equally complex contexts of teaching.

The essay begins by posing some of the ways in which current reform movements shape challenges, possibilities, and constraints for teachers' professional development. Section two frames a policy dilemma that revolves around the limitations of the dominant training paradigm for purposes of achieving the reform agenda. A third section introduces principles that seem especially congruent with reform requirements, together with examples of four options that appear to hold promise. The final section outlines selected issues that bear on the fit between reform imperatives and teachers' professional development and that thereby inform the criteria for assessing professional development policy choices.

Two caveats preface the broader argument. First, the discussion concentrates exclusively, or nearly so, on teachers. For principled and pragmatic reasons it places teachers at the center, even while acknowledging the ways in which entire institutions, and all the roles and relations they encompass, are implicated in any reform effort. Second, the essay reflects certain reservations about any stance that places teachers solely or largely in the role of "implementers" of reform. To be sure, reforms pose certain technical demands—demands on the knowledge, skill, judgment, and imagination of individuals. In that sense, the implementation problem at the level of the classroom is real. But reforms also convey certain values and world views. They communicate a vision of what it means to learn, and what it means to be educated; they communicate a vision of schools and teaching, of students and teachers. They are to greater or lesser degrees compatible with the organizational structures and cultures in which persons work. In these crucial ways, powerful reform ideas engage teachers in a broader consideration of the educational enterprise both in and beyond the classroom.

Professional development in the service of "implementation" may obscure questions related to purpose, and may mask the internal contradictions and tensions within and across reform initiatives. To make sensible critiques of proposed reforms requires getting at their underlying assumptions, their social and historical context, the degree to which they are congruent or not with teachers' existing beliefs, commitments, and practices, their probable consequences for

students, and the ways in which they vary or converge across communities. By this argument, one test of teachers' professional development is its capacity to equip teachers individually and collectively to act as shapers, promoters, and weil-informed critics of reforms. The most robust professional development options will locate problems of "implementation" within this larger set of possibilities.

Professional Development and the Reform Agendas

Five streams of reform, both singly and in combination, present complex challenges to teachers as individuals and as members of a wider professional community. Those challenges are illustrated, though not exhausted, in the descriptions that follow. The test of teachers' professional development opportunities resides in their capacity to engage teachers in the kinds of study, investigation, and experimentation required to understand and undertake the multiple challenges described here, and to grasp the relationships among them.

Reforms in subject matter teaching (standards, curriculum, & pedagogy)

Reforms in subject matter standards, curriculum content, and pedagogy increasingly aspire toward more ambitious student outcomes. Among them one would count the shift to a whole language and literature-based approach to language arts, the new mathematics standards, proposals for integrated science curricula and the like. Among them, too, one would place conceptions of "authentic achievement" that require a fundamental change in the nature of students' intellectual tasks and teacher-student relations (Newmann, 1990). These reforms constitute a departure from canonical views of curriculum and from textbook-centered or recitation-style teaching. They demand a greater facility among teachers for integrating subject content, and for organizing students' opportunities to learn. They represent, on the whole, a substantial departure from teachers' prior experience, established beliefs, and present practice. Indeed, they hold out an image of conditions of learning for children that their teachers have themselves rarely experienced.

In addition, individual teachers may be pressed to move on many fronts at once (see Hargreaves, 1990, 1992; Little, 1992a). Elementary teachers must absorb the changes in content and method associated with an entire spectrum of the elementary curriculum. The rotating "curriculum adoption" schedules for the California state frameworks, for example, could keep elementary teachers permanently in "implementation of innovation" mode—an exhausting prospect. Secondary teachers are asked to consider possibilities for interdisciplinary curricula at precisely the time they are asked to reconsider their approaches to subject matter teaching—the latter reinforced by new state curriculum frameworks, standardized test protocols, subject-specific university admission requirements, textbook design, and the like. Meanwhile, reforms aimed at "critical thinking" sit in tension with the basic skills reforms that began in the 1960s and are still a prominent part of the urban school improvement landscape (Carlson, 1992).

Reforms centered on problems of equity among a diverse student population

Equity reforms respond to the persistent achievement disparities among students from

differing family backgrounds, and are aimed at altering both the demonstrated achievement and school completion rates of the lowest achieving groups. Over the past decades, such reforms have centered largely on remedying individual student deficiencies. Although more recent analyses have pointed with increasing specificity and persuasiveness toward institutional structures and norms that define and contribute to student failure (for example, Fine, 1991; Oakes, 1985, 1992), programmatic remedies continue to focus on students' individual skills (and deficits). (We could ask the question, for example, Why does tracking in the high school persist despite so much discrediting evidence?) There are a few exceptions in which reforms in school organization target specifically the structures of students' opportunity to learn; these range from the charter schools experiment in Philadelphia high schools (Fine, 1992) to a single teacher's efforts to "untrack" an Advanced Placement English class (Cone, 1992). By comparison to individualistic remedies (to what is arguably a systemic and structural problem), these efforts are few in number; most school "restructuring" proposals are founded on other assumptions and strategies.

Advances in professional development, too, have centered on problems of diversity and equity in individual classrooms—assisting teachers to identify and alter classroom practices that contribute to student failure and that undermine "equal opportunity to learn." The most promising of these efforts engage teachers collectively in studying classroom practices in ways that sometimes lead to more systemic changes at the school level (Cochran-Smith and Lytle, 1992; Cone, 1992). They do so by building a norm conducive to the close scrutiny of well-established practices and by building a capacity for organizational change.

Reforms in the nature, extent, and uses of student assessment

Reform proposals argue for more widespread and rigorous use of authentic assessment. Yet the technical advances in assessment have typically lagged behind the formulation of standards and the advances in curriculum design. State and local policy makers continue to judge the success of reform efforts on the basis of standardized test scores. Components of statewide tests that strike teachers as most "authentic" (for example, writing samples or open-ended math reasoning items) are also those most difficult and expensive to develop and to score. In areas other than language arts and math, they may also be relatively underdeveloped—especially where they call for synthesis across subject areas, as in the "exhibitions" favored by the Coalition of Essential Schools. At the local level, teachers' expressed interest in and commitment to alternative forms of assessment far exceeds their professed skill and confidence in constructing, evaluating, or incorporating such alternatives—and also exceeds the resources presently available from the research and test development communities. Yet local discussions do not and cannot wait upon the psychometricians' advances. In schools embarked upon "reinventing," "redesigning," and "restructuring" themselves, teachers wrestle with the criteria for good work, and the forms in which it might be expressed.

Reforms in the social organization of schooling

The recurrent strains of criticism throughout the 1980s culminate in the widespread agreement that business as usual will not suffice. The convergence of interest (and funds) around the

broad image of "school restructuring" has been quite astounding. The call to more systemic reform permeates initiatives in "school restructuring" supported by states, private foundations, and, to a lesser extent, projects sponsored by teachers' associations in concert with local schools and districts.

The most ambitious of these initiatives have in common that they are oriented toward principles, not programs or specific practices. The Coalition of Essential Schools, for example, is united by a commitment to nine principles for the "redesign" of secondary schools (Sizer, 1992). Predictably, teachers' commitments to these principles are provisional and uneven—in that regard, we have what might appear to be a conventional "implementation of innovation" situation. But the dilemma for school leadership and for professional development goes far deeper in this instance: there is no well-developed picture of what these principles look like in practice. In the scramble to define a model, isolated cases of success become the focus of lore—Central Park East springs to mind, but few others (Meier, 1992). And no matter how persuasive the precedent set by any success story, broad principles require close attention to each local context. To fit opportunities for professional development to a campaign for the principled redesign of schooling is arguably a different matter indeed from organizing the training and support to implement a program or a set of readily-transferable practices. Yet we lack descriptions of restructuring initiatives that supply a detailed portrait of the learning demands on teachers and the corresponding professional development responses.[1]

Reforms in the professionalization of teaching

The "professionalization" reforms at the national and state levels center on teachers' demonstrated knowledge base (as reflected in standards for preparation program accreditation and candidate assessment), on conditions surrounding teacher certification and licensure, and on the structure of career opportunities in teaching. At the local level, professionalization tends to take the form of extended assistance to new teachers, expanded career opportunities for experienced teachers, and experiments in site-based decision making. For purposes of this paper, these reforms are interesting principally for the way in which they bear upon the four reform movements discussed above—that is, for the way in which they equip teachers both individually and collectively to play an informed and active role in defining the enterprise of education and the work of teaching.

This is not the place to repeat all the major arguments surrounding the professional standing of the teaching occupation, although the reforms have spawned a large and growing literature. Two comments seem germane. First, state and local policy makers seem most readily disposed to support appeals to "professionalization" where they see it as (1) sustaining a reasonably well-prepared and stable teacher workforce; and (2) coupled with assurances of local accountability for student outcomes. Second, initiatives that promise "professionalization" of teaching increasingly expand opportunity and reward in exchange for increased obligation. Teachers are expected to contribute to the support of beginning teachers and to participate in other ways in the improvement of schooling and teaching.

These five streams of reform cannot be done well piecemeal, nor are they reforms that

succeed if attempted only in isolated classrooms. As Fine (1992) puts it, the present ventures pursue the "big systemic, educational question..." of transforming whole systems into "educationally and emotionally rich communities of learners" (p. 2). This suggests quite a different organization of learning opportunity (and obligation) than one that supplies teachers with measured increments in knowledge, skill, and judgment from a known pool of "effective" classroom practices.

The Policy Dilemma

Three assertions help to shape the policy problem. They are derived in part from studies that reveal the dominant configurations of professional development opportunity (Little, 1989, 1992b), and in part from emerging research and other commentary on the demands that multiple reform initiatives present to teachers (Fine, 1992, in press; Little, 1992a; Meier, 1992).

1. The well-tested models of skill development, built on the staff development and implementation-of-innovations literatures, will work reasonably well to introduce those aspects of reforms that are "technical," or can be rendered as a repertoire of classroom practices. Among the possibilities generated by the five streams of reform, for example, are training programs in which outside experts or experienced colleagues introduce teachers to various models of cooperative learning, to the uses of manipulatives in mathematics instruction, or to methods for organizing portfolio assessment of students' work. On the basis of research into the conditions of teachers' "skill transfer," the practices associated with skill training have demonstrated increasingly greater sophistication (for example, Joyce, Murphy, Showers, and Murphy, 1989; Sparks and Loucks-Horsley, 1990). Effective training has come to be defined largely by its ability to provide adequate opportunities for practice and to provide for classroom consultation and coaching as teachers learn to use new ideas. All in all, then, we might make some substantial gains in some arenas if we more uniformly and consistently made use of what we have learned about the organization of training and classroom follow-up .

2. However, much of what we anticipate in the present reforms does not lend itself to skill training, because it is not readily expressed in terms of specific, transferable skills and practices. Rather, the present reforms require that persons in local situations grapple with what broad principles look like in practice. In Deborah Meier's terms, we are called upon to "reinvent" teaching and schooling, and to do so even while in the midst of day to day work (Meier, 1992). This aspect of reform calls not for training, but for adequate "opportunity to learn" (and investigate, experiment, consult, or evaluate) embedded in the routine organization of teachers' work day and work year. It requires the kinds of structures and cultures, both organizational and occupational, compatible with the image of "teacher as intellectual" (Giroux's phrase) rather than teacher as technician. And finally, it requires that teachers and others with whom they work enjoy the latitude to invent local solutions—to discover and develop practices that embody central values and principles, rather than to "implement" or "adopt" or "demonstrate" practices thought to be universally effective. This assertion acknowledges both the uncertainty surrounding best practice and the complexity of local contexts.

3. Local patterns of resource allocation tend to favor the training model over alternative models. In the absence of a good fit between the nature of the reform task and the nature of professional development, schools and districts are nonetheless inclined to do something in the name of professional development (before the fiscal year ends, the state program expires, or the school board demands results). That something is likely to look very much like the existing menu of training options: workshop series, special courses or inservice days devoted to transmitting some specific set of ideas, practices, or materials to teachers. For example, a decision to expand the available training in cooperative learning is readily defensible: the training is accessible as a well-tested program, and it has a plausible connection with efforts to improve classroom teaching. But such a decision is also problematic on two grounds. First, the investment in packaged programs of training tends to consume all or most of the available resources. The messier and more contentious forms of teachers' involvement required to examine existing practice and to invent new possibilities remain under-supported. Second, the training paradigm tends toward standardized solutions to the problem of "best practice." The more ambiguous aspects of reform—what "authentic assessment" or "integrated curricula" might amount to, for example—are granted comparatively less attention.

So: we know how to do training well, and could profitably do more of it well; the training paradigm, no matter how well executed, will not enable us to realize the reform agendas; and resource allocations for professional development represent a relatively poor fit with the intellectual, organizational, and social requirements of the most ambitious reforms.

Professional Development Principles and Practices

As a basis for achieving a more compelling fit, we might seek strategies or mechanisms that embody principles consonant with the complexity of the reform task. This is not to say that these practices and principles will provide the smoothest path to the implementation of reform proposals or initiatives as they are presently charted; to take these principles seriously, for example, could quite prolong the "implementation" of state level curriculum frameworks.

Alternatives to the training model

Four alternatives to the training model rest on a common implicit claim: that the most promising forms of professional development engage teachers in the pursuit of genuine questions, problems, and curiosities, over time, in ways that leave a mark on perspectives, policy, and practice. They communicate a view of teachers not only as classroom experts, but also as productive and responsible members of a broader professional community, and as persons embarked on a career that may span thirty or more years.

Teacher collaboratives and other networks. Subject-specific teacher collaboratives in mathematics, science, and the humanities have grown in size, visibility, and influence over the past decade. Lord (1991) locates the subject collaboratives within an alternative paradigm of professional development in which the vision of teachers' professional development encompasses: " (a) teachers' knowledge of academic content, instruction, and student learning, (b) teachers' access to a broader network of professional relationships, and (c) teacher

leadership in the reform of systemwide structures" (p. 3; see also Lieberman and McLaughlin, 1992).

Two accounts suggest how subject collaboratives equip teachers individually and collectively to deepen their subject knowledge and to assume a more assertive role in the reform of curriculum, pedagogy, and assessment. The first is an account of Philadelphia's humanities collaborative (PATHS); the second centers on the mathematics collaborative +PLUS+, one of several subject matter collaboratives organized under the sponsorship of the Los Angeles Educational Partnership.

PATHS (Philadelphia Alliance for Teaching Humanities in the Schools) engages teachers directly in the modes of inquiry related to the various humanities disciplines. The project's aim to provide urban students a genuine curriculum in the humanities—not watered down, dumbed down, or packaged—required a parallel experience for teachers. The former project director traces this decision about teachers' professional development in part to the general absence of humanities background in teachers' preservice preparation or subsequent studies: "[M]ost teachers hold degrees in education, psychology and related technical fields; few have been trained as historians, scientists, philosophers. Even those who do hold liberal arts and science undergraduate degrees rarely continued their pursuit of these subjects as graduate students. Advancement in teaching depends on certifications and supervisory credentials, not on learning more about arts and science subjects " (Hodgson, 1986, p. 29).

The specific program formats employed by PATHS all place teachers in direct contact with the city's rich humanities collections and with the curators and other experts who acquire, maintain, and interpret them. Minigrants were organized to give greater incentives to collaborative work and to engage teachers with a broader array of material and human resources. "We stacked the deck quite unashamedly"—teachers could receive up to $300 for an individual classroom project, but up to $1000 for collaborative work with other teachers, university people, museums, or libraries (p. 31). One example of a minigrant product is a slide show and teachers' guide on the Ars Medica exhibit for art, science and social studies teachers: "all areas that can benefit from the show on the artistic images of disease and the medical arts through the centuries" (p. 31). An outgrowth of the minigrant program is the two-week summer institute "Good Books for Great Kids," designed to "enlarge teachers' visions about literature to a much broader range of genres and subjects, and to teach them how to do a search of the literature in a variety of fields that would take them beyond whatever the salesmen from textbook publishers left on their desks" (Renyi, 1992). Using the children's literature collections in the Rare Book Room of the Philadelphia Free Library and in other similar collections, the teachers "did research in these collections and were trained to seek out books in their subject areas by children's librarians, children's literature specialists and special collections experts." At the end of two weeks, each teacher presented an oral defense of an annotated book list comprising trade books, library books, and special collections books; after the defense, the teacher received $500 to spend on trade books in the list and on trips to bring children to the special collections.

Colloquia sponsored by PATHS meet monthly throughout the year. In one, teachers working in Philadelphia's Rosenbach Museum and Library concentrated on manuscripts detailing how

20th century writers revised their work. This arrangement with the Rosenbach permits up to 25 teachers per month to study some aspect of the manuscript collection. The colloquia are oversubscribed, although they offer neither credit nor stipends. Summer institutes in literature, history, and languages (which do offer graduate credit) also are conducted on-site where relevant collections are held. These institutes, like the colloquia, entail an altered set of relations between the schools and other institutions (museums, libraries) and between teachers and other experts. Through activities organized by PATHS, teachers were able to see how curators conducted their own work with primary materials, and to work with those materials themselves. They got "behind the scenes" in museums, libraries, and other archival collections. They came to know not only the materials, but the people who worked with (and interpreted) them. They were able to examine (and sometimes contest) one another's interpretations.

Hodgson remarks: "[Teachers] have been starved (a metaphor teachers themselves use) for serious stimuli, and they are immensely enthusiastic patrons of museum and library collections" (p. 32). When her account is read in juxtaposition with rather common accounts of "unmotivated," "reluctant," or "resistant" teachers, one is struck by marvelously contradictory images of teachers as intellectual beings. In PATHS, we have an oversubscribed colloquium series and avid participants in archival research, while in much of the professional development literature we find a portrait of teacher as troglodyte. Surely there is a lesson here.

In a second example, the Urban Mathematics Collaboratives in more than fifteen major cities engage teachers with mathematicians in industry and higher education, with the combined aims of strengthening the caliber of math teaching and deepening teachers' commitment to all students (equity). The Urban Math Collaboratives have positioned themselves in support of the NCTM standards, though not without substantial discussion and debate, and have issued policy statements regarding equity, student assessment, and teacher professionalism (for example, Urban Mathematics Collaboratives, n.d.).

In Los Angeles, the mathematics collaborative (PLUS) retains structural independence from the participating districts but secures a foothold in the school workplace by inviting departments rather than individual teachers to join. Observers highlight six aspects of the collaborative's strength: (1) a capacity for teacher support in subject matter teaching that exceeds that of the district or university; (2) a norm of informed and steady experimentation in mathematics teaching; (3) a system of mutual aid that compensates for uneven subject matter preparation among the district's secondary math teachers; (4) sustained involvement with a professional community of mathematicians and mathematics educators; (5) a connection to the classroom that is sustained by teachers' control over the content and format of the collaborative's activity; (6) a broadened conception of professional knowledge and involvement that engages teachers in incorporate debates over the nature of mathematics and mathematics teaching, and also engages them in policy deliberations surrounding math teaching at the local, state, and national levels (Little and McLaughlin, 1991).

Both of these collaboratives, together with various models based on the Bay Area Writing Project, underscore teachers' involvement in the <u>construction</u> and not mere <u>consumption</u> of

subject matter teaching knowledge.[2] They constitute a challenge to intellectual and collegial passivity. Further, they prepare teachers to make informed responses to reforms in subject matter teaching and student assessment without being linked narrowly to specific reform proposals.

Subject matter associations. The place of teachers' professional associations remains nearly invisible in the mainstream professional development literature. We know little about the role played by the largest and most prominent subject matter associations (NCTE, NCTM, NSTA, and others) in the professional lives of teachers or in shaping teachers' disposition toward particular reforms. Although it is clear that the subject associations are exerting an increasingly powerful influence in the articulation of subject curriculum and assessment standards, we have virtually no record of the specific nature or extent of discussion and debate over subject matter reform. In what ways is the ordinary classroom teacher touched by an association's involvement in state and national debate over "standards?" If we were to examine the agendas for state, regional, and national conferences held by these associations, what traces of "reform" would we encounter? How do elementary and secondary teachers experience the demands associated with subject-specific reforms? In what ways are the various subject matter reforms congruent or in conflict? (The Alliance for Curriculum Reform, sponsored by the Rockefeller Foundation, has begun to work with the major subject matter associations to trace the commonalities and differences in the reforms targeted at subject paradigms, subject-related pedagogies, curriculum policy, and assessment.)

Smaller, more informal regional associations have attracted even less policy research attention, yet may prove crucial in shaping teachers' responses to specific reform initiatives. The Curriculum Study Commission (CSC), a long-standing group of English educators spanning elementary, secondary, and higher education, provides a forum for pursuing a wide range of teaching interests linked to the subject discipline. Although the CSC gives serious attention to any reform with crucial implications for teachers' work, it reserves its support for those reforms shaped fundamentally by teachers—as some of the new frameworks, standards, and assessments have been (Wagner, 1991; see also Ellwood, 1992).

In each of these examples—the NCTM and the CSC—we find an instance of teachers' professional community that extends well beyond the school walls, fundamentally independent of the employing organization, but positioned to exert considerable influence on teachers' dispositions toward reform proposals. To the extent that an association's most active members also occupy leadership roles within their schools, districts, or collective bargaining units, the association's effect is multiplied.

Collaborations targeted at school reform. Professional development is one integral feature of some collaborations targeted to school reform. School-university collaborations exhibit something of a rocky history. As instruments of reform, and as sites for professional development, they have had difficulty overcoming long-standing asymmetries in status, power, and resources. As partnerships have evolved, they have moved toward greater parity in obligations, opportunities, and rewards. The Coalition of Essential Schools offers the image of the school "friend," the insider/outsider (generally affiliated with a university) who remains attached to the school to provide support and critique of school progress. The friend, in

principle, is a resource to the collective, a way of expanding access to information and other resources. In the Stanford/Schools Collaborative, certain structural mechanisms help to introduce and sustain reciprocity. Governance arrangements achieve parity not only by formal provisions for equal representation, but also by operations that ensure widespread availability of important information (especially information about resources) and provisions for exercising influence in the distribution of resources. Separate planning committees for key program components or events expand representation in decision-making. The committees are a distance-closing device that is particularly crucial to the school-based participants (who have greater numbers), reducing the organizational distance from any one teacher or administrator to a "node" in the decision making net. To the extent that the structure of leadership spans groups and institutions, it helps to permeate organizational boundaries. Organizational boundaries are further blurred by the development of cross-institutional roles (for example, research activities designed and led jointly by teachers and professors, Professor in Residence in Schools opportunities, and the incorporation of classroom teachers as lecturers in the teacher education programs.) However, these cross-institutional roles are still small in number, low in visibility, modest in institutional salience, and perhaps too dependent on individual will.

Various other partnerships employ new conceptions of the university-school relation in the service of particular reform agendas. Faculty from National-Louis University have entered into a partnership with the Chicago schools in support of various subject matter reforms. They express the basic problem this way: "For most elementary school teachers, a very different type of instruction is described in the [Mathematics] Standards than they experienced as students...." In mathematics, for example, "The professional development programs that our Best Practice leaders provide require teachers to become actively engaged in doing mathematics" (Chicago Project on Learning and Teaching, 1992, p. 6). The idea is to promote and provoke conceptual breakthroughs in conceptual understanding for the teachers by facilitating mathematical experiences rather than by teaching the teachers mathematical content or methods. A similar investigatory stance toward curriculum and instruction also distinguishes a partnership described by Marilyn Cochran-Smith and her colleagues at the University of Pennsylvania. University faculty, experienced and prospective teachers, and secondary school students in Philadelphia join in research into aspects of a multicultural society (Cochran-Smith & Lytle, 1992). In this instance, teachers' professional development is intricately interwoven with the daily life of the classroom—for example, as English teacher Bob Fecho (1992) engages his students in research into the relations between language and power.

Whether broadly conceived or more closely focused, these partnerships invite a re-examination of the traditionally privileged position of the university in relation to schools, and of the asymmetries in the relations between professors and schoolteachers.

Special institutes and centers. Among the accounts that teachers offer when they are asked to describe "favorable" professional development experiences, certain stories stand out. They are those that describe participation in special institutes or centers—summer institutes sponsored by NSF, for example, where teachers enjoy sustained work with ideas, materials, and colleagues, or centers such as the University of California's Lawrence Hall of Science where

every activity expresses a commitment to make math and science more accessible, rich, and engaging for students, parents, and teachers. Judging by teachers' accounts, such institutes and centers offer substantive depth and focus; adequate time to grapple with ideas and materials; the sense of doing real work rather than being "talked at;" and an opportunity to consult with colleagues and experts. Some are grounded in a conception of systemic reform, their influence magnified by mechanisms that sustain connections among participants (electronic networks) and by explicit attention to the local and state contexts surrounding subject matter reforms.

By comparison to the volume of studies directed at district-sponsored training or school improvement projects, there is virtually no body of work directed toward these institutes and centers as a vehicle for teachers' professional growth and colleagueship. On the basis of anecdotal evidence, two policy issues stand out. The first is one of scale. Special institutes and centers concentrate resources, representing a greater cost per participant and a more restricted access than more modest local ventures. A note on the cost issue appears below. The second and related matter is scope or purpose—in a climate of reform, how might participation by a relative few achieve a ripple effect among a larger number in local schools and districts? Some institute sponsors more than others extend their agendas to in ways that address the realities of reform; they understand the problem of knowledge use in context. The relevant contexts include states, where graduation standards are set and curriculum frameworks promulgated. They include districts, where curriculum policy is specified and local priorities are expressed. And, most centrally, they include schools. It is a commonplace of the school workplace literature that schools are generally not organized to exert much influence on teaching practice, that collegial norms do not admit special claims to expertise, and that the social organization of daily work offers scant reason or opportunity for teachers to take much account of one another's interest in new ideas, materials, or methods (Bird and Little, 1986; Huberman, 1993). Some schools stand out as dramatic exceptions. They have been built through acts of leadership and organization, not legislated, mandated, regulated or coerced. The policy challenge is to enlarge their number.

Six principles for professional development

The strategies of professional development described above embody, each to a greater or lesser extent, certain principles that arguably stand up to the complexity of present reforms. Each principle represents a challenge to some aspect of present practice. Each is manifest in one or more of the alternatives to the conventional training model that are emerging in the context of present reform. Although stated as design principles—that is, in normative language—they are subject to the kinds of rigorous study and evaluation by which their consequences for teachers, students, and the nature of schooling might be demonstrated. Teachers' professional development might reasonably be tested against these principles:

1. Professional development offers meaningful intellectual, social, and emotional engagement with ideas, with materials, and with colleagues both in and out of teaching. This is an alternative to the shallow, fragmented content and passive teacher roles observable in much "implementation training." Teachers do not assume an active professional role simply by participating in a "hands-on" activity as part of a scripted workshop. This principle also

acknowledges teachers' limited access to the intellectual resources of a community or a subject field. Thus, the subject matter collaboratives engage teachers in the study and doing of mathematics, enlarge teachers' access to mathematicians and mathematical ideas in university or industry settings, and establish mechanisms of consultation and support among teachers.

2. *Professional development takes explicit account of the contexts of teaching and the experience of teachers.* Focused study groups, teacher collaboratives, long-term partnerships, and similar modes of professional development afford teachers a means of locating new ideas in relation to their individual and institutional histories, practices, and circumstances. This principle thus challenges the context-independent or "one size fits all" mode of formal staff development which introduces largely standardized content to individuals whose teaching experience, expertise, and settings vary widely. The training and coaching model, which by its nature tends to assume the importance of its training content, grants only residual status to questions regarding the fit between new ideas and old habits, or between new ideas and present circumstances.

3. *Professional development offers support for informed dissent.* In the pursuit of good schools, consensus may prove to be an overstated virtue. Admittedly, deeply felt differences in value and belief can make agreements both difficult to achieve and unstable over time. At its extreme, dissent may engender a certain micropolitical paralysis (see Ball, 1987), while shared commitments may enable people to take bold action. To permit or even foster principled dissent (for example, by structuring "devil's advocate" roles and arguments) nonetheless places a premium on the evaluation of alternatives and the close scrutiny of underlying assumptions. To do so may alter that dynamic by which dissenters come quickly to be labeled as "resisters." Although specific examples do not abound, one might expect that close collaborations and long-term inquiry-oriented partnerships provide more opportunity than do training experiences for the kind of principled and well-informed dissent that strengthens both group decisions and individual choices (e.g., Nemeth, 1989).

4. *Professional development places classroom practice in the larger contexts of school practice and the educational careers of children.* It is grounded in a "big picture" perspective on the purposes and practices of schooling, providing teachers a means of seeing and acting upon the connections among students' experiences, teachers' classroom practice, and school-wide structures and cultures. This is a challenge to a narrowly "technological" view of curriculum reform that depends heavily on the accumulation of specific technical skills, and to the tendency to treat teachers nearly exclusively as classroom decision makers independent of larger patterns of practice. It recalls Fullan's (1991) argument that reforms or innovations are simultaneously technical and social, and underscores the balance of obligations and opportunities in teachers' professional development. Partnerships and collaboratives to a large extent engage these multiple levels and aspects of reform; special institutes do so to some extent when they help prepare teachers to assume leadership or assistance roles in their schools or districts.

5. *Professional development prepares teachers (as well as students and their parents) to employ the techniques and perspectives of inquiry.* Without denying that there are times

when technical skill training is indeed appropriate, this principle anticipates a model based more persuasively on the pursuit of knowledge. It provides the possibility for teachers and others to interrogate their individual beliefs and the institutional patterns of practice. It acknowledges that the existing "knowledge base" is relatively slim, and that our strength may derive less from teachers' willingness to consume research knowledge than from their capacity to generate knowledge and to assess the knowledge claimed by others. Those teacher consortia and partnerships centered most directly on teachers' research come closest to embodying this principle.

6. The governance of professional development ensures bureaucratic restraint and a balance between the interests of individuals and the interests of institutions. Despite some well-publicized exceptions such as the various subject matter collaboratives, the field is dominated by a district-subsidized marketplace of formal programs over which teachers exert little influence or in which they play few leadership roles. Further, few states or districts have any mechanism for evaluating the criteria on which resources are allocated; few have examined the ways in which the entire configuration of professional development obligations and opportunities communicate a view of schools, teachers, teaching, and teacher development. Evaluation and research, to the extent that they exist at all, tend to center on individual projects rather than on the policy import of whole patterns of resource allocation (for exceptions, see Moore and Hyde, 1981; Schlechty et al., 1982; Little et al., 1987). A principled view of resource allocation might more readily balance support for institutional initiatives, with those initiated by teachers individually and collectively.

Comparison of the training model with various alternatives suggests that there are precedents worth preserving and dilemmas worth revealing. To start, it seems we must be willing to ask : Among the formal activities or agreements that make up the most common approaches to professional development, where does one find the most ambitious reflection of the six principles? Even among the alternatives described here, some principles are more clearly evident than others. Principles 3 ("informed dissent") and 4 (the "big picture" or systemic view) prove most difficult to locate, though they are arguably central to professional development that is at once intellectually rigorous and socially responsible. What are the most challenging issues?

IV. Emerging issues

In the present reform context, three issues dominate policy considerations in the design of professional development:

> The sheer complexity of the reform tasks being proposed, together with the relative absence of tested principles, policies, and practices; the contradictions across policies; and the propensity to seize upon early-stage experiments as "models."
>
> The problem of "fit" between the task of reform and the prevailing models of professional development —in particular, the dominance of a training paradigm built on "knowledge consumption," and the lesser support for an inquiry and problem-solving paradigm built around "knowledge production."

The relative inattention to teachers' "opportunity to learn" within the salaried work day and work year—an issue in the social organization of teachers' work in schools and their participation in a wider professional community.

The complexity and uneven pace of systemic reform

Complexity and ambiguity are inherent features of the more ambitious reforms, making progress uneven and difficult to detect. The picture is complicated further by the internal contradictions of the reform movement itself, e.g., in the competing views of schooling and teaching inherent in the basic skills reforms that still dominate urban reform versus the more "ambitious" outcomes embodied in the NCTM standards and in other reform initiatives that emphasize higher order thinking. Confronted with complexities, ambiguities, and contradictions, individuals and institutions move forward in fits and starts. The professional development problem mirrors the larger problem of reform in several ways.

Limited grasp of possibilities. Asked to participate in the redesign of their work and work place, participants at first invent a narrow range of responses or solutions. Michelle Fine, who chronicles the progress of Philadelphia's reform effort, says simply: "The categories people have in their heads are the categories people have in their heads" (Fine, 1992, p. 20). Inertia prevails, undergirded by established ideologies that explain and defend massive student failure (see also Fine, 1991). Such explanations "block any sense of possibility (p. 22). Even among enthusiastic teachers, Fine observes, few could imagine a "sufficiently collective effort" to produce substantial improvements in student outcomes (p. 21).

Conventional forms of professional development and support grounded in "training" are poorly conceived to help people expand the possibilities for learning, teaching, and schooling. Rarely do they contend with fundamental debates and disagreements about the purposes of schooling, the relationships between teachers and students, and the obligations of teachers to a wider larger community. It seems unlikely that teachers' sense of possibility will be enlarged in the absence of expanded information, deeper discussion and debate, and a tolerance for public dispute over fundamental matters. After three years, Fine considers it progress in Philadelphia "that at least now people are fighting aloud" (p. 21).

Policy collisions and the legacy of past reforms. Most plans for systemic reform or restructuring underestimate the sustained impact of long-standing policy and practice. Teachers and administrators witness "policy collisions" between present reforms and their predecessors, many still reflected in statute, regulation, policy, and local habit. Darling-Hammond (1990) reminds us that "policies do not land in a vacuum; they land on top of other policies" (p. 240). She notes with respect to California's new curriculum frameworks: "...several previous policy initiatives stand out sharply as competing with the new reform" (p. 237). Among them she names the state's standardized testing system, "which values a type of mathematical knowledge and performance very different from the conceptions embodied in the new Framework." (p. 237). She goes on to argue: "In several respects, policy accretion is a more difficult problem than the older problem bemoaned by reformers (which has not left us) of ingrained tradition. ... This can create an Alice in Wonderland world in which people

ultimately begin to nod blithely at the inevitability of incompatible events..." (p. 238). (See also Evertson and Murphy, in press).

Pressures for fast-paced implementation. Systemic change is also undermined when local and state leaders attempt to reduce conceptual and practical complexities in the interest of a fast-paced implementation. The California curriculum frameworks serve as one example of a complex policy instrument that is experienced in distilled form by classroom teachers. In her introduction to a series of case studies of the math framework implementation, Linda Darling-Hammond (1990) observes: "The cases suggest that, at least from the vantage point of the teachers interviewed, the mathematics curriculum framework consisted of a 'statement'...and its transmission to them occurred when they were handed new textbooks, selected by the local administration after being approved by the state as compatible with the framework" (p. 236; see also Peterson, 1992).

The magnitude of the task. Observers remind us of the sheer difficulty of the reform task, and the toll that it takes on people. The work of systemic reform is enormously difficult, frustrating, slow--and rewarding. Fine (1992) says once-discouraged teachers are "back" in droves but they must contend with powerful dilemmas. They experience the frustration of doing what is while envisioning what could be—what Debbie Meier, principal at Central Park East (New York City), is famed for describing as changing the tire on a moving car. A certain amount of "institutional schizophrenia" is generated around specific institutional routines— practices of student evaluation, for example. And the burden is felt especially by the "front runners," the ones that Schlechty would call the "trail-blazers" (Cole & Schlechty, 1992). They "offend almost every vested interest, at some point" (Fine, 1992, p. 24).

Political will. The success of the trail-blazing individuals and institutions will rest ultimately on a crucial fund of political will. Whatever the shortcomings of the knowledge base on which reform stands, we can nonetheless assert that we have sufficient knowledge to move forward; we have "the knowledge, methods, assessment strategies to transform our classrooms into engaging, critical and creative sites of intellectual growth and personal development"(Fine, 1992, p. 30). What remains uncertain is whether we have the political will to employ our knowledge in the service of public (and particularly urban) education. Professional development, in this view, will prove fruitless if it fails to cultivate and sustain political will.

The available (though rare) accounts of large-scale restructuring efforts thus underscore the systemic character of reform and, correspondingly, the collective capacity needed to achieve and sustain it. But professional development practice remains, on the whole, highly individualistic. Rates of participation vary enormously, generating "radically different profiles of professional development for teachers with comparable experience and teaching assignments" (Lanier and Little, 1986, p.548; also Arends, 1983). These differences appear to persist even in schools formally "committed" to reform initiatives.

A shift to "school-based" initiatives does not necessarily alter the variable pattern of individual practice. Schools associated with the Illinois Writing Project showed promising changes in language arts scores, but in the urban schools "typically less than half the teachers

in each building attended the voluntary, after-school workshops" (Chicago Project on Teaching and Learning, 1992, p.1). What we do not learn is why. Were teachers opposed to the assumptions and practices of the Writing Project? Unimpressed with the quality of the workshops, or already expert in the practices ? Pressed by the demands of too many projects, or too burdensome a teaching load? Committed to other activities that required time, thought, and energy? Not persuaded that participation would make a difference to the students they taught? Discouraged by failures of administrative leadership? Truly discouraged about teaching?

Here we have a tension between institutional imperatives and individual prerogatives, between the conditions necessary to attempt systemic change and the conditions that engage individual teachers in their work. At best, these are in harmony; at the least, we must learn the sources of conflict between them. We will be better served by knowing the grounds on which teachers choose to participate or not. As a context for professional development, reform movements place a premium on institutional perspectives. They may absorb all of the resources available for teachers' professional development, leaving little in the way of subsidy for individually-inspired intellectual pursuits that may also, in quite different ways, make a difference to the character of schooling.

In any event, the complexities and tensions illustrated here are not resolved by any simplistic distinction between "voluntary" and "mandatory" occasions of professional development. More productive will be careful consideration of teachers' professional obligations and opportunities, of the balance and tension between individual latitude and collective endeavor, and of the resources and rewards devoted to each.

Problems of "fit:" Professional development models and the task of reform

Without becoming preoccupied by barriers to reform, we might highlight five issues that states and localities confront in matching professional development to the challenges surrounding systemic reform.

Innovation on the margins. The training paradigm dominates the world of teachers' professional development. Short-term skill training workshops far outnumber teachers' study groups and well-conceived teacher research. But the training paradigm has also come under assault: Critics charge that most training places teachers in passive roles as consumers of knowledge produced elsewhere; that the "workshop menu" is fragmented in content, form, and continuity—at precisely the time when teachers are confronted with the challenge of redesigning the way we do schooling (Moore and Hyde, 1981; Little, 1989).

Alternative approaches of the sort described above have gained the admiration of teachers, administrators, school boards, and state policy makers. Some, to be sure, have grown in stature and reach over the past decade. The history of the Bay Area Writing Project is a case in point; the BAWP model now guides a large number of local and regional projects in many states, and serves as the basis for comparable projects in math and science. It has attracted state and local district funding.

On the whole, however, innovative approaches to teachers' professional development— those that correspond most closely to the principles outlined above—remain small in scale and number. Most have been supported with private dollars (foundation and corporate funding) and have made relatively little impact on the configuration of publicly-supported professional development. Such partnerships have formed between individual activists in universities and schools or districts, or between individual consultants and schools, or between departments of education and local schools. In large institutions, multiple "partnerships" may operate in ignorance of one another's efforts, or in pursuit of quite different or even conflicting goals.

Lord (1991) maintains that the subject matter collaboratives have "magnified the impact of local resources—both human and financial," but provides no detail (p. 1). Meanwhile, the risks associated with moving from the margins to the center are well-known: teacher-centered programs such as the Bay Area Writing Project or the Los Angeles Educational Partnership's teacher networks risk "bureaucratization" when they are absorbed within district structures.

The limitations of packaged knowledge and standardized programs. Given the option, district and school administrators say they will opt for a "well-packaged program" of staff development (Little et al., 1987). Packaged programs have an understandable appeal. They are readily defended, managed, and evaluated. Most district-sponsored staff development is oriented toward the acquisition of specific knowledge and skill; assessing "impact," though it is rarely done, is relatively straightforward (especially if centered on changes in observable teacher behavior).

Alternative approaches, by comparison, are conceptually and pragmatically messier. The main benefits that participants derive from teacher networks, study groups, curriculum experiments, and the like may be more broadly intellectual, motivational, and attitudinal. By acknowledging the importance of teachers' intellectual curiosities and capacities, and by crediting teachers' contributions to knowledge and practice, such approaches may strengthen the enthusiasm teachers bring to their work and the intellectual bent they display in the classroom. Over the long run, teachers who participate in experiences of this sort might be expected to show higher rates of classroom innovation and to inspire greater enthusiasm for learning on the part of their students. Nonetheless, appropriate comparisons with conventional staff development are likely to prove very difficult. This is due in part to differences in program aims, content, and format, and due in part to the difficulty of tracing the crucial longer-term consequences for individual teachers.

The proliferation of classroom- and school-based studies over the past two decades has fed the organized professional development marketplace. "Research says" is a common preface to many workshop presentations and exercises, serving as a warrant for recommended practice. But "research says" has increasingly become a means for exercising institutional authority rather than for informing teachers' judgments or framing their own inquiries. Teachers are typically less well positioned than district specialists or outside consultants to invoke research (or challenge it) as a warrant for action—they have less routine access to sources of research, less time to read and evaluate it, and less familiarity with its arcane language.

What is inevitably hidden in the effort to "translate" research are all the ways in which the

research findings conflict, or are limited by design flaws, or reflect particular conceptions of the phenomena under study. What also is missing is an invitation to teachers to act not only as consumers of research but also as critics of research and producers of research—to be participants in a more visible and consequential manner. An alternative to the formulation "research says," reads something like: "The way this question has been framed in most research is...." Or: "There are three main approaches to this problem in research so far. Here's what each has produced...." These formulations leave open the possibility that the available research knowledge is incomplete and that there is room for discovery. They neither romanticize teachers' knowledge nor unduly privilege researchers' claims.[3]

The status of the "knowledge base" in support of systemic reform is uncertain. Some argue that the base is strong, others that it is more hortatory and ideological than it is theoretically coherent or empirically defensible. Advocates of reform argue that we know enough to make considerable difference in the ways that students experience school and the benefits they derive from schooling. Whatever the strength of that claim, it also seems certain none of the knowledge we assert will be adequate to account for the complexities of any specific context, and that there is no substitute for local invention and inquiry. These circumstances prompt various responses to the burgeoning "teacher research" movement (not the first such movement in this century). In recent symposia on the subject, debate revealed widely diverse and competing views teachers' preparation to engage in "research," the nature of research topics and methods, conventions associated with legitimation of research, and issues surrounding the political control of research agendas and products (see Hollingsworth and Sockett, in press).

Phillip Schlechty is fond of observing that we are still confined by unworkable conceptions of school and school improvement, much as if NASA had decided that we could get to the moon by funding improvements in the internal combustion engine.[4] In the allocation of professional development resources, we find a tremendous reliance on "research-based" solutions, on being able to give assurances of certainty. Our own voyage to the moon may require that we abandon our reliance on the present base of "consumable" research and expand our support for arrangements for teachers' involvement in the explication, invention, and evaluation of local practice.

The dominance of "training" over problem solving. States and local school districts have learned—in part, anyway— the lesson of the "implementation problem" and the importance of adequate local support. In the late 1970s, one could reasonably charge that "many... education reform efforts fell short primarily because planners seriously underestimated teacher training needs" (McLaughlin and Marsh, 1979, p. 69). An adequate supply of well-conceived training opportunities seemed a major contributor to implementation success. More than a decade later, we boast a more sophisticated understanding of the implementation problem, casting it as a complex interaction between external policy variables (clear statutes, effective authority, and the like) and the micro-contexts shaped by individuals' and groups' commitments, histories, and politics (McLaughlin, 1987, 1990; see also Ball, 1987). Our conception of implementation has evolved "from early notions of implementation as transmission or as a problem of incentives or authority to conceptions of implementation as bargaining and transformation" (McLaughlin, 1987, p. 175). Looking back at the celebrated

Rand Change Agent Study (1973-1978) from a vantage point of nearly fifteen years, McLaughlin (1990) expresses a certain skepticism about the power of policy mandates, especially those that take the form of special projects aimed at "discrete elements of the education policy system" instead of embracing the systemic nature of problems and the systemic character of local practice (pp. 14-15).

But districts' strategies for reform, at least with regard to teachers' professional development, do not appear to capitalize fully on what we have learned about the importance and variability of local contexts and about the transformational nature of reform. "Inservice" activities tend to be linked to special projects or to discrete components of "reform, " and to embody a relatively traditional conception of classroom experience. The most sophisticated of these make some provision for follow-up in the form of classroom consultation and coaching.

The training-and-coaching strategy that dominates local professional development has much to recommend it when considered as a balanced part of a larger configuration, and when linked to those aspects of teaching that are properly rendered as transferable skills. But the training model is problematic. The content of much training communicates a view of teaching and learning that is at odds with present reform initiatives. It is not at all clear, for example, that any form of training is adequate to develop the "substantive conversation" that Newmann (1990) envisions (see also Hargreaves and Dawe, 1990). Nor is the content of training set against the content of local belief, practice, and policy in any meaningful and detailed way. In addition, principles of "good training" are frequently compromised in practice. In particular, schools and districts demonstrate far less capacity for classroom consultation and support than is required by the training and coaching model. Those persons typically designated as "coaches" or "mentors" are far outnumbered by their clientele of regular classroom teachers. They are further constrained by school workplace cultures that perpetuate a norm of privacy and constrain advice-giving (Little, 1990b). Finally, to attain results from the training/coaching model requires a consistency of purpose and a coordination of effort that is not the norm in many districts. Rather, districts parade a litany of short-term goals in their response to various state mandates and incentives, local constituencies, or the individual enthusiasms of superintendents, school board members, or others.

Having launched such criticisms, I want to reiterate that the skill training and coaching model to which so many districts seem wedded has demonstrated consistent results in those cases where training content can be represented as a repertoire of discrete practices, and where classroom performance is oriented toward specified student outcomes. At their best, local activities incorporate the wealth of research on effective training and support that we can trace to the various "implementation of innovation" studies and to studies of specific professional development ventures (Guskey, 1986; Showers, Joyce, and Bennett, 1987; Romberg and Price, 1983; Sparks, 1986; Smylie, 1988; Sparks and Loucks-Horsley, 1990). Nor are these remarks in any way meant to impugn the knowledge, skill, thoughtfulness, or good intentions of those persons designated by local districts as staff development specialists, coaches, mentors, and the like. Rather, the aim is to record the dominance of the training model, the possibilities it offers, and the constraints on its effectiveness.

Conceptions of cost or "investment". Policy makers require a way of making sense of

costs—or more persuasively, investments. This note centers on issues surrounding the allocation of discretionary resources—the monetary expenditures that typically come to mind when persons consider staff development budgets. "Direct monetary expenditures" includes only those costs directly and necessarily associated with program operations; these include staff salaries, workshop presenters, substitutes, and facilities. (For a broader conception of investment and its relation to policy considerations, see Stern, Gerritz, and Little, 1989; and Little, 1992b). One straightforward way to compare "costs" is to divide the direct monetary expenditure by the number of actual participants to arrive at a per participant cost. By this calculation, the per participant cost of some special projects may exceed $2000.

How does this figure compare to the average per teacher investment in professional development? In relative cost terms, institutes and retreats are an expensive venture; ongoing local study groups and after-school workshops are not. The average per teacher investment of direct monetary expenditures in California in 1985-86 (the only year for which such estimates are available) was approximately $900 (Little et al., 1987). That is, the total annual professional development of the average California teacher was subsidized by approximately $900 in public monies over a single fiscal year. A program that invites 25 teachers to a retreat for 5 days will invest more than one and a half times the resources per participant in 3-5 days than local districts typically invest in an entire year of a teacher's professional development.

The "average teacher" figure is, of course, something of a fiction; resources are not distributed uniformly. Experimental programs typically invest higher amounts in smaller cadres of teachers. The most prominent example in California at present is the California Mentor Teacher Program, which allocates approximately $6000 per year to each teacher selected as a mentor. The mentor program's per participant investment is thus nearly 7 times the average per teacher expenditure. (Two-thirds of that allocation goes directly to the teacher as a stipend; the remaining third is allocated to the district in support of the mentor's work). The program reflects an implicit policy wager: that concentrating resources on fewer than 5 percent of the state's teachers will yield benefit for the remaining 95 percent (see also Little, 1990b). The legislative intent attached to the mentor program outlines a set of obligations to beginning teachers, experienced teachers, and curriculum development; to the extent that mentors meet these obligations, they generate a "ripple effect" that lowers the per participant cost. That is, to the extent that the effects extend beyond those individuals who are the primary participants, the per teacher cost is appreciably lower than the per participant cost.

Investments beyond the ordinary (that is, narrow concentrations rather than broad distribution of resources) are more defensible if they can meet one of three criteria: (1) they can be credibly tied to a ripple effect (so that per teacher cost is demonstrably lower than per participant cost); (2) one can claim that the direct individual benefit of this specific program is far more certain than the benefit linked to conventional funding; or (3) the program contributes in demonstrable ways to increased organizational capacity in ways that transcend the impact on those individuals who participate directly in the "program."

The state and other players. When we consider levels of policy intervention and influence, we quickly find the state and the district to be the most prominent players in defining and

promoting reform, and in sponsoring formal occasions of professional development. In the past decade, states have assumed greater prominence in shaping reform initiatives. This is not to say that state policy offers a coherent vision of the fit between teacher policy and various reform ventures (Little et al., 1987). Nor is it clear that state agencies and legislatures have given much consideration to the various possible forms that a state presence might take—though in some of the more policy active states, such as Connecticut, Kentucky, California, and Oregon, the traditional impetus toward regulatory control is increasingly tempered by a role centered around the supplying information and incentives for local experimentation.

On the whole, however, states and districts have been relatively slow to reshape professional development in ways that respond to the complexities and ambiguities of reform. Much reform legislation reflects a tension between incentives and control, between provisions that expand teachers' leadership opportunities (for example, California's mentor teacher program) and provisions that tighten external controls over teaching and teachers. (for example, new credentialing requirements or curriculum standards). On the whole, the incentives are attached to small, voluntary, and peripheral activities, while the controls embrace the entire teacher workforce and shape more central aspects of their work. In this asymmetry between support and control we may find some evidence of a pervasive skepticism among policy makers about teachers' capacities and motivations, and thus a certain reservation about professional development strategies that measurably expand teachers' collective autonomy.

Meanwhile, the responsibility and resources for teachers' professional development have for several decades (since the mid-sixties' federal social reform legislation) resided primarily with districts—that is, with the employing organization.[5] The shift to the school site brings control over resources closer to the classroom and increases the possibility that content and context might be more closely joined. Altogether, the profoundly local character of much reform activity would seem to offer substantial opportunity to create and support alternative modes of professional development—those that enable local educators to do the hard work of reinventing schools and teaching. But there is no guarantee of that. If the established marketplace of training options fits poorly with the demands of reform, it nonetheless fits reasonably well with bureaucratic structures of accountability (by providing a record of "participation"). If a menu of workshops fits poorly with the long-term vision and capacity required by genuine reform, it responds well to the short-term incentive structure and resource allocation scheme. Finally, staff development at the local level, despite the pervasive rhetoric of change, serves in large part as a vehicle of organizational maintenance--a point worth remembering in the surge of interest toward reform (Schlechty and Whitford, 1983).

States and districts have emerged as the most visible and powerful players on the reform landscape. Less visible but potentially influential in achieving the fit between reform requirements and teachers' professional development are the various professional associations (teachers, administrators, other specialists, and school boards) and organizations representing business and industry. Foundations have been active in the support of various reform efforts, including those devoted to teachers' professional development, but it is only very recently that they have begun to join directly with states in pursuit of a reform agenda (Lagemann, 1992). Of particular interest and import is the increasingly powerful influence exerted by teachers'

subject matter associations (perhaps most prominently, NCTM) in shaping reforms in curriculum, assessment, and standards for teacher certification. Yet the place of subject matter associations in the lives and careers of teachers, and especially in preparing them to engage meaningfully and productively in reform, remains largely unexamined in the research and policy literature; recent case studies of the various mathematics collaboratives may signal a shift (Lord, 1991; Salmon-Cox and Briars, 1989). On the whole, however, available evidence suggests a weak connection between those subject associations and the main providers of professional development (the districts, private vendors, and universities).

The disposition of the unions toward these major reform initiatives—and particularly any response they may have made in the form of teachers' professional development—is largely undocumented. In interviews with union leaders in thirty California districts, conducted in 1986 (Little et al. 1987), we found that most locals concentrated on constraining administrators' access to teachers' time for purposes of school- or district-initiated staff development. We found no examples of a more affirmative or proactive involvement in substantive programs of teacher development although some promising exceptions have emerged since that study was completed, e.g., in the form of the policy trust agreement projects established in California (Koppich and Kerchner, 1990). Nor do we know much about the relative salience of the union compared to other sources in shaping teachers' response to or involvement in reform initiatives (Bascia, 1992). One is struck by some countervailing currents. First, the unions have responded to escalating pressure to balance a concern with personnel issues (compensation and other conditions of employment) with responsible attention to matters surrounding professional practice. Second, the unions have become more frequent and prominent players in shaping the reforms in teaching at the state or national level—most often those having to do with the preparation and licensure of teachers. Their involvement at the local level is less clear, and certainly more uneven. Among the issues most germane to the major reforms discussed here are perceived constraints on teacher autonomy with regard to curriculum and instruction, and challenges to the deep-rooted egalitarianism of teachers that arise in various career ladder and mentorship schemes.

We thus have multiple players and multiple levels of policy and practice. Two major questions seem germane. First, what "fit" between reform and professional development is best achieved at each level or niche in the policy system, and through what policy mechanism? To what extent does policy making in each arena rely on regulation or persuasion? Second, in what ways and to what extent are the various policy orientations congruent or in conflict? For example, university faculty have maintained an avid interest in the development of state curriculum frameworks—yet university admission requirements have also been said to exert a "chilling effect" on innovation in the K-12 curriculum (Grubb, personal communication, 1992). That is, colleges and universities may simultaneously foster and impede reform. At the local level, a district's interest in "comprehensive restructuring" may operate to displace small, vital pockets of initiative by teachers in individual schools.

The school work place and teachers' opportunity to learn

Concentration on formal programs of professional development tends to obscure issues of obligation, incentive, and opportunity in the salaried work day and work year. Investigation

of teachers' instructional assignments, ratio of in-class to out-of-class time, and school-level affiliations (departments, grade levels, friendship nets) provides us both with a perspective on motivation or pressure to learn and with a description of those opportunities to learn that are embedded in the social organization of schools (Little, 1990a; see also Hargreaves, 1990; Glidewell et al., 1983; Smylie, in press).

Teachers' central reasons and opportunities for professional development begin with the teaching assignments they acquire, the allocation of discretionary time, and other work conditions encountered day-by-day. They begin, that is, with a teacher's experience of what it is to teach and to be a teacher—in general, and in particular circumstances. To some large degree, it is only in relation to the daily experience of teaching that one can anticipate the contributions of more structured opportunities that range from independent reading to formal coursework, conference attendance, skill training workshops, leaves or sabbaticals, participation in committees or special projects, and scheduled consultation with colleagues.

Reform movements tend to orient us toward an institutional (and largely functionalist) perspective. By this perspective, the schools' capacity for supporting the professional development of teachers is expressed in a system of obligations, opportunities, and rewards. Teachers' obligations for professional preparation and development reside formally in certification and recertification requirements, teacher evaluation standards, and other personnel policies and practices. They are communicated informally by institutional norms regarding teachers' performance.

In privileging the institutional and collective view, however, the language of reform underestimates the intricate ways in which individual and institutional lives are interwoven. It under-examines the points at which certain organizational interests of schools and occupational interests of teachers may collide. Critics of reform movements stress the tendency to "de-skill" teaching and a corresponding tendency to legitimate institutional surveillance and coercion under the rubric of "vision" and "instructional leadership" (Carlson, 1992; Hargreaves, 1992). Carlson (1992) describes the principled opposition mounted by a teachers' association to the "specter of standardization" they detected in basic skills reforms built around programmed materials, prearranged objectives, and batteries of standardized tests (p. 113). Smylie and Smart (1990), examining sources of support for and opposition to merit pay and career ladders, note that "the primary beliefs and assumptions that guide the development of relationships among teachers include norms of independence and professional equality" and it is naive to suppose that such programs will generate widespread support unless they resolve "social and normative incongruities" (p. 152, 153). Each of these cases is consistent with the observation that members of an occupational community may find that "what is deviant organizationally may be occupationally correct (and vice versa)" (Van Maanen and Barley, 1984, p. 291).

As the arena in which teaching traditions and reform imperatives confront one another most directly and concretely, the school workplace is both the most crucial and the most complex of domains in which we play out the possibilities for teachers' professional development. Teachers' motivations, incentives, and frustrations come foremost from the immediacy and complexity of the classroom: teachers' responses to the students they teach and the

circumstances in which they teach them. Idiosyncratic classroom realities may take precedence over broader institutional interests, leading teachers to protect a "strategic" or "elective individualism" (Hargreaves, 1993; see also Flinders, 1988). The impetus to protect one's autonomy may be intensified by various circumstances surrounding collegial and institutional life—the norms underlying peer acceptance and admiration, and the fabric of relations between teachers and administrators. The Academics and Coaches who make up the dominant cliques in Bruckerhoff's (1991) social studies department at Truman High express quite different teaching priorities, but they have in common their selective resistance to administrative pressures. Clearly, taking the workplace seriously requires more than shifting staff development resources and activities to the school site.

Conclusion

Five streams of reform present a challenge of considerable complexity, scope, and ambiguity. Yet the present pattern of professional development activity reflects an uneven fit with the aspirations and challenges of present reform initiatives in subject matter teaching, equity, assessment, school organization, and the professionalization of teaching. Much "staff development" or "inservice" communicates a relatively impoverished view of teachers, teaching, and teacher development. Compared to the complexity, subtlety, and uncertainties of the classroom, professional development is often a remarkably low-intensity enterprise. It requires little in the way of intellectual struggle or emotional engagement, and takes only superficial account of teachers' histories or circumstances. Compared to the complexity and ambiguity of the most ambitious reforms, professional development is too often substantively weak and politically marginal.

Professional development must be constructed in ways that deepen the discussion, open up the debates, and enrich the array of possibilities for action. Ground for optimism resides in those "innovations on the margin" that embody principles consonant with the complexity of the reform task and with the capacities and commitments of a strong teacher workforce.

Endnotes

1. Such descriptions may be in the making. For example, see Fine (in press), Evertson and Murphy (in press), and Murphy (1991).

2. Throughout these examples are references to teachers' own research and to teachers as researchers. In some important respects, teachers' expanding presence as a distinct community of educational researchers has taken on the character of a movement. Teachers' research—as an intellectual and political enterprise—has been the focus of recent AERA symposia, the subject of a forthcoming NSSE volume (Hollingsworth and Sockett, in press), and a means for investigating the nature of professional community among teachers (Threatt, Buchanan, Morgan, Sugarman, Strieb, Swenson, Teel, and Tomlinson, in press).

3. On the problems of the former, see Buchmann, 1990; and for an example of a challenge to researchers' privileged standing in the reform discourse, see Nespor and Barber, 1991.

4. 4. I have recalled this example from various speeches, but Schlechty (1990) elaborates the basic argument.

5. The steady shift away from participation in university coursework and toward district-centered activity can be attributed only in part to changes in the age distribution of the teacher workforce. Over the past two decades formal staff development has become district business, conducted largely by specialists located in a district's central office (Moore and Hyde, 1981). Teachers are more likely to choose from a menu of district-sponsored workshops than they are to receive release time or other individual subsidies to attend conferences hosted by subject area associations or institutes sponsored by universities (Little et al., 1987).

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Realizing the Promise of Technology: The Need for Systemic Education Reform*

Jane L. David

The Unfulfilled Promise of the 1980s

Technology** holds great potential for revolutionizing education. This claim has been widely heard since microcomputers first appeared well over a decade ago. Since then, technology's exponentially increasing power, decreasing costs, portability, and connectivity have surpassed the wildest dreams of the early 1980s. Yet inside classrooms across the country, there is little evidence that any kind of revolution has occurred, and remarkably little evidence of technology.

The primary reason technology has failed to live up to its promise lies in the fact that it has been viewed as an answer to the wrong question. Decisions about technology purchases and uses are typically driven by the question of how to improve the effectiveness of what schools are already doing--not how to transform what schools do. Consequently, choices about instructional hardware and software are based on whether they are likely to increase standardized test scores. Choices about administrative technology are made to facilitate existing financial and recordkeeping systems. Moreover, as has been typical with innovations of the past, scant attention has been paid to preparing teachers and administrators to use new technology well and even less to their preferences about hardware and software. Instead, the acquisition of technology has been viewed as an end in itself, and the more "teacher-proof" the better.

Systems designed specifically to increase standardized tests scores on basic skills--and do recordkeeping as well--have grabbed the largest share of the market. The focus on raising test scores as justification for investing in technology and the corresponding lack of investment in educating teachers and administrators about technology--and effective ways of learning--makes school districts easy targets for marketing claims by hardware and software vendors. Vendors who can demonstrate "alignment" with existing curricula and tests are more likely to make large sales than those who push technology as a tool to transform teaching and learning. Educator and policymaker bewilderment about technology simply adds

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* I am indebted to the participants in the 1992 Christa McAuliffe Institute Summer Conference, sponsored by the National Foundation for the Improvement of Education, who took time from their busy schedules to answer my questions.

** I use "technology" to encompass the whole range of new technologies from multi-media production to personal computing and telecommunications.

to the appeal of individualized, self-paced systems that require little, if any, teacher involvement. Moreover, the laboratory setting usually required for such systems ensures that teachers will remain uninvolved.

Imagine how different schools might look today if, instead of increasing the efficiency of current practice, the main goal for purchasing and using hardware and software had been to transform teaching and learning. The education reform agenda of the 1990s offers this opportunity. This new agenda is driven by a very different conception of what students should know and be able to do, how people learn, and, correspondingly, how schools and school systems should be organized.

Why the 1990s Are Different

The systemic reform agenda of the 1990s no longer aims to improve what schools are already doing. National and state policymakers, including governors as well as education and business leaders, now imagine a restructured education system that qualitatively increases the performance of all students. The language of this reform communicates a very different image of teaching and learning from the traditional one in which teachers "deliver" knowledge and assign seatwork. The new image captures a much more dynamic view of schooling in which teachers guide students through individual and collaborative activities that encourage inquiry and the construction of knowledge. Table 1 depicts some of the major ways in which educators (as well as students and the community) are being asked to change their beliefs about instruction. This conception of teaching and learning is much more compatible with the early visions of technology's promise.

There is an equally dramatic and analogous shift in the conception of how organizations change and the appropriate role of policy in that process. Previous waves of reform have amply demonstrated the futility of mandating challenging curriculum without changing the rest of the system in ways that support teachers. Policies to transform teaching and learning must transform the organization of schools and school systems as well. This new view of parallel organizational and instructional transformation shifts the role of policymaker, like that of the teacher, from telling others what to do to leading and supporting others to continually learn and improve. Policy changes from a tool to prescribe and control behavior to a tool to empower people and facilitate change with appropriate checks and balances.

This goal of systemic change--recreating an education system in which all students can reach much more challenging performance standards--puts the potential of technology in a very different light. The question is no longer how to use technology to do the same thing better. Now the question is how to use technology to change practice to reach new goals--as a catalyst for change and as a tool in creating, implementing, managing, and communicating a new conception of teaching and learning and a system that supports it. The olds goals as assessed by standardized achievement tests do not fall by the wayside. In fact, there is evidence that "basic skills" as defined by these tests are learned at least as well if not better through the kinds of more intellectually challenging experiences (Knapp, Shields, & Turnbull, 1992).

Table 1
SHIFTS IN TEACHERS BELIEFS AND PRACTICES

Shifts in Teacher Beliefs and Practices About:	Instruction	→	Construction
Classroom activity	Teacher centered Didactic	→	Learner centered Interactive
Teacher role	Fact teller Always expert	→	Collaborator Sometimes learner
Student role	Listener Always learner	→	Collaborator Sometimes expert
Instructional goals	Facts Memorization	→	Relationships Inquiry and invention
Concept of knowledge	Accumulation of facts	→	Transformation of facts
Demonstration of success	Quantity of memorized facts	→	Quality of understanding
Assessment	Norm-referenced Multiple-choice instruments	→	Criterion-referenced Portfolios and performances

Source: Dwyer & Ringstaff (1992).

Numerous examples of how technology can be used to transform teaching and learning exist across a wide variety of students and settings. These examples demonstrate that, under certain conditions, technology can stimulate and facilitate the introduction of project-based activities, student and teacher collaboration, and cross-disciplinary work. These experiences also document a range of outcomes that extend well beyond skill-based multiple choice items. See, for example, Pogrow (1990); Stearns et al (1991); Tierney et al (1992); Zorfass et al (1991).

Each of these efforts demonstrates that technology can be the vehicle for significantly changing what happens in classrooms and greatly expanding how and what students learn. For example, Tierney et al (1992) reports that high school students, after four years of exposure to computers as tools for exploration, "became independent and collaborative problem-solvers, communicators, record-keepers, and learners with the computers." (p. 11)

Although these interventions differ in technology applications, subject matter, student characteristics, and numerous other factors, they share three significant factors. First, they are based on the premise that understanding and problem solving require activities that engage

students in constructing knowledge.* Second, they incorporate intensive support for teachers' professional development. And, third, they involve only a small number of classrooms or schools.

In fact, the success of these projects has less to do with technology and more to do with the philosophy of learning and conception of professional development that they embody. Project staff provide ongoing assistance, facilitation, and professional development to teachers in support of transforming their practice. These knowledgable people are available on site and on line to guide, cajole, answer questions, as well as to offer specific training, development, and support. These support staff are learning alongside teachers what it takes to create inquiry-based learning environments. This is a far cry from the traditional workshop/training model of professional development. It is much closer to the kinds of learning opportunities teachers are asked to create for students.

The very reasons for the success of these small interventions are the reasons they have not been possible on a large scale. First, their goals and assumptions about teaching and learning are at best out of sync and at worst in direct conflict with school, district, and state goals for student learning. Second, they require a huge investment--some of which goes into technology but much of which goes into the people and the time to support major changes in practice.

Creating these kinds of new practices is difficult in the best of circumstances. In an inhospitable environment, they are impossible. In the current system, such interventions run counter to a multitude of existing policies and attitudes including the curriculum, what is tested and how, the ways teachers are evaluated, the expectations of students, parents and administrators, the school calendar and schedule, course requirements, and so on. The list is quite long. Like an interlocking jigsaw puzzle, trying to change the piece in the center--where students and teachers interact-- without changing all the layers of surrounding pieces is ultimately futile. With tremendous effort the shape of the piece can be changed, but over time the pressure from the other pieces of the system will force it to conform. Significant changes in teaching and learning require significant changes in the entire system.

Creating A New System

The systemic reform agenda of the 1990s takes on all these pieces. It is directed at changing every part of the system to support the creation of challenging learning environments in all schools. To the extent that systemic reforms make progress in changing the goals, structure, and supports of the system, efforts to introduce powerful uses of technology such as those referenced above will have a much easier time. They will be working towards the same goals instead of fighting an uphill battle.

Changing the goals, structure, and supports of the education system is a longterm undertaking.

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* This view does not exclude the need for practicing skills in a tightly structured environment. In fact, it enhances the learning of such skills by providing a context that gives them meaning.

It requires sustained leadership and patience. It also requires a very different approach towards policy making. Policies designed to stimulate systemic reform cannot be in the familiar form of a new program, a new set of requirements, or a new set of goals and policies superimposed on the existing system.

Systemic reform essentially requires turning the education system on its head. Instead of a system in which the top (whether district, state or federal) prescribes, regulates, and monitors schools, reformers envision a system in which the top sets goals and provides the flexibility, time, know-how, and assistance to schools to achieve them. Schools assume responsibility for reaching the goals and also accept the consequences of failure to do so.

Creating such a system recapitulates the same patterns and principles at each level--classrooms, schools, districts, and state agencies. Each level faces the need to balance direction and control from the top with professional autonomy and responsibility at the bottom--a balance totally out of kilter under the present top-down bureaucratic organization of schools, districts, and state education agencies.

At each level of the system, people are asked to take on more authority and responsibility--students for their learning; teachers for their effectiveness and professional growth; administrators for providing the necessary conditions for teachers; and policymakers to provide the direction, standards, and resources to guide and assist.

Translating these grand ideas into practice requires major changes in roles and responsibilities--changes which for many challenge beliefs about teaching and learning as well as beliefs about management. To do so, administrators, teachers, and students need on-the-job access to role models and expertise. They need the flexibility to create schedules and learning opportunities based on the particular context of a particular school and the needs of the individuals, teams, and faculties. Forty-two minute class periods in secondary schools do not provide enough time to undertake meaningful learning activities for students or for teachers.

These learning opportunities for teachers, like those for students, need to be authentic and collaborative tasks, like curriculum development, not traditional menu-driven workshops and packaged training programs (Little 1992). Only under a system with opportunities to learn new ways of leading and teaching, and the flexibility to put them into action, is it possible to imagine the process of school transformation unfolding (Ray 1992).

In a nutshell, policies to transform the education system into one that stimulates local educators to transform their schools need to

- Create challenging performance goals for all students with broad-based participation including educators and local communities.

- Reinforce learning goals with conceptually compatible curriculum guides, performance assessments, materials, and opportunities for educators to participate in their creation.

- Empower and enable school faculties to transform their organizations through decentralized budgets, flexibility, and access to ongoing professional learning opportunities.

- Develop a system of shared responsibility in which each level of the system is accountable for meeting its goals.

Such massive changes do not happen quickly. The barriers are formidable. Following decades of start and stop reforms, educators--especially teachers--are quite wary of new reform efforts. Teachers and administrators--as well as students and their parents--are accustomed to a system packed with demands and signals about what to do, many in conflict with each other. They have developed powerful coping strategies for functioning in this environment. Consequently, systemic reform requires a clear and consistent set of signals over a long period of time to have any chance of piercing this protective cover.

The vision of technology as a powerful tool for teaching and learning will not be realized under the present organization of schools and traditional instructional practices. The combination of the time and adaptability required for provocative exchange among teachers and between teachers and students and the limited resources available to public education requires a dramatically different image. Moving towards an image of schools as community centers and "learning organizations", open throughout the day and year, not only expands support for public education but may be the only way to realize sufficient cost savings to make technology affordable. Redefining staff roles and responsibilities, and drawing on the human resources of the local community, will also be essential elements of reform.

Local Conditions for Effective Technology Use

With the goals and structure of systemic reform in place, the vision of technology as a powerful tool for learning and managing can begin to be realized. Inside classrooms, a range of technologies from camcorders to computers can support inquiry-based learning. Video and computer technology can make possible the creation of new forms of assessment like student and teacher portfolios. Telecommunications can support the two-way flow of information necessary for decentralized decision making. Hypermedia, video, and networking technology can guide professional development, as well as provide access to new ideas, practices, and information resources (see, for example, Ball, Lampert, & Rosenberg, 1991; Newman, 1992). In fact, technology may be essential for fully realizing the goals of systemic reform by supporting activities otherwise impossible or prohibitively expensive (David 1991).

However, the policy structure for systemic reform is only the starting place. For technology to be used as a powerful learning tool and as a support for reform, certain local conditions must be in place. Whether the use is for administrative, managerial, or instructional purposes, the technology must be readily accessible and functionally suited to the task; and the user must have the necessary training, knowledge, and technical support to use the technology appropriately (see Figure 1). These requirements are elaborated below and apply to classroom instruction as well as to administrative, management, and personal productivity uses.

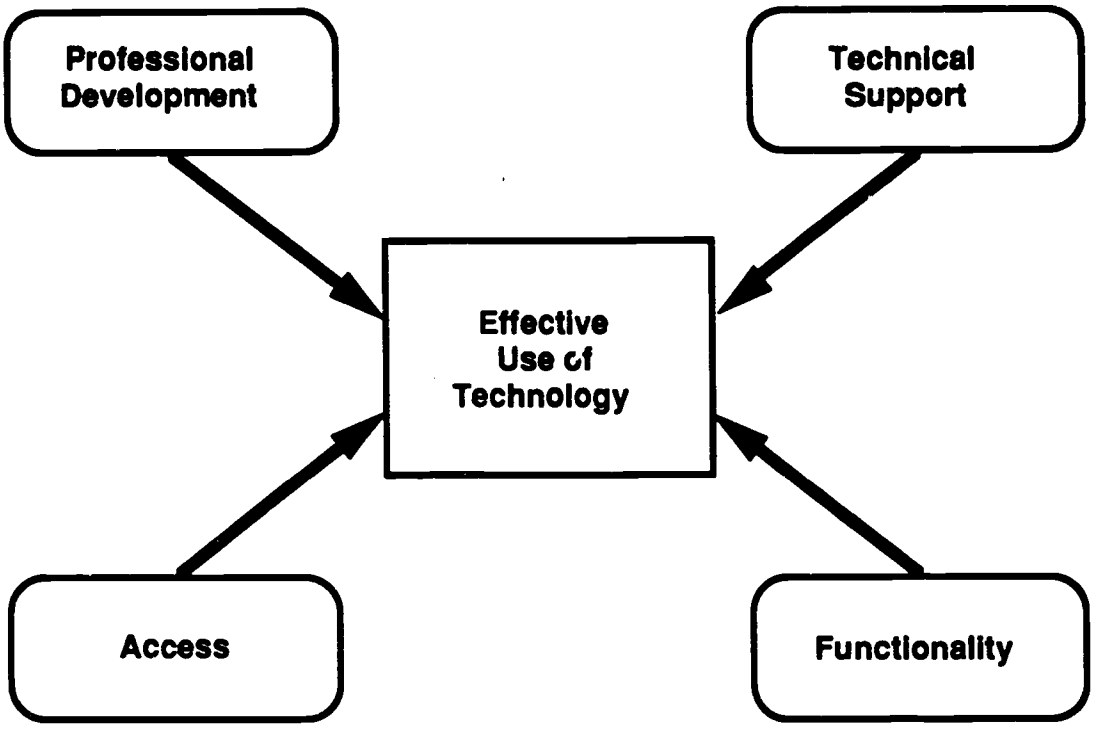

FIGURE 1 REQUIREMENTS FOR EFFECTIVE USE OF TECHNOLOGY

Access to technology requires that it be readily at hand for use as needed, not simply for uses that can be predicted in advance and squeezed into a fixed time slot. For example, teachers are far more likely to use video for instruction when the choice and timing are under their control. Similarly, teachers and administrators are less likely to use telecommunication networks when they must go to a remote location to do so. Nor can students exploit the power of word processing if they must wait for their daily or weekly scheduled time in a lab. The technology must be readily accessible for use when it is needed.

The technology must have the functionality to support the use for which it is intended. For example, use of graphics requires computers with sufficient memory and speed; use of networks requires a sufficient number of phone lines. This is a critical issue in the context of the continually expanding capacity of technology and therefore purposes to which it can be put. Moreover, it is critical that those who make decisions about technology purchases be aware of the functional needs of the tasks for which the technology will be used.

No school system can afford to keep up with the latest technology. It therefore becomes crucial to match older equipment with tasks for which it is well suited. For example, older computers may be totally inappropriate for algebraic graphing and simulations of scientific phenomena but may be perfectly fine for keyboarding skills and composing in the early grades.

Computer, telecommunication, and video technologies offer an unlimited range of potential uses. The challenge for teachers is to make appropriate choices of technologies based on goals for student learning (Dwyer 1992). Open-ended, challenging, collaborative projects are appropriate for certain goals while independent seatwork is appropriate for others. Similarly, integrated learning software that structures and sequences learning and tracks individual

progress is appropriate for some goals just as whole-class presentations by the teacher are well-suited for certain purposes and not others.

Judgments about appropriateness require both knowledge about the technology and knowledge about teaching and learning. Therefore, the third prerequisite to effective use of technology is professional development. This encompasses a range of activities not typically considered professional development. Introductory "how-to" workshops on specific kinds of hardware and software have a place, but the critical development and supports are those available on an as-needed basis in the school. These range from opportunities to grow professionally through collaborative work with colleagues (on site as well as via personal and electronic networks), participation in previewing and selecting hardware and software, and observation of others' use of technology to support teaching and learning.

Teachers as technology users also need technical support for operating hardware and software and diagnosing maladies. Like professional support, technical troubleshooting and assistance need to be readily available. When malfunctions occur in the middle of a lesson, leaving the room to telephone someone in another building is not feasible. This problem will likely diminish over time as more and more students become technically proficient and as teachers become more comfortable turning to students as sources of expertise (Ringstaff et al 1992).

If either access, functionality, technical support, or professional development for the task at hand is missing, the likelihood of effective use of technology is significantly reduced. Moreover, experiences in which technology use is ineffective are frustrating and leave potential users less willing to change in the future.

Policy Issues and Implications

Creating state policies that embody systemic reform is only the first step. Transforming roles, relationships, and organizations in ways that reflect new goals and creating the local conditions for technology use pose the real challenges. Imagining how technology could be introduced and used in ways that would support, and be supported by, the goals of systemic reform surfaces all the thorny issues facing systemic reform itself. The rhetoric of decentralizing decision making, for example, masks the complexities of how to balance individual preferences with group needs and how to ensure that those who make decisions are well informed.

Even the role of policy itself is re-examined in the context of systemic reform. Can policy become a tool to provide the conditions that lead to change inside classrooms instead of a set of prescriptions and mandates? What follows is a discussion of some of the issues and trade-offs in thinking about policies for technology acquisition in the context of systemic reform. I discuss these under four broad topics ongoing technology planning; locus of decision making; professional development; and equity concerns. At the end of each discussion are some rules of thumb to consider.

Ongoing planning. The rapid pace of technological evolution precludes traditional long-range planning. It is difficult even to know what will be available next year, and

certainly not what the options will be five years down the road. Two trends, however, are likely to continue what exists now will become less expensive and new products will be smaller, more powerful, and easier to use. This ensures two pervasive and permanent conditions technology users will always desire newer equipment, and schools will always be out of date.

Strategic planning for technology purchases, therefore, needs to focus on broad goals for the system, the role of technology in achieving those, and mechanisms for maximizing use and therefore cost effectiveness. Rather than specifying a series of steps, specific hardware and software, and a schedule, useful plans describe a set of principles on which purchases about decisions must be based. Kentucky's Master Plan for Educational Technology is based on such a set of principles (called Strategic Decisions) in Table 2. These principles then become the structure within which decisions can be decentralized without compromising compatibility and quality.

Ideally, decisions should be driven by what will be--not by what is--and by how technology can contribute to this transformation. Thus, for example, decisions about networks need to consider the information needs of moving towards and supporting a more decentralized system. Likewise, decisions about hardware and software should anticipate the expansion of performance assessments and portfolios which are expected to lessen reliance on standardized test scores. Decision makers should feel less pressure to base major purchases on their track record in raising standardized test scores in the short run rather than their contributions to lasting improvement in understanding, problem solving and thinking strategies.

Imagining future instead of present organizational structures also makes possible more cost effective uses of technology. For example, if four teachers are jointly responsible for 120 students in four rooms, one room might house technology and still be readily accessible to all. Without such team planning and collaboration, such sharing of technology would be cumbersome at best.

It is equally important to make the ongoing planning process both iterative and participatory at each level of the system. This process itself becomes a vehicle for continuous communication and education about available technologies and their potential. Here, policymakers face the need to balance breadth of participation in the planning process against the need to make decisions and act on them--the broader the participation, the longer it takes.

Table 2
KENTUCKY EDUCATION TECHNOLOGY SYSTEM STRATEGIC DECISIONS

KETS Strategic decisions are as follows:

- KETS is one Commonwealth-wide system encompassing instruction and administration, thereby yielding a truly integrated education technology system and lower total costs.
- KETS is based upon distributed (or decentralized) networks of small to medium size computers, while allowing incremental implementation and preserving flexibility.
- KETS is a tightly coupled network to which every student workstation, teacher workstation, student/school management system, district office administrative system, and relevant state agency will be connected. This connectivity allows lower cost student and staff workstations and provides greater functionality than stand-alone computers.
- KETS is designed to open systems standards and allows a variety (limited by support and maintenance considerations) of vendor products to be used across the network.
- KETS is designed to integrate data, voice, and video technologies so that all of these technologies can be routed over the same communications network.
- KETS encompasses eight highly integrated major application subsystems: Instructional Technology, Instructional Support, Student/School Management Services, Communications and Information Services, Administrative Computing, Commonwealth-wide Information, Office Services, and Network, thereby improving every aspect of the public school system.
- KETS employs a common user interface, meaning the look, feel, and functions will be consistent throughout the network, thereby reducing both initial and ongoing training costs.
- KETS is designed to be both highly accessible to staff, students, and parents and highly protected with security measures which restrict and detect unauthorized use but provide access to all stakeholders.

Adherence to these strategic decisions will result in the realization of a Commonwealth-wide education technology system that will bring about an equitable and efficient use of technology in the schools of the Commonwealth. These strategic decisions will improve teaching and learning and will enhance the operation of the public school system. KETS is essential to Kentucky's efforts to restructure its system of education and to realize the spirit of KERA.

Source: Master Plan for Education Technology, Kentucky Department of Education, Council for Education Technology, April, 1992.

Rules of Thumb for Technology Planning

+ Build in flexibility to respond to rapid changes in technology. For example, choose open-ended multiple-use hardware not dedicated or restricted use systems. Stagger purchases and assume a maximum five-year replacement cycle.

+ Create an iterative and participative planning mechanism that ties technology acquisition to challenging goals for student learning and organizational change.

Decentralized decisions. The rhetoric of decentralization calls for making decisions at the level of the system most appropriate for the particular decision. So, for example, decisions about transportation are probably most appropriate at the district level whereas decisions about which software to purchase belong at the school, team, or individual level. Creating a telecommunications system probably requires state-level decisions, and perhaps federal as well. Such a decentralized system presumes that the resources and the know-how rest at the same level at which decisions are made.

There is no guarantee, however, that making decisions more democratic will make them any better. Policies and networks to facilitate communication and information sharing up and down and across all levels of the system are necessary but not sufficient. Delegating decisions about technology to schools without also providing the knowledge and other supports (time to learn, test new approaches, observe others) is unlikely to increase the quality of the decisions. However, whether the decisions are better or worse, when those who must live with their outcomes are also those who make the choices, they will feel more ownership in those choices. For example, in one district, the curriculum coordinator--an expert in constructivist teaching and learning but a novice in computer technology--mistakenly ordered computers without hard drives precluding their use for the very ends he imagined. When state and district personnel make such decisions, they are less likely to feel responsible for poor choices and teachers feel free to ignore the equipment.

Decisions about technology may necessitate a larger cast of characters than is typical for most purchases. Decisions must be driven ultimately by their connection to student learning. As illustrated above, both technical and instructional expertise is important as is knowledge of product reliability and compatibility. Different decisions may be appropriate for different groups, even within schools. For example, the Cupertino/Fremont (CA) Model Technology Schools Project created two school-based mechanisms for faculties to choose technology tied to goals for student learning (David et al 1989). Teachers develop and continually revise Personal Learning Plans describing their individual goals for learning technology, including productivity goals and instructional applications. The plans include flexible timelines and demonstrations of achievement as well as hardware and software needs. In grade-level teams or departments, groups of teachers jointly create Department Technology Plans for technology acquisition based on their individual Personal

Learning Plans, team or departmental goals, and the need to share equipment.

Rules of Thumb for Decentralized Decision Making

+ Decentralize budgets and decisions about hardware and software to schools and provide access to information about choices.

+ Facilitate communication and information sharing up, down, and across the system and with the community. Create districtwide and statewide networks to give schools/districts immediate access to budget and other data for staffing and management.

+ Encourage school planning that ties technology choices to learner outcomes, directly through instructional applications or indirectly through increasing staff productivity, learning, and communication.

Professional Development. Technology provides a tool and an impetus for the creation of challenging curriculum and instruction. However, teachers need to know how to create such new environments and administrators need to know how to lead and inspire such efforts. And both need to be able to use a range of technologies. For both teachers and administrators, this requires a different conception of professional development--one driven by individual and team choices on an as-needed basis. And like effective instruction for students, the most effective forms of professional development are those which provide authentic tasks in collaborative settings--and the time to do them. Hence, designing curriculum, creating technology-based projects with a team, and developing assessment tasks are powerful ways for educators to learn.

Educators face the tension between learning how to use technology before "going public" versus learning alongside students. Each individual has a different sensibility, but most educators prefer to master at least the basics of a new technology before beginning use in front of others. Consequently, a powerful form of professional development tied to technology is to provide teachers with computers they can take home. A number of districts now do this in conjunction with introductory training--those who attend institutes in the summer receive a computer for home and school use. Experience in Apple Classroom of Tomorrow (ACOT) sites which have had large infusions of technology over the years suggests that over time, teachers become more comfortable learning new tools with the students (Ringstaff et al 1992).

Telecommunications extends the potential for collegial work beyond the school. In fact, given the isolation of teachers from each other within buildings, creating professional networks outside the school can be easier than inside. However to benefit from the vast world of information and people a few keystrokes away, teachers need access to a computer, phone line, and modem. In organizations yet to put telephones on teachers' desks, this is no small requirement. In Texas, where a statewide network, TENET was introduced last year, 10,000 teachers signed up during the first year. Of those interviewed, many cited use of the

network at home and not at school for lack of access to phone lines (Web Associates 1992).

Rules of Thumb for Professional Development

+ Invest at least as much in professional development as in technology. If limited funds, use what is available for professional development and seek other funding sources, including grants and business partnerships, for acquiring technology.

+ Focus on ensuring teacher access to and comfort with technology for their own uses before expecting extensive use with students.

+ Invest in developing principals as leaders of change, supporters of teacher development, and modelers of technology use.

+ Maximize leverage of professional development by investing in lead cadres of teachers--one or more from each school--who are supported to share expertise with colleagues and other trainer of trainer models.

+ Give school faculties (as a whole, as teams, and individuals) the flexibility to select to kinds of training and other development opportunities appropriate to their needs and preferences.

Equity. Reforming the education system and realizing the potential of technology is extremely difficult in the best of circumstances. Realizing the promise in rural schools and inner city schools in neighborhoods devastated by poverty greatly intensifies the challenge. The biggest risk is that the promise will be realized only in wealthy communities, greatly increasing the already large and growing gap between rich and poor. The federal government has traditionally played an important role in ensuring equity through providing resources, protecting rights, and pressuring states to do the same. To achieve the vision of systemic reform, all levels of the system must strive together to transform the system in ways that will benefit all children.

Equity rests first on a fair system of school finance that does not penalize property-poor districts. Equitable access to technology requires not only access to hardware and software but, importantly, to educators who use it effectively. If teachers have no reason to change their practices, computers will be used as workbooks, video technology will be used for presentations, and telecommunications will be used, if at all, to receive administrative dicta. Consequently, a significant aspect of equitable access for all students rests on opportunities for teachers and administrators to learn new practices. Current practice leans more heavily on drill and basics for students from poverty than for those from wealth. Uninformed choices about technology and lack of knowledge about principles of learning have the potential to maintain that discriminatory distinction.

Ultimately, technology through telecommunications and video may be the most cost-effective vehicle for ensuring that teachers, wherever they are, have access to best practice. Through downloading curricula, opportunities to interact with experts and colleagues on line, and

watching individually or in working groups master teachers and other instructional videos, more teachers may have access to new ideas and collaborative work than would be possible or affordable face-to-face. And for students, equitable access to materials, information, and other resources may be more readily achieved through networks than under current distribution systems.

Rules of Thumb for Equity

+ Ensure equity in access to technology and professional development, both across and within schools, through state and federal policies and resources.

+ Ensure access to challenging curriculum and instruction for children of poverty.

+ Provide parents and the community access and training to use the technology.

Educating parents and communities about technologies as well has multiple advantages broadening support for new uses with students, maximizing the use of technology and the school facility, and providing needed skills to adults. Instead of restricting use of costly technology to 30 hours a week--when school is in session--evening and weekend use for adult learning can provide additional sources of revenue for technology purchases.

Conclusions

The conditions necessary for the long-anticipated technology revolution in education are now close at hand. On the technology side, low-cost, easily portable notebook computers have arrived as have easy-to-use software programs for manipulating words and data. Multimedia technology and video production equipment, which can readily be shared among students, are also within reach. On the reform side, there is a growing consensus around the need for more challenging performance-based goals for students and for a massive overhaul of the whole system to create learning environments that will allow students to reach those goals. To the extent that efforts are made to reform the system through the creation of performance-based goals and assessment and corresponding curriculum frameworks and professional preparation and development, the promise of technology tied to those goals can be realized.

However, systemic reform is a major undertaking. Although concerned about the quality of education, our society has not yet faced the need to transform an entrenched public institution. Public support for such a venture is spotty at best. In particular, changing authority relationships in the education system and providing teachers with ongoing access to information, knowledge, and colleagues will not come easily. By itself, technology cannot transform the system nor can it change public opinion, but it can contribute to overcoming some of these major barriers.

Educators are not likely to take on such a challenge unless they have internalized a new set of

goals requiring such change and have the necessary supports, including the time, access to knowledge, and flexibility, to learn new ways of teaching and organizing schools. State and local policies cannot force change but, with sustained leadership, can set the stage, point the direction, and provide the supports.

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Bringing Schools and Communities Together in Preparation for the 21st Century: Implications of the Current Educational Reform Movement for Family and Community Involvement Policies

Patrick M. Shields

Current efforts to improve the nation's schools depart radically from previous reform movements in their willingness to question the basic structures of the system of educating our children. Unlike earlier efforts that sought to extend the benefits of the current system to excluded groups or that worked to increase the quantity of education received by all children, today's reforms seek to redesign schools from the bottom up in order to create new institutions for the 21st Century.

Underlying this reform movement are a number of assumptions that are very different from those guiding the reforms of the late 1960s, the 1970s, and the early to mid-1980s. First, we have come to understand that teaching and learning have to focus on the acquisition of critical thinking skills for all students. Second, we recognize that the school, not the statehouse or Washington, is the appropriate locus for decisions about how to improve teaching and learning. Third, changing the teaching and learning environment while giving school staff more responsibility for designing that environment will require much more from teachers and administrators. Fourth, in return for the increased responsibilities, schools must be held more accountable for their outcomes. Finally, districts, states, and the federal government will have to assume new roles to provide the resources and assistance necessary to enable school staff to take on these new challenges.

This vision of school improvement compels us to create a new conception of the appropriate relationship between the school and its community, parents, and families. Pedagogically, as we have come to know the importance of rooting learning in children's real lives, we can no longer tolerate the artificial boundaries between the classroom and the home. Politically, as we move the authority for decisionmaking down to those closest to children, we cannot afford to exclude parents and community members from the process of crafting new schools. Nor can we avoid being held more directly accountable to the immediate community constituency for decisions made at the school site. Practically, schools have no chance of enacting the fundamental changes on the reform agenda in the absence of wholehearted support from their entire community (parents, citizens, and business).

The idea that schools can best succeed by isolating themselves and their students from the community has been discredited. As we move toward the next century, the improvement of our schools will have to be accompanied by closer connections between schools and their communities, teachers, and families.

In this paper, I explore the implications of the current reform agenda for governmental policies concerning the involvement of communities and families. The underlying questions I will try to address are: (1) What are the most appropriate roles for parents and communities in the current efforts to improve schooling?; and (2) What policies should federal, state, or local decisionmakers put in place to support this involvement? Where relevant, I focus special attention on policies related to the middle grades (4-8).

In the following section, I provide a brief review of the history of educational reform and parent involvement policies over the past few decades. I then describe how the current wave of reform differs from previous efforts and discuss the implications for parent and community participation in the schools. Based on this discussion, I outline a set of policy recommendation for decisionmakers at all levels of the educational system. Finally, I point to some promising directions for future research.

A Brief History of Educational Reform and Policies on Parent Involvement

The modern history of educational reform begins with the Great Society legislation designed to address the needs of "disadvantaged" populations. The legislation began with Head Start in the 1964 Economic Opportunity Act and the Elementary and Secondary Education Act (1965), continued with Follow Through (1967), The Bilingual Education Act, the Migrant Education Act, and perhaps ended with the Education for All Handicapped Children Act (1975).

This set of laws was based on the premise that although we know how to educate children, certain subsets of children are excluded, by the lack of ability or will on the part of state and local officials, from equal opportunities for quality education. Each program then sought to increase children's opportunities by providing funds to local governments (or community agencies) and requiring that the funds be spent on specific categories of activities (e.g., basic reading skills, health services) and for specific types of children (poor, limited English-speaking, etc.)

These programs reflected federal policymakers' beliefs that in the absence of categorical requirements state and local educators would not ensure that special populations received equal educational opportunities. Based on this same belief, these pieces of legislation included a requirement for some form of parent or community involvement, typically in the decisionmaking process through some form of council. The rationale for the community participation mandate was summed up well by Robert Kennedy in his testimony in favor of Head Start:

> The institutions which affect the poor--education, welfare, recreation, business, labor--are huge complex structures operating outside their control...[We] must basically change these organizations by building into these programs real representation for the poor in the planning and implementation of the programs: giving them a real voice in their institutions (cited in Piven and Cloward, 1971: 20).

Title I of the Elementary and Secondary Education Act of 1965 (now Chapter 1) provides a telling example of the evolution of federal policy on the involvement of parents. Following the logic expressed by Robert F. Kennedy, the original Title I legislation called for "community participation" in the compensatory program. In response to numerous allegations that funds were being misspent (e.g., Martin and McClure, 1969), however, policymakers repeatedly strengthened the participation requirement. By 1970, the U.S. Commissioner of Education required district-level parent councils in all local agencies receiving Title I funds. In 1974, a requirement for school-level councils was added to ensure parents a voice in the program. In 1978, when Congress again reauthorized the legislation, the parent involvement requirements were further strengthened to include specific areas of responsibility for parents and to outline the steps districts and schools had to take to support the involvement of parents (Shields, 1989).

This trend toward stricter requirements for parent involvement in education programs shifted in the early 1980s as the federal government began to favor more state and local control of programs. For example, the 1981 reauthorization of Title I deleted the formal requirement for parents, replacing it with a simple call for "consultation with parents." Subsequent reauthorizations and regulations, while clarifying congressional intent that parents be involved in the program, have never reinstated the formal requirements of the earlier legislation.

In fact, during the 1980s, as the earlier concern with bringing excluded groups into the political process of educational decisionmaking waned, policymakers showed a renewed interest in involving parents more directly in their children's education, especially in support roles at home. Policies promoting support roles for parents also go back to the early Head Start legislation and are based on the simple facts that parents are children's first and primary teachers, for even school-age children spend just over a tenth of their time in formal institutions of learning (Walberg, 1984). Thus, throughout the 1980s, programs such as Parents As Tutors (PAT) gained increasing prominence and were adopted in many local communities.

Importantly, research has shown the effectiveness of home support programs in promoting gains in student achievement. Even parents with minimal formal education can be taught a variety of techniques (e.g., reading aloud to their children, tutoring them in different subject areas, or simply listening to their children read) that lead to increased school achievement (Clarke-Sterwart, 1983; Lazar and Darlington, 1978). Although much of this research has been done with very young children, studies have also shown that parents can be trained to offer middle-grade students instructionally related support at home that results in higher achievement (Barth, 1979).

A key assumption of earlier educational reform movements was a belief that the educational system was working well for some students. The reforms of the Great Society era and the 1970s, by and large, focused on extending opportunities to excluded groups. Even the reforms of the early 1980s, while recognizing some of the shortcomings of the entire educational system, still sought primarily to extend current services to more students for greater periods of time. Thus, for example, during the mid-1980s the most prominent reform efforts involved increasing graduation requirements, extending the school day, and requiring

students to take more academic courses (Smith and O'Day, 1991).

Policies promoting the involvement of parents reflected these same priorities. One stream of policies focused on extending opportunities to the parents of excluded groups. A second stream sought to increase the support at home for what was taking place in the school classroom. Both sets of policies brought parents into supporting roles into the system as it then existed. The next wave of reform in which we are currently makes very different assumptions about the value of the entire system of schooling, and in doing so requires a different set of roles for parents and community members.

The Current School Reform Agenda: Creating New Relationships with Families, Parents, and Communities

The current movement to improve the nation's schooling begins with the radically different assumption that our schools are not working very well for any students, so that the entire system needs fundamental changes if we are to prepare youngsters to be productive citizens and workers for the next century. This perspective calls for fundamental shifts in our conceptions of the classroom, of the school, of governance and authority relationships, and of organizational structures supporting schooling.

In turn, these changes require a new series of relationships between the classroom and home, between educators and families, and between schools and their broader community. In this section of the paper, I review the major components of the new vision of educational reform and discuss their implications for the involvement of parents and community members in the schooling process.

New Ways of Teaching and Learning: Breaking Down the Barriers between Home and Classroom.

At the heart of the current wave of reform is a vision of how teachers and students interact and the content of that interaction. No longer can we be satisfied with wholly teacher-directed instruction focused on the linear acquisition of basic skills structured by a rigid curriculum. Rather, all students must be provided sufficient opportunity to direct their own learning and to become engaged in stimulating, real-world-based, critical problem solving (Knapp and Shields, 1990).

Central to this view is the idea that instruction must be built on students' out-of-school experience and so teachers need to allow students to use these experiences as the starting points for learning. Effective teachers encourage students to use their personal experiences to make sense of classroom content (Diaz, Moll, and Mehan, 1986; Lipson, 1983; Schreck, 1981). To be able to build on their personal experience, teachers must then allow students opportunities to actively direct their own learning (Cohen, 1988; Slavin, 1986). Moreover, helping students to build on their knowledge base is facilitated when teachers learn more about students' home cultures and adapt their teaching approach to incorporate students' cultural characteristics (Heath, 1983; Shields and Wilson, 1992, Tharp, 1989).

Making school relevant to students' real lives is especially important in the middle grades, for it is during these years that students begin to make conscious decisions about the value and appropriateness of specific subject matter and school in general. In short, this is when students turn on or off to school (Carnegie Council on Adolescent Development, 1989; Estrada, 1992).

For teaching and learning to change in these ways clearly requires the razing of the artificial barriers between the classroom and the home. Students need to understand the value of out-of-school experiences and feel free to bring those experiences into the classroom. Parents cannot remain ignorant of what takes place in classrooms if they are to facilitate their children's learning. Teachers and administrators cannot remain ignorant of students' home lives if they are to structure appropriate learning experiences.

The destruction of these barriers will require a new openness to communicate, to create opportunities for families to spend more time in the school, and for school staff to spend more time in the community. This is not easily accomplished, but is far from impossible, as evidenced in the following vignette of just such a learning activity in an elementary school in a small Appalachian town.

TAPPING THE COMMUNITY'S EXPERTISE: A VISIT TO THE PUMPKIN PATCH

> It's a misty, cold morning in South Bernstone, a small coal and farming community in the foothills of the Appalachian Mountains, and a group of fourth graders are sitting cross-legged in their sweaters and boots engrossed in the "lecture" being given by Mr. McCormick, a local farmer and parent to one of the school's sixth graders. Mr. McCormick is simply describing the process of fertilizing, weeding, and harvesting in this field of pumpkins. Mr. McCormick calls on children in turn who are interested in why bugs do not eat up all the pumpkins and how much money he will make when he brings them to market.
>
> This is the class' third visit to the farm--they witnessed some of the seeding and came back to see the new plants sprouting their first fruits. As with their previous visits, the students will go back to school and write essays in small groups for their science class. This time, however, they will also get to bring a pumpkin home, some of which will be cooked in the school kitchen.

This little story illustrates a number of interesting pedagogical techniques: integration of disciplines, writing across the curriculum, real-world-based learning, and cooperative learning. It also provides a wonderful example of a teacher asking community members to share their expertise with students. Here, the community is viewed as a resource to be used to help students learn important concepts--in ways that send students and parents alike a positive message about the value of schooling and the work of the community.

A New Vision of the School House: Forging New Relationships with the Community.

A second major theme of the current educational reform movement, which builds on the idea of real-world-based, student-directed learning, involves a vision of the school as an active

learning community structured exclusively to enhance student learning. In such "restructured" institutions, the day's schedule, the organization of staff and student time, and the roles and responsibilities of teachers and administrators are designed explicitly to help students learn (Elmore and Associates, 1990) .

Thus, for example, the length of class periods or the assignment of staff to teaching responsibilities are not seen as "givens" that must structure each day. Rather, teachers in these schools might teach only two or three subjects per day, each class involving teams of teachers working with the same group of students for a length of time, depending on the subject to be covered. In the same vein, "teachers" may play several different roles in such a school, acting as instructors, curriculum developers, and decisionmakers (David and Shields, 1991).

Following this logic, the school building is not viewed as the only location teaching and learning can take place. Based partly on the argument that students need to learn critical thinking within a real-world context, as we discussed above, teachers in such learning communities are likely to design learning experiences that take place outside of the formal school building. Science projects carried out in nearby parks, mathematics projects requiring the timing of bus routes, and writing assignments based on field experiences are examples of appropriate out-of-school learning experiences for children in the middle grades.

Rethinking the basic structure and routines of the school also leads to consideration of the need to provide other services to students. More and more schools are recognizing that their students' ability to learn is contingent on their physical and mental well-being and the well-being of their families. Consequently, schools are experimenting with new ways of providing more integrated services to their communities, wherein the traditional educational function of the school is extended to include specific health and social services (Reisner, Chimerine, Morrill, and Marks, 1991). Schools embarking on integrated service delivery vary considerably in the extent to which they actually provide versus coordinate such services, but the underlying logic remains the same: the structure of the "school" should be defined not by tradition but by the needs of the specific student body.

The implications of such shifts in the traditional structure of schools for bridging the gap between the school and the community are clear. Staff of such schools are open to leaving the school building to promote educational activities for their students in their own communities. Such steps increase the opportunity for community members to become acquainted with the schools as well as for school staff to know the community better. At the same time, by structuring schools to meet the broader needs of the students' families through the provision of noneducational services, teachers and administrators are opening their doors to the broader community and explicitly expressing their desire to help community members. Thus, restructuring in these ways can both bring the school to the community and attract the community to the school.

Again, breaking down the long-standing barriers between school and community and asking teachers, parents, and even students to assume new roles is no easy task. The following vignette shows how the traditional lines between school and home, teacher and parent can be crossed in ways that promote student learning and increase communication and understanding. In this story, we see how parents, trained in giving classes in mathematics, can attract and

interest other parents in coming to school after hours to take part in interesting learning experiences with their fifth- and sixth-grade children.

PARENTS AS TEACHERS OF PARENTS: FAMILY MATH IN A CALIFORNIA BORDERTOWN

> In the front of the room is a Venn diagram on the blackboard; toward the back of the room is a table with various-sized jars filled with beans and M & M's for estimation exercises. A group of 15 parents and their children are sitting around uncomfortably: parents not accustomed to sitting in chairs designed for ten-year-olds, students not used to having their parents at school with them.
>
> At the front of the room, four local parent-leaders and one classroom teacher make last-minute preparations for the class. One parent-leader quiets the crowd and quickly launches into the first activity of the evening. Scissors and paper are handed out and parent-child teams are asked to form a series of shapes. It's not difficult, the children enjoy cutting and everyone can make a couple of shapes from the pieces, while the best can form dozens. Slowly the tension in the room dissipates as all are playing a fun game. The parent-leaders come around to help everyone clean up and to make sure that everyone has some shapes and paper to take home to continue the "geometry lesson."
>
> The next exercise involves measurement. Everyone is given a string and asked to cut it to match the partner's height (each adult is paired with a child). The parent-leaders then ask the class to estimate how many times the string will wrap around a partner's wrist, head, and waist. Glancing around the room, one notices that families, which an hour earlier appeared afraid of the experience, are standing on tables, wrapping strings around one another, pinching each other's fat, laughing--and being introduced to concepts of estimation, measurement, and spatial reasoning. (Shields and David, 1988)

School-Based Governance: New Opportunities for Parent and Community Participation.

A third theme of the current reform movement is school-based governance, based on the argument that if schools are to structure themselves to become true learning environments, the individuals closest to the students must have the authority to make fundamental decisions about how best to serve students (David, 1989). The establishment of true authority at the school site has implications both for the direct involvement of community members in the decisionmaking process and for accountability to the immediate community for the school outcomes.

The ideas underlying school-based governance can be traced back to the research on effective schools and the findings that well-functioning schools had staff that were consciously assessing their schools' needs and developing coherent plans to address those needs (Purkey and Smith, 1983). The resulting effective schools movement sought to organize such self-reflective activities in a formal committee structure. Some states, such as California, formalized such councils in state-funded school improvement initiatives.

Unlike these effective schools councils or other forms of parent, teacher, and community advisory councils, school-based governance involves the formal transfer of power from a higher level of government to the school. In school-based governance, individuals at the school site do not just advise superiors, they possess the authority to make key instructional, organizational, and budgetary decisions, within legal guidelines.

Along with this new authority come a host of new responsibilities. First, school staff must decide how decisions will be made at the school site. The common strategy is to create steering committees made up of representatives of the key groups in the school community: administrators, teachers, and parents. Educators realize that the logic of having decisions made by those "closest to the children" compels them to include parents in school-based governance.

A second domain of responsibility involves accountability. Having assumed authority for making key decisions, schools should be held accountable for their results. Partly, this accountability is to the higher levels of the system from whom the school received the authority. Thus, for example, in Kentucky's new educational reform law, schools are provided more power over their own operations, but every two years they must meet a state-established standard based on their students' performance on a state-developed test. If schools fare poorly enough, they can be taken over by "distinguished educators" appointed by the state.

At the same time, this "authority for accountability" swap creates a new relationship between the school and the immediate community of families. If schools have responsibility for creating the learning environment, then they are also accountable for their results to their most immediate constituents and consumers: local community members. Not surprisingly, Kentucky's reform law includes a provision that allows parents to transfer their students from failing neighborhood schools at no cost to themselves.

Thus, school-based governance, a centerpiece of current reforms, reshapes the relationship between the community and the school in two fundamental ways. First, it creates the opportunities for parents and community members to have more direct input into the decisionmaking process than was typically possible under any earlier governance arrangements. Here, parents can sit on, elect representatives to, and attend the meetings of the decisionmaking bodies of the school. Second, this same structure therefore makes the schools more readily accountable to the community. In certain renditions of school-based governance, this accountability is strengthened by a parental-choice provision.

In sum, moving authority down to the school site through school-based governance can work to democratize the educational decisionmaking process and create meaningful opportunities for parents to influence the outcomes of that process. Under these circumstances, the provision of school choice to parents can further strengthen their political power in local schools.

The following story is an example of how parents can play an active role in the decisionmaking process of a school. This example is taken from a large urban school system that has implemented both school-based decisionmaking and a controlled-choice program, which allows parents some opportunity to choose among the schools their children attend.

Here, the staff and parents of two poorly performing schools, a middle school and a high school that share the same campus, are working on rebuilding the schools from the bottom up.

DESIGNING A NEW SCHOOL FROM THE BOTTOM UP: PARENTS, TEACHERS, AND COMMUNITY MEMBERS WORKING TOGETHER

> A group of eleven teachers, four parents, and two administrators are sitting around a large conference table in Mohawk Middle School's administrative offices. The design team, as they are called, is trying to rethink the structure of the middle school and the high school, which share a common campus. The two Mohawk schools have been at the bottom of the district's ranking on every conceivable indicator of success (attendance, achievement, dropout rate, etc.). At the urging of a couple of active teachers and parents, the district has handed over considerable responsibility to the school to redesign its educational program. The design team, elected by peers, has the task of making the tough decisions.
>
> At the heart of the discussion today is a proposal to form teams of teachers who will have collective responsibility for the education of a small set students (around 100). One teacher notes, "I like the idea--but it's not feasible unless the team of teachers and students are all located on one wing of the building. In my case, I would have to move--and I have spent 15 years creating a wonderful learning environment in my classroom. I don't want to have to move." A parent responds, "Are you forgetting what our job here is? We're trying to create a school that works for children--not trying to make teachers' jobs easier. If you need help moving, I'll get some other parents to come in on Saturday and we'll give you a hand." There was a moment of silence and then the discussion returned to the educational issues involved in restructuring the school.

New Requirements for the System Supporting Schooling.

A final theme of the current reform agenda concerns the support system around the school, including the district, the state, the federal government, and the local community. In calling for the transformation of the classroom, of the schoolhouse, of relations between home and school, and of the authority structures governing each of these, we are asking much of teachers and school-level administrators. If we expect school staff to assume their new roles of teacher/facilitators, administrator/coordinators, decisionmakers, and curriculum developers, they will need significant levels of support.

Such support comes first in the form of technical assistance and staff development--helping school staff to understand and prepare for their new roles. In one study, we have found teachers spending over 160 hours per year on additional formal training to gain the skills they need to change their classrooms and schools (Shields et al, 1994). Thus, a second type of support school staff need is time--time to broaden their teaching repertoires, time to plan with other teachers, and time to participate in the decisionmaking process.

Such assistance represents an extremely large financial investment --for example, if schools

were to provide all staff with an additional 80 hours of staff development (half what is needed in the schools I am currently studying), schools' annual budgets could easily rise by 5 percent.

Another type of support needed by school staff results from teachers' and administrators' need to craft a school program built on real-world experience and needs. If schools are expected to prepare the next generation of workers, for example, they need to know the required skills for the workplace. Thus, they need ongoing access to and feedback from the business community--not in written reports but through direct communication. Similarly, if we expect teachers to constantly reconsider their activities, they need access to new ideas in the field of pedagogy and in specific subject areas. Again, this access has to be ongoing and fairly easy.

Taken together, these requirements for more technical assistance, time, and access to business and research require a new definition of schools relationship with their broader communities. Here community is not limited to individual parents and community members in the schools' immediate neighborhoods. Rather I am referring to the larger community of a metropolitan area or region, including those active in business and research. Connections to this broader community are necessary not only because of the need for concrete knowledge, but also to garner the necessary political will to support the massive effort that will be required to change our schools and to keep them improving.

In short, the project of creating self-reflective, constantly improving schools will never take place if the school community tries to do so in isolation. Only with the financial and political resources of the full community will school staff ever have a chance of meeting the challenging goals set forth in the current reform agenda.

Policy Recommendations

As the above discussion makes clear, current efforts to reform schooling force us to reconsider both the basic structures and routines of the school and the traditional relationships between the home, community, and schools. Thus, the first set of recommendations to policymakers and practitioners alike concerns the need to reconceptualize "parent involvement," so that:

- **Parent involvement comes to mean parent, family, neighborhood, and community involvement.** Those with stakes in local schools go beyond the immediate guardians of a school's student body.

- **Family and community involvement is no longer seen as "us against them,"** with the community as the outsider fighting against the professional school staff, or the staff trying to protect the school from the community. Rather, we need to consider families, communities, and professional staff as members of the same team working toward the same general purposes.

- **Family and community involvement involves a wide range of activities,** necessarily going beyond support for learning in the home.

- **There is no "correct" form of family and community involvement.** Participation will naturally vary from place to place; such variation should be respected.

Working from these basic premises, we can develop a set of more specific recommendations regarding state, district, and federal policies to support family and community involvement. Policymakers should:

- **Provide schools significant flexibility.** Policymakers should avoid overly prescriptive requirements--for example, defining the specific areas parents have to be involved in and outlining how many times a certain activity has to take place.

- **Develop policies within the context of a broader reform agenda.** Family and community involvement should not be viewed as a project to be accomplished or a program to be implemented, nor should it be considered as separate from more sweeping attempts to change schools. One clear lesson of the research on educational change over the past few years is that shifts in the relationship between the home and school form an integral part of shifts in instruction, governance policies, and accountability mechanisms. So, for example, we should not think restructuring leads to changes in parent involvement, nor do changes in parent involvement lead to restructuring. Rather, restructuring involves changes in all structures and relationships, including those involving the community.

- **Utilize the power of the bully pulpit.** Changing schools from the bottom up and creating new relationship between schools and their communities are extremely difficult tasks. Educators need to be convinced that such changes are essential; the public needs to be convinced of the importance of supporting these changes. High-level leaders (federal and state policymakers, district superintendents and school board members) can exercise significant influence by identifying themselves with the needed changes, "selling" them, and building the necessary political coalitions.

- **Assist schools to develop the capacity to involve families and communities.** Asking school staff and community members to assume new roles vis-a-vis one another requires skills that many do not possess. One of the most effective roles played by higher-level policymakers is helping locals develop their own capacity to create these new relationships. Such capacity building involves the provision of staff and parent development, the dissemination of effective models, and expenditure of the funds necessary to release school staff from other responsibilities and to reimburse some community members for their time.

- **Give policies enough time to work.** Again, the tasks we are expecting schools and communities to accomplish are formidable ones. One clear mistake policymakers have made in the past is to expect change to happen quickly and then to shift policy in midcourse before schools have had time to

really change.

- **Include policies that provide the community a decisionmaking voice at the school site.** As districts and states provide schools more authority over key instructional, budgetary, and personnel decisions, parent and community members have to be given a voice in that process.

- **Hold schools accountable to their communities.** Schools must be accountable to their immediate constituents. Policymakers need to ensure that families and communities are kept informed of the progress of their schools and that, after a certain period of time, parents should be provided a no-cost option of choosing other schools if their current schools are not working.

Recommendations for Further Research

These policy recommendations suggest a number of directions for further research in the area of family and community involvement. **First, researchers always should look at the issue of family and community involvement within the whole school environment.** That is, we will learn less by studying the involvement of parents in the school in isolation than we will by asking, "What are the goals and the trajectory of this school, and how does family and community involvement fit into this pattern?"

Second, researchers should examine all types of parent involvement at one time, not isolating one from another. For example, if a school develops a new home tutoring program, we should look at this program alongside other opportunities (or lack thereof) for families and community members to participate at the school site.

Third, researchers need to develop more complex theoretical models of the effects of parent involvement. Too often, we find ourselves searching for effects (did test scores go up with more participation of parents on the school council?) that we cannot reasonably expect to tie directly to the participation of families and community members. Given a more coherent theoretical model, we could make a more convincing case for the impact of family and parent communication on various aspects of the schooling process, which in turn might lead to certain student-level outcomes.

Finally, researchers have to provide examples of effective practice to the practitioners who go out of their way to open their schools and classrooms to us. Good models of how to involve families and communities in meaningful ways are not readily available to many teachers and administrators. Given the privilege of researchers' access, we should be prepared to return to practitioners concrete evidence of our findings.

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Research Knowledge and Policy Issues in Cultural Diversity and Education

Roland G. Tharp

The increasing diversity of cultural and ethnic groups in American schools has led to a parallel increase in concern for the implications of this demographic shift for education. Research on cultural issues in education is by no means complete. But fortunately pertinent literature from other disciplines, notably anthropology and linguistics, is available and to some degree we can invoke the parallel concerns of child-service delivery programs in mental health, social service, public health, and community development. There is more scatter than focus in the national research agenda, but there are also indications for a more coherent program of inquiry. Altogether, there may be sufficient evidence to indicate some basic policy directions for effective education of a diverse population. The purpose of this paper is to consider these issues at a broad level, in the hope of pointing in profitable directions, both for policy and the research that can continue to guide policy.

The Basic Questions

The implications of cultural membership for the education of children can be phrased as four basic questions.

> 1) Can we account for important current student features in terms of the historical forces operating on his or her ancestors in a time frame of hundreds to thousands of years? That is, does the ethnogenetic level of analysis, which lies in the dimension of time between phylogenesis and ontogenesis, provide guidance for the design of effective educational programs?
>
> 2) Are culture members privileged in the capacity to teach, administer or investigate the education of their children?
>
> 3) Are there forms of education that are specifically or uniquely suited for the treatment of children of different cultures? Or,
>
> 4) Are there general or universal forms of schooling and teaching that will equally and adequately address students of diverse cultures?

Each of these questions will be addressed in turn.

1) Can Ethnogenetic Analysis Contribute to the Design of Effective Educational Programs?

What is a culture? Even more fundamentally, what is an ethnic group? Ethnic boundaries are not fixed; they are dynamic, evolving, and responsive to political and economic forces (Dominguez, 1985). As a critical current example, for certain purposes--whether political, policy, or language research--all Spanish-speaking groups consider themselves, and are considered by outsiders, as a single "Hispanic" ethnic or cultural group. For other purposes, Hispanics differentiate among themselves: Cuban-, Mexican-, and Puerto Rican-Americans celebrate their distinctions as well as their common causes.

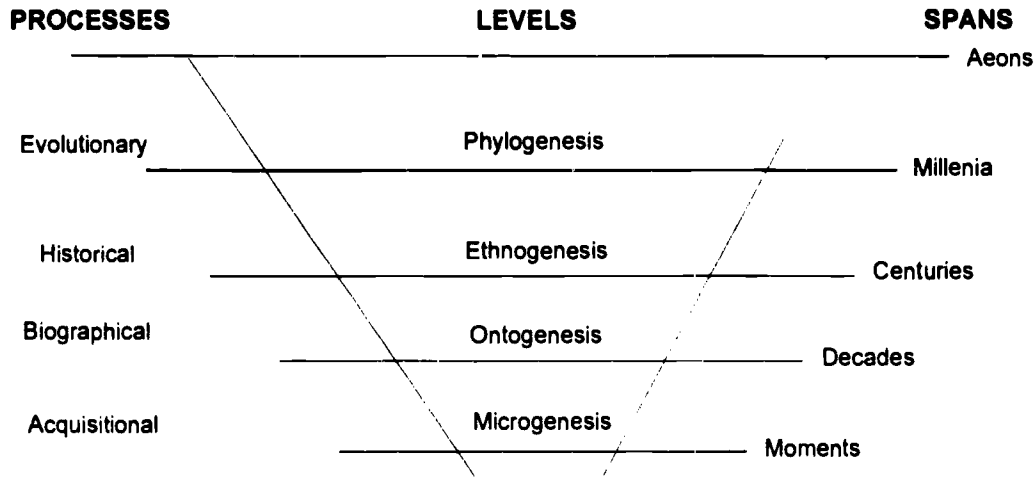
While there is little in educational research that addresses important differences within broad ethnic groups, there is considerable attention paid to the issue in clinical services research. For example, Everett, Proctor, and Cartnell (1983) point out the vast intertribal, interclan, urban-traditional, and individual differences among American Indian clients. Isomura, Fine, & Lin (1987) discuss the differences in offering services to Japanese immigrant families of the first, second and third generations. While people expect respect and understanding of their culture and values, they resent being seen merely as a representative of a cultural central tendency.

Perhaps even more critical is the issue of intra-cultural variability. Within all cultures, there are variations of considerable magnitude. How are these differences to be addressed? For example, within any cultural group, motivation, social organization, and ways of speaking and thinking vary with education, income, and class status. Broad educational prescriptions for "Hawaiians" or "African Americans" or "Native Indians" are often resented by culture members who are not well described by these generalizations. Culture and education research has tended to focus on those members of cultural groups who do less well in school, whereas there are major subcultural groups of black, Indian or Hawaiian people who do not fit these descriptions in the social science and education literature. None of this invalidates the cultural level of explanation, but it behooves us to develop a more differentiated grid for study than has yet been achieved.

A part of the research agenda must therefore be to unpack the cultural variable (Whiting, 1976) so that differentiating characteristics within culture can be understood for clinical implications for individuals. In this way culture can be analyzed for its variable influence on individuals, in contrast to approaches which assign an equal value to culture for all members of a group (e.g.,Weisner, Gallimore & Jordan, 1988). Gallimore et.al. (1991), investigating the correlates of academic success for children of Mexican immigrants, found that the domestic variable with the strongest relationship to child school success is whether the father uses skills of literacy/numeracy in his employment (not the level of father's education). This kind of finer grained analysis of cultural and community life allows us accurately to perceive the dynamics of the daily cultural life of the individual child.

Figure 1 presents a conceptual scheme that places ethnogenetic analysis within a comprehensive framework of four levels of developmental processes which contribute to every human event, which are interactive, and all of which are potent in present time (Tharp, in press).

The phylogenetic level of causation operates through processes that we term "evolutionary" and, in human development, in spans of time between aeons and millennia. In clinical work, detailed phylogenetic analysis is not often employed, but is present in the background



THE FUNNELS AND FILTERS OF DEVELOPMENT

FIGURE 1

as a set of limitations, such as the processes of maturation that produce predictable changes in psychomotor coordination, language capacities, or the sexual drives of adolescence. The effects of phylogenetic processes may be altered, disguised, or emphasized by historical or biographical or acquisitional events, but all other levels of genetic process are conditioned by the phylogenetic.

The ontogenetic level of causation operates through processes that we describe as "biographical," in timespans roughly between a century and decades. Ontogenetic analysis is foundational to traditional psychology, in the sense of accounting for present conditions by reference to life history. In most human services, ontogenetic processes are systematically invoked: family dynamics are treated in an effort to alter major continuing influences on children's lives; or major new socialization figures may be introduced through removal from the home, in the knowledge that the parents, teachers, and heroes of childhood exercise great force in creating life history.

In education we are more accustomed to considering microgenetic processes--which operate through the agents of mentors, teachers, and other adults who teach children particulars. The microgenetic level operates through acquisitional processes (of learning, imitation, and the like) and in time periods that vary from decades to moments.

Each of these factors is potent in present time and operate simultaneously; each conditions the processes below it.

Seldom considered, however, is the level of causation that operates in processes that we call historical, and in time periods between millennia and centuries. In Figure 1, that level is labelled ethnogenetic, meaning the process whereby a people (that is, an ethnic group) comes into being and modifies the terms of its existence.

This "funnel and filter" conception is the latest revision (see, e.g., Tharp & Burns, 1989) of my efforts to schematize this layering of genetic levels. The concept itself derives from L. S. Vygotsky, and many of his interpreters have made similar efforts (e.g., Engstrom, 1990). Versions of this conception are beginning to impact American academic developmental psychology, but ethnogenesis as an explanatory level has been historically and peculiarly absent from major theoretical systems of western psychology. This is in spite of the obvious: conditions of human life, present in every significant transaction, flow from historical processes, processes that have matured for hundreds of years, and that operate causatively in present time.

By introducing this model, I hope to suggest a way that we may consider cognitive and educational issues and policies at the ethnogenetic level, that is by taking into account the historical processes of culture of origin, but considering them as they are filtered by events and forces in individual life history, learning experiences, and current conditions. Ethnogenetic analysis does not per se discount more contemporary and individual developmental events; to consider less than the entire layered funnel of developmental processes would indeed result in stereotypy, and deny the richness of the individual differences in accommodation characteristic of the members of each ethnic group.

Can the ethnogenetic level of analysis provide guidance for the design of effective educational programs? Yes, within a balance, and within limits.

2) Are Culture Members Privileged in the Capacity to Contribute to the Education of Their Children?

Can children be best educated by teachers who are members of the same culture as their students? The question can be expanded to include administrators and researchers. Is there a privilege attached to insider status, deriving from a deeper and more appropriate knowledge?

There is surprisingly little research evidence on this issue. However, we can take some guidance from clinical/counseling psychology, where the issue has been discussed for some time. For example, do social attitudes, particularly racism, affect the delivery of psychological services? It is easy to transpose the setting in the following reports from the consulting room to the classroom. Greene (1985), following Kupers (1981), articulates four general stances which are expressions of racism, and for which white therapists are enjoined to self-examination. They are, 1) bigotry--"a conscious or unconscious belief in white supremacy and as a consequence, the feeling that the black patient's problems are an outgrowth of the patient's inferiority ". . . 2) color blindness, which "may represent the therapist's resistance to confronting the meaning of the color difference" . . . 3) paternalism,

which "involves the attribution of all of the patient's problems to society and the effects of racism. To do this will fail to help patients to understand any role they may have in their dilemma" . . . and . . . 4) "often a result of the therapist's racial guilt, is the unquestioning compliance with the rhetoric of black power . . . (which) can result in a failure or reluctance to set appropriate limits or interpret acting-out." The black patient may consciously or unconsciously put the white therapist to a series of "tests" to determine the acceptance as an individual. "It remains, however, the therapist's responsibility to be familiar with the black patient's culture to some extent, and with his/her own personal feelings and motivations for and about working with black patients," (Greene, 1985, all quotations from pages 392-393).

Is there any acceptable stance? Or are same-ethnicity therapists (or educators) privileged in knowledge and attitude, and thus in power of effectiveness?

Another line of inquiry derives from psychological services in educational settings. College youth have clear preferences for counsellors that are like themselves--counsellors who are well educated, of the same ethnicity, the same gender, and who share their attitudes and values. By and large students report themselves more likely to use counselling services when their preferences are met (Haviland, Horswill, O'Connell, & Dynneson, 1983; Atkinson, Furlong, & Poston, 1986; Ponterotto, Alexander, & Hinkston, 1988; Atkinson, Furlong, Poston & Mercado, 1989).

The effectiveness of counselling, however, may or may not follow preferences. Both sides of that issue are presented by DeBlassie (1976), who insists that a therapist need not be Hispanic to be effective with young Mexican American clients; instead, he argues, common humanity, counseling skills, and generous attitudes are the critical issues for counsellor effectiveness. However, he goes on to report many areas of values and beliefs that are arguably specific to Mexican American youth, and he appears to argue that knowledge of these is necessary for empathy to develop (DeBlassie, 1976).

Stanley Sue has devoted a long and distinguished career to the field of culture and psychological treatment. In his review of the literature on ethnic matching of therapist and client in psychotherapy (Sue, 1988), he finds contradictory and inconclusive evidence as to whether matching produces more effective treatment. A major contribution of this article is in distinguishing between ethnic membership (which emphasizes national or geographic origin of ancestors) and cultural membership (which emphasizes current identifications with the group(s), and their commonalties of values, attitudes, motives, etc.). Sue concludes that ethnic matching is irrelevant, whereas he finds cultural matching to be an authentic distal variable affecting outcome.

Sue urges researchers to consider more proximal variables, such as how cultural knowledge is translated into particular therapeutic behaviors and decisions. This position emphasizes the therapist's capacity for correct understanding, and for comfortable communication. "The issue is not whether patients are treated more effectively by same-race, same-class, or same-sex therapists, but whether the therapists' interpretation of the clients' cultural experience creates

the ambience that is necessary to establish rapport and an empathic bond which facilitates the therapeutic process" (Juarez, 1985, p. 441).

This resolution is similar to that espoused for cultural research by the Cuban-American anthropologist Dominguez (1985; 1986), who has worked both as "member" and "outsider" in cultural research. Her position is that "native" members' accounts of their own situation may well be privileged, because of their intimate, subjective, and empathic knowledge. This does not excuse "native" anthropologists' accounts from the disciplines of their scholarship and profession, and does not invalidate the "outsider" anthropologist's account, over which in terms of objectivity the "native" account is not ipso facto privileged (Tharp, 1991).

By analogy, it appears that teaching, relying so heavily on both subjective and objective accuracy of perception, must attempt to maximize that accuracy in a variety of ways. Ethnic matching may contribute, cultural matching may contribute.

But as a matter of practicality, is cultural matching an available strategy? At the present time, it is clearly not so, since cultural groups are not proportionately represented in the educational professions. Even were that proportionality to be achieved, is matching socially desirable? If matching were to be achieved, then all teachers would teach only their own kind, and children would be limited in the educational advantages of learning from and about other peoples.

Are culture members privileged in the capacity to teach, administer or investigate the education of their children? Yes, in that empathy may be fostered by a shared subjectivity; but that privilege does not extend to objective description nor substitute for professional competence.

3) Are There Forms of Education That are Specifically Suited for the Education of Different Cultures?

The hypothesis of cultural compatibility (Tharp 1989b) suggests that education is more effective when compatible with culture patterns. The hypothesis has an extensive and growing research base in child education (Tharp, 1989a), a modest one in child mental health (Tharp, 1991), and a beginning in child-community psychology (O'Donnell & Tharp, 1990). In all these fields, the issues are present in substantially the same terms. Three forms of the compatibility hypothesis exist. The strong form, or culturally-specific version, suggests that the most effective interventions for different cultures will be different and specific (if not unique) to cultures. Proponents are associated with the effort to derive culturally-based modalities or variations of education.

A weaker form is the two-type hypothesis, which suggests that there are two types of cultures, and therefore two types of most-effective clinical interventions. The first type is the majority, or EuroAmerican, culture; the second type includes those cultures whose students typically experience problems in schools, who are by-and-large "children of color," less industrialized, or urbanized, or western acculturated, and who thus share crucial

incompatibilities with standard education and service-delivery practices. In this position, effective treatment strategies for "children of color" would not be critically different from one another. This position is more salient in social work (e.g., Lum, 1986) than in education.

The null form of the cultural-compatibility hypothesis is the universalistic argument that effective pedagogy will follow the same course for members of all cultures. This is the default hypothesis of education, in that the unreflective proceed as though there are no significant differences. A universalist position in education is entirely consistent with universalist theories of psychology, which of course have been predominant since the inception of the discipline. While the evidence for differential effects of standard education on members of different cultures intrudes more and more into consciousness, the default action is to continue to do the same, but harder or longer or more sincerely. Thus in terms of action, the universalist hypothesis is associated with the status quo, or with widely-accepted reform movements such as "restructuring." That is no logical necessity, and as we will see, there is good evidence that if a universalism is to be discovered for pedagogy, it will be of a different kind than is now conventional.

The Nature of the Evidence. A few years ago (Tharp, 1989a) I wrote that the most energy of those interested in African-American educational improvement has been channelled into desegregation, and into equal treatment for all students; and that most Hispanic attempts at education reform have been directed toward issues in bilingualism, particularly toward issues of English acquisition, Spanish use and/or preservation, and improvement both of ESL pedagogy and of school attitudes toward bilingualism. Further, most inquiries into the schooling experiences of Asian-American students have concentrated on parent-child relationships.

The intervening years have produced some changes, though not so many as might have been hoped. There has been added a good level of activity in the study of home-school relationships in Hispanic communities in which the variables and processes present in the home are analyzed for their effects on school success. Notable is this work are Gallimore and his associates (e.g., 1991), Delgado-Gaitan (1987), and emerging studies such as Gibson and her associates (personal communication). Some few studies of the particularities of African-American children in classrooms have been added (e.g., Allen & Boykin, 1991), but this rich research-and-development opportunity (outlined by Shade in 1982) remains largely unexplored, apparently due to the belief by the majority of Afro-American educators that standard education is the only assurance of fair education.

Thus the preponderance of evidence for cultural issues in education came from classrooms of Native Americans in the Western United States and Canada, Alaska, and Hawaii. A major source of theory, research and demonstration was the Kamehameha Early Education Program (KEEP) , which over a 20-year period developed and studied a culturally-compatible K-6 language arts program for children of Hawaiian ancestry (Tharp, Jordan, Speidel, Au, Klein, Sloat, Calkins, & Gallimore, 1984). Effectiveness data have been reported both by the program operators (Tharp & Gallimore, 1988; Klein, 1988; Tharp, 1982; Gallimore, Tharp,

Sloat, Klein, & Troy, 1982), and by external experts (e.g., Calfee, Cazden, Duran, Griffin, Martus, & Willis, 1981). The KEEP group also operated a research-and-development site on the Navajo reservation of northern Arizona for six years. Selected because of the sharp contrast of ecocultural setting of the two cultures, Navajo and Hawaiian versions of the KEEP program emerged with clear differences.

In addition there is a broad base of evaluation and program development literature coming from Native American schooling, both in the United States and Canada, which seeks to find ways of teaching and schooling that are compatible with traditional cultures and the current community. A recent review of that material is available (Tharp & Yamauchi, 1991).

The Evidence for the Compatibility Hypothesis. One line of argument for the compatibility hypothesis lies in discovering a minority group whose culturally-based teaching-learning proclivities match well standard schooling practices. The compatibility hypothesis would predict school success for such a group. Chinese children, as described by Wu (1982), would appear to be such a case. Wu emphasizes that, on the basis of traditional culture, Chinese children are highly respectful of writing and written text, are respectful of the teacher as authority, are accustomed to individual, competitive effort, and rely on repetition and practice. These qualities are probably more pronounced in Chinese children than in majority-culture children, for whom (presumably) the standard school was designed. These qualities, nevertheless are virtually defining expectations for standard American schooling, which emphasizes assignment of text, individual assessment, and repetitive practice activities. The high comparative success in schooling of Chinese-American students is consistent with the compatibility hypothesis. Of course, this argument is based on logical analysis; I know of no empirical evidence that bears directly on the issue.

The evidential case for cultural compatibility can be discussed under the headings of the four classes of variables that have been most studied in the conscious tailoring of classrooms to children of different cultures: 1) social organization, 2) sociolinguistics, 3) cognition, and 4) motivation.

Social Organization

The typical North American classroom uses primarily whole-class organization, with rank-and-file seating and a teacher-leader who assigns text, instructs or demonstrates to the whole group, followed by some form of individual practice, and then teacher-organized individual assessment. This system is not the most effective for the students from all cultures. For many it produces a low level of child attention to teachers and classwork, which is disturbing to teachers, who attribute the problem to low academic motivation, rather than to an alien social organization (Tharp & Gallimore, 1976).

In the natal Hawaiian culture, collaboration, cooperation and assisted performance are commonplace. Sibling caretaking is common in Hawaiian socialization, and the sibling group and companion band are ubiquitous social organizations that tend to create their own activities

(Gallimore, Boggs, & Jordan, 1974; Boggs, 1985). In the culturally-compatible KEEP program, a small-group classroom organization was designed for Hawaiian children. The teacher engaged in an intense instructional conversation with a small group of students, while the majority of mixed-sex and mixed-ability students worked in independent groups of 4 to 5. A peer teaching-learning interaction occurred there every 3 minutes per child in kindergarten; in the first grade, once every 2.5 minutes (Jordan, 1977; 1983; 1984). The KEEP group, in its comparison study, introduced this identical pattern of classroom organization into a Northern Arizona Navajo classroom, as a modest test of the "two-type" compatibility hypothesis.

Navajo children also worked diligently in the independent work groups ("centers"). However, they worked much more independently, with few instances of offering or requesting peer assistance. Individuality and self-sufficiency of children is not surprising in the Navajo pastoralist culture, where six-year-olds begin to herd sheep far from home, alone. Sibling and peer groups are present in Navajo culture, whenever brothers, sisters or cousins live together, and certainly in ceremonial and other community gatherings, but most are single-sex groups. In adult Navajo society, male and female roles are clearly defined and separate. Around the age of eight, boys and girls are cautioned against playing with each other. In the Navajo classroom, only when the groups were reorganized as same-sex did peer assistance become frequent (Vogt, Jordan, & Tharp, 1987).

Minority children all have social skills and problem solving abilities, though they may take several forms depending on culture. These skills can be brought into play by creating compatible social organizations of the classroom. Ethnographic work in urban black ghetto schools described students' intense and sensitive peer relationships, physical expressiveness, and their skillful manipulations of the behavioral dynamics of their classrooms. The staging of impromptu "dramas," designed to tease, test, and sometimes to intimidate teachers, was a frequent technique (Williams, 1981).

> These skills are not developed in ghetto schools but are suppressed and interpreted as delinquency. ...Left undeveloped, these skills get more disruptive...and can reach a level where they appear to be violent rebellions (Williams, 1981, p. 214).

By creating settings using group interaction and competitions, these tendencies can be brought into instructional use. Front-of-the-class performances related to instructional goals, with the balance of the class attentive to discover errors that will allow them to replace the performers, were highly motivating for individual "performers" and "audience" alike (Williams, 1981).

To activate Indian student strengths, small-group problem-solving structures and individual assignments are preferred (Leith & Slentz, 1984). In the effective Athabaskan Indian classrooms studied by Barnhardt (1982), the majority of each school day was spent in individual or small group activities. The teachers moved from student to student, kneeling or squatting down on the floor for lengthy quiet individual discussions. When the teacher raised her voice again it signaled that the larger group was once again part of the audience (Barnhardt, 1982).

Sociolinguistics

The courtesies and conventions of conversation are among the most powerful differentiating elements of culture. Critical differences exist across cultures, and between many cultural groups and the classrooms in which their children are educated. When violations of the expectations of either teacher or children occur, it results in anger, alienation, or withdrawal. The result is often a school diagnosis of "low verbal ability," even for children who in other settings are highly verbal. Some variables studied by sociolinguistics can seem esoteric and inconsequential. But the weight of all those courtesies and conventions of discourse is enormous in determining relationship, learning, and satisfaction in the classroom.

Narrative Style. Michaels (1984) has shown that children of different cultures tell stories in different ways, with startling audience effects. In her study, white children were topic-centered in their narratives, with thematic cohesion and a temporal reference. Black children used a topic-associating style, consisting of a series of implicitly associated anecdotal segments with no explicit statement of an overall theme or point. White adults (including teachers) criticized the topic-associating style as incoherent, but black adults found it interesting with lots of detail and description. It is apparent that this cultural difference in basic language structure can lead to quite different judgments and predictions in the classroom, with consequences often bewildering to both teachers and children.

Wait Time. Wait-time I is the amount of time given by teachers for students to respond to questioning; wait-time II is the amount of time following a student response before the teacher again speaks (Rowe, 1974).

Wait-times are to some degree culture-dependent. White and Tharp (1988) investigated differences in wait-time between an Anglo and a Navajo teacher of the same Navajo third-grade students; the Navajo teacher had considerably longer wait-time II than did the Anglo. What was perceived by the Anglo teacher as a completed response was often intended by the child only as a pause, which the Anglo teacher interrupted. Pueblo Indian children in experimental science classes participated spontaneously twice as frequently in longer wait-time classes than in shorter wait-time classes (Winterton, 1976). Even in college, Indian students report that short wait-time in seminar interactions is still a difficulty for them (Leacock, 1976).

On the other hand, Native Hawaiian children have a characteristic negative wait-time in informal settings, a pattern which produces overlapping speech, and which demonstrates involvement and relationship (White & Tharp, 1988). In classrooms, this is interpreted by other-culture teachers as rude interruption. Schools' attempts to curtail this overlapping speech only results in inhibiting participation of Hawaiian children in instructional activities.

Rhythm. Pioneering work in the sociolinguistic consequences of teacher/child interaction was done by Erickson and Mohatt (1977), in their classic report of an Indian teacher/student classroom that followed a slow, fluid, rhythmic tempo in the presentation of materials, in the

voice inflections and vocalization tempo on the parts of both teacher and students, and even in the pace of movement in the classroom. The homes of some of those students revealed similar patterns. When this rhythm went unnoticed and was disrupted by an Anglo teacher, a more disorganized and less efficient pattern of interaction, as well as a lower level of rapport between teacher and students, resulted.

Barnhardt (1982) discovered Athabascan Alaskan classrooms in which Native children were eager to participate, volunteered answers, spoke and read well, and asked questions. She analyzed these classrooms in terms of rhythm patterns of event emphasis (beat), rate (density), and silence (pauses), and found them to be similar to interaction rhythms of the home and community. She argues that the disruptive effects of alien rhythmic structures on children in the classroom may be compared to the distress of listening to music with incomprehensible rhythmic structures.

For Afro-American classrooms, a quite different rhythmic structure has been proposed for promoting teacher-student rapport (Hale, 1982). Hale suggests that effective speech rhythms during instruction by teachers of black children would be much like the rhythmic pattern of mother-child interaction, a "contest" style in which mother and child volley rhythmically. The child is encouraged to be assertive and to develop an individual style. Many Afro-American mothers give directions for household tasks to their children in a rhythm that approximates the call and response patterns found in black music (Young, 1970). Hale (1982) and Wharton-Boyd (1983) both suggest that classroom teaching patterns could be based on these call-and-response children's singing games.

Participation Structures. The KEEP "talk-story" pattern of classroom discourse was developed to counter the phenomenon that in ordinary classrooms, Hawaiian children are "nonverbal," and seldom ask questions. In out-of-school situations, though, there is a social organization that facilitates children's narrative production: a number of children, together with an encouraging, participating, but non-directing adult, in an informal setting. Identified, facilitated, and described by Watson-Gegeo and Boggs (1977), these activity settings found children taking turns as principal speaker, but all the children "co-narrated," with overlapping speech and frequent references to shared experiences. Watson-Gegeo and Boggs (1977) discussed this activity setting in terms of a frequently enjoyed speech event in adult Hawaiian culture, called "talk-story." They also observed that children cannot manage a talk-story session alone until adolescence; in earlier years, an assisting adult is needed.

In an effort to create comparable classroom participation structures that would also produce child fluency and participation, KEEP developed the instructional-conversation format they call Center One. Each day each child meets in a small group with the teacher for a 20-minute discussion of some text. The participation structures of the KEEP Center One lesson resemble those in the Watson-Gegeo narratives and in adult talk-story (Au, 1980; Au & Jordan, 1981). There are rapid-fire responses, liveliness, mutual participation, interruptions, overlapping volunteered speech, and joint narration. Au and Mason (1981) found higher rates of academically productive student behavior in these talk-story-like participation structures.

A sharper contrast could hardly be found than that between the Hawaiian pattern and that of the Navajo culture. Whereas Hawaiian children speak vigorously in shorter bursts of overlapping speech, and the teacher must often be "assertive" in getting the floor, long, patient turn-taking has been the standard description of Native American meetings, from the earliest pow-wows reported by Europeans. In the Navajo version of KEEP instructional conversations, each student speaks for longer periods while other students wait courteously. Ideas are developed with greater leisure, and are often individualistic rather than tied to statements of previous speakers. Navajo children volunteer both questions to the teacher and comments to the group at large.

When school sociolinguistic patterns are incompatible with natal culture patterns--for example, when the teachers use the "switchboard" pattern of interaction--many Indian culture children develop patterns of short answers, interruptions, and silence, which by high school, have calcified into a controlling and resentful repertoire of hostility (Greenbaum & Greenbaum, 1983).

When sociolinguistic school/home compatibilities are present, children are more comfortable, participate, and display their abilities appropriately. Another instance is Lein's study of black migrant children. Teachers found them below grade level and unresponsive. But at home and in the community these same children speak and act in complex and competent ways. At home and at church, the expectations are similar; therefore, at church they exhibit full competence and full participation. This can offer an example to schools of how formal institutions can engage their young by compatibilities of expectations with child repertoires (Lein, 1975).

Cognition

North American schools expect, and instructional practices presume, a certain pattern of cognitive functioning in students: for example, a tendency toward verbal-analytic thought rather than visual/wholistic. When children correspond to that pattern, they are more likely to succeed in school, and that is the apparent pattern for Japanese- and Chinese-Americans. The available evidence is inferential, but Stevenson, Stigler, Lee, Lucker, Kitamura, & Hsu (1985) studied a cross-national comparative sample of Japanese, Chinese, and white American first- and fifth-grade children. They concluded that children in each culture "have strengths and weaknesses, but by the time they are enrolled in the fifth grade of elementary school, the most notable feature of their performance is the similarity in level, variability, and structure of their scores on the cognitive tasks" (p. 734). From the cultural-compatibility point of view, this helps to explain why Japanese-American and Chinese-American students typically hold their own (or better) even as minorities in American schools: the levels and patterns of cognitive skills fit school expectations. Do students from other minorities, those who do not prosper in the schools, have different patterns of cognitive functioning from those expected by schools? The evidence is scattered, and again largely restricted to Native Americans, but differences appear.

Specific cognitive abilities. Internationally, typical school instruction appears to depend more heavily on Verbal and Sequencing skills than on Performance and Spatial skills. Native Americans consistently score in the opposite patterns, that is, higher in Performance than in Verbal abilities, and higher in Spatial than in Sequencing skills (e.g., Browne, 1984; Kaulback, 1984; McShane & Plas, 1982; Gallimore et.al., 1982). However, Native children have improved significantly in sequential memory tasks (Krywaniuk & Das, 1976; More, 1985), and have demonstrated satisfactory progress in text-dominated courses (John-Steiner & Osterreich, 1975), when culturally-compatible instructional features are present. The explanation for differential achievement lies in some interaction of instructional procedures with cognitive proclivities.

Wholistic/visual vs. verbal/analytic thought. Is the explanation in patterning of abilities, or in some system for organizing learning and thought? "Cognitive style" has been a loose construct that various writers have used to refer to such diverse variables as representational structures, sensory modality strengths, processing sequences, incentive valences, attributional probabilities, and implicit judgments of virtue, often bundled together without regard to any theoretical justification (Cazden & Leggett, 1981). Two aspects of cognitive style have suggested some cultural differences. One, field dependence/independence has generated much research on cross-cultural cognition (Witkin, 1967), but has contributed little to educational research and development (Cazden & Leggett (op.cit.)).

A difference that may make a difference is in another "cognitive-style" variable: a visual, as opposed to a verbal, emphasis in perception and representational structures (for reviews see Berry, 1976; Kaulback, 1984; More, 1985; Tharp, in press). A visual emphasis is closely related to wholistic (vs. analytic) thought processes. In wholistic thought, the pieces derive their meaning from the pattern of the whole. In analytic thought, the whole is revealed through the unfolding of the sections. Wholistic comprehension proceeds by incorporating phenomena into ever-expanding circles of context, rather than by reducing phenomena to their disassembled parts (Tharp, in press).

> Rather than through analytic and linear means, the concept of wholism may be communicated best by a wholistic device: a "teaching story." Joan Gentles, a Chilcotin Indian educator, has told me how, as a girl, she learned to prepare salmon. After watching her mother, she was allowed to gradually take on portions of the task, and to ask questions only if they were important. Once she told her mother that she didn't understand how to do "the backbone part." So her mother took another entire fish, and repeated the de-boning. It is not possible to fully comprehend the backbone part except in the context of the whole fish (Tharp, 1989, p. xx).

An entire "observation-learning complex" is involved in the kinds of cultural socialization that produces wholistic thinking. The complex includes: observing first, and thus gaining competence before performance; learning-by-doing, rather than through verbal instructions; a centrality of visual cognitive representational structures; and a sociological pattern of children's involvement with adult activities (Cazden & John, 1971; Rogoff, 1986; Tharp,

1989a).

Lipka (1991) provides an analysis of Eskimo teachers' lesson transcripts; they reflect observational learning strategies. Lipka describes the lessons thus:

> Activities begin without the customary lengthy verbal introduction Anglos expect . . . The students seem quite comfortable following the modeled behavior. The teacher's instructional style also includes modeling (doing his "own work"), joining in with the students (seated on the floor with the students as he blends into the class), and reinforcing peer-group solidarity and deep respect for individuals.
>
> There is intentionality in his style. For example, there are a few times during the lesson when students will say *nutmen* (where), and the teacher intentionally ignores the students. He does not want to reinforce dependence on verbal instruction during activities that call for observation. (Lipka, 1991, p. 213-214).

Wholism in the classroom. Even for basic skill literacy and numeracy lessons, it is possible to systematically favor wholistic and visual teaching strategies, by emphasizing whole-story discussions, overarching themes, and by using visual diagrams and metaphors. KEEP has reported that Navajo children often demanded to hear or read a story through to the end before starting discussion (Jordan, Tharp, & Vogt, 1985). In community story-telling, children are not asked to recite details of the story or to dissect it, but are expected to listen quietly to the long telling of stories. Teachers of Indian children who frequently interrupt narrative events with assessment questions produce a sharp cultural discongruity (Phillips,1972, 1983; Wyatt, 1978-79).

John-Steiner & Oesterreich (1975) discuss this same phenomenon among Pueblo children, and provide a link from this interpersonal event to a cognitive style:

> Children listening to the many legends of their people learn to represent these visually . . . because they are not allowed to ask questions or verbally reflect on what they hear. They are to say only aeh hae to acknowledge auditory attention. As a result, while the verbal representations of some of these legends are fairly simple nursery tales, the inner representations of the same legends, for older children and adults, are replete with highly abstract visual and symbolic articulations of cultural values. (John-Steiner & Oesterreich, 1975, p. 192).

Every adviser and researcher familiar with Native American education urges the use of wholistic presentations and visual representations during teaching of Native children. These strategies are often advocated by educational reformers for majority culture students, too, though for different reasons. White and Asian children may well need such "training;" whereas Native children may require wholistic and verbal contexts in order to frame the development of analytic and verbal skills. When reading programs are congruent with the "simultaneous" (wholistic) style of Indian children, as opposed to the "successive" style of

non-Natives, they can strengthen "successive," or linear, abilities (More, 1985). For example, reading and mathematics instruction, when presented in a visual, wholistic manner, strengthens the students' abilities to read and calculate in a linear, verbal mode.

The more general issue raised by the visual/verbal representations is that of learning through participation of the several sensory modalities. Allen & Boykin (1991) demonstrated that Afro-American primary children, as opposed to Euro-American counterparts, learned a picture-pairing task best in a "High Movement Expressive" context--that is, with an opportunity to move to music during acquisition trials. This study continues Boykin's (1978) interest in Afro-American children's "verve"--a preference for a variety of rapid paced and varied stimulation. Allen & Boykin's important analog study is evidence for cultural differences in school-learning tasks, attributable to differential involvement of sensory modalities.

This is at the heart of Vera John-Steiner's concept of "cognitive diversity:"

> In proposing a pluralistic approach to thinking, I have argued that while an individual may have a dominant mode of representation (or internal code), there is no single universal language of thought.. . . there are wide variations among individuals in the extent to which their internal, symbolic codes are based on verbal language, abstract visual schemata, musical representations, or kinesthetic images (see Gardner {1987}) ...the coordinated use of two differing codes can assist a thinker in successfully solving a demanding task, (John-Steiner, in press, p. 73).

Motivation, Trait and State

"Trait" Motivation. Some motivations are relatively consistent, persistent, and supported by parental, community, and cultural reinforcement--these can be considered "trait" motivations. An example that has powerful effects on school outcome can be drawn from the remarkable success and satisfaction with school achieved by recent immigrant Hmong, Vietnamese, and Korean groups--in spite of the fact that 80 percent of these children report language conflicts, prejudice, and teasing from other children. The families, however, tend toward strong beliefs in education, high expectations for school performance, and constant admonitions to study (Hirayama, 1985).

This is reminiscent of Punjabi immigrant families in the California community of "Valleyside, " whose children are highly successful students. They know that failure puts them at risk for being withdrawn from school and put to work in the fields. They are clearly and often told by their families that they bear the responsibility for school success themselves; they must study hard, respect their teachers, stay out of fights with their peers, finish their homework, and generally succeed for the honor of themselves, their families, and the entire Punjabi community (Gibson, 1986).

In many immigrant groups, there is parental emphasis on the welfare of the family as a

whole, and the assumption by the student of the moral burden of succeeding for the whole family, if not the whole community. These factors are both characteristic and predictive of success within the Asian groups studied by Hirayama (1985). Suarez-Orozco (1987) discussed the Mexican child's responsibility for the honor of the entire family, and has also described the burden of guilt and responsibility of Central American refugee students in Los Angeles schools, many of whose families have suffered extreme misfortune, and even death, in bringing them to America. Now they must succeed, through education. This is motivation indeed.

While many immigrant groups do succeed in American schools, immigrant status per se does not produce school success. In Hawaii, both Samoan and Filipino immigrant students are at-risk groups for school failure. And school-relevant motivations change as immigrant children learn different motivations in schools themselves, such as competition and individualism (Trueba & Delgado-Gaitan, 1985).

As for more conventional psychological measures of trait motivation, the "Need for Achievement" (NAch) is, among majority culture students, generally associated with school success. Although black, Hispanic, and Hawaiian children's tests often show less need for achievement and more need for affiliation, they do not lack motivation for accomplishment, recognition, and reward. But achievement is more often sought in a context and for the purpose of family and peer-group solidarity and identification, rather than individual and independent attainment (Gallimore, Boggs & Jordan, 1974; Ramirez & Price-Williams, 1976).

"State" Motivation. State motivation refers here to those motivational and incentive variables existing in the classroom itself, and which are manipulable by teachers and program designers. Motivation by interest-level of materials, by contingent reinforcement and punishment, and by teacher relationships may not be crucial for children whose school-motivation is inculcated and continually supported by their own families and community; but these features are often imperative for engaging and managing disaffected, underachieving children. For example, the introduction of supplementary incentives for frequency of reading was more effective for Chicano children than for Anglos (Hosford & Bowles, 1974).

KEEP researchers report on-task rates for their Hawaiian classrooms of 80%+ (Tharp, 1982), which they attribute both to a manipulation of school-based incentives, and to a system of teacher-child relationship developed by close study of Hawaiian children at home and at school (Gallimore, Boggs, & Jordan, 1974). For example, Hawaiian children are highly peer oriented, and indeed are taught not to approach adults except on invitation (Gallimore, Boggs, & Jordan, op.cit.). Therefore every teacher in every class in every year must reestablish her legitimate claim to authority by establishing a warm, firm, but personal and affective link with students

Among the Navajo, punishment, contingent reward, or any openly manipulative effort to control the behavior of others--including children--is a violation of cultural values. Navajo

adults are more reserved in their affectionate displays, but are highly respectful of children's individuality and their rights for self-determination. This is notable in comparing the atmosphere of the two classrooms. The teachers in both KEEP programs maintain high on-task rates, orderly rotations, and excellent compliance. But the Navajo teachers accomplish this while moving through the classroom in what seems, by Hawaiian comparison, virtual silence.

Thus for Navajos, the reinforcing and punishing value of identical teacher behaviors are often reversed from those for Hawaiians. The reinforcing valence of particular classroom conditions and events may also be quite different for Navajo and Hawaiian children. For example, "time-out" from the social interactions of recess or in-class activities is a painful punishment for Hawaiian children. In Navajo classrooms, children are quite content to be alone, and indeed often have to be escorted from one area of school to another to prevent their running away to spend the balance of the school day playing alone.

In summary, there is evidence that cultural differences in social organization, sociolinguistics, cognition, and motivation, when reflected in compatibilities in classroom practices, make for classrooms that are endorsed by culture members and other students of those cultures, are associated with greater child participation and enjoyment, are associated with better school achievement, and produce classrooms that are discernibly different for students of different cultures.

Now let us consider the apparent limitations on the development of specific-culture educational programs. It must be noted that comparatively few have been designed to survive the practicalities of schools. In the culture and education movement, most compatibilities have been established through choosing established modalities which per se allow for greater influence of the child's culture, or at least do not demand incompatible child behavior.

The majority of mental health programs for minority children appear to be using that same tactic: Few specific treatment modalities have been invented (for an exception, see Costantino, Malgady, & Rogler {1986}). Certain modalities, however, are overwhelmingly preferred by therapists knowledgeable of certain cultures; and each instantiation is recommended to be conditioned by the culture. Thus, family therapy is repeatedly recommended for Hispanic children, but the recommendation is equally strong that the family must be treated in ways that reflect that family's composition, values, and language (e.g., Inclan, 1984; Vazquez-Nuttal, Avila-Vivas, & Morales-Barreto, 1984). By electing modalities that naturally include family and community members and/or settings, some compatibility is assured by the objective introduction of the cultural context.

Likewise, the cultural-compatibility movement in education appears to have settled on the "least-change" principle (Tharp, et.al, 1984), which calls not for inventing entire new pedagogies or teaching modalities but the careful selection of modalities of demonstrated effectiveness in real schools and by working teachers. The selection and mix of such modalities may be quite different for children of different cultures, and it is certain that the

instantiation of the modalities will be modified by contextualizing them in the experience and language of the children's daily lives.

We may now return to the original question. Are there forms of education that are specifically suited for the treatment of children of different cultures? Yes.

4) Are There Universal Forms of Teaching That Will Equally and Adequately Address Classrooms of Students of Diverse Cultures?

Having reviewed the evidence for cultural differences that impact teaching, learning and schooling, we are in much better position to consider another problem of the highest social import, that of the multicultural classroom. Critics of the cultural compatibility movement too often leap to a dismissive conclusion, that classrooms cannot possibly be compatible with more than one, and often a great many cultures, therefore cultural dimensions of teaching/learning are irrelevant. This is, in my view, a grave error. Awareness of the variables in which cultural incompatibilities interfere with teaching/learning alerts us to possibilities for correction and rearrangement. Even more important, this awareness allows us to devise conditions of instruction in which the variables (of differences in sociolinguistics, motivation, cognition, and social organization) are least likely to be divisive.

In more conventional phrasing, the question is: Under what conditions will effective education for classrooms of diverse students be most likely to occur? Although cultural differences can never be completely abrogated and will always require some accommodation and special attention, we do in fact know major conditions, which, if achieved, will reduce the divisive impact of cultural differences. To many policy makers it may be a surprise, but the answer is well enough known, and is sufficiently consensual, for us to proceed with confidence.

Prescriptions for Improvement: The Four Principles*

Although the cultural compatibility research base has been developed by examination of monocultural classrooms, it is possible to look at these studies of many minority cultures in another way. That is, are there any uniformities among the recommendations of those researchers who have studied African American, American Indian, Eskimo, Hawaiian, Puerto Rican and all the other culture-school relationships? Indeed there are. In fact, remarkable similarities are present in the recommendations. Another way of phrasing this issue is this. The four variables for which research is reported above are those which, if incompatible, can divide and interfere with progress among members of the learning community. The four principles discussed in this section are educational processes that can unite the members of the community, or at least minimize the impact of their cultural differences. The list has been

* The following principles do not map onto the four variables discussed in the preceding section; they speak to quite different issues. That each list numbers four is coincidental.

developed by examination of the existing literature, and assembling the recommendations, research results, advice of experts, and case study implications that are now available to scholarship.

All the principles are stated as descriptors of schooling in which the distilled recommendations are operating.

Principle I. Developing competence in the language of instruction is a metagoal of all instructional activities of the school day.

Mastery of the language of instruction, whether in bilingual or monolingual programs, will continue to be the sine qua non for academic achievement to the extent that verbal means of instruction continue to dominate, and to the extent that literacy continues as the core goal of education.

Cultural groups that do not emphasize verbal analytic problem solving are handicapped in schools because teachers are so heavily reliant on verbal analytic methods and the use of verbal forms of instruction. For such children, cultural compatibility educators have repeatedly advocated the use of visual and wholistic methods for the teaching of literacy, numeracy, and science. However, they also advocate the inclusion in educational programs of activities specifically designed to produce language development (e.g., Kaulback,1984; Speidel,1987b).

The current literacy movement in cognitive and educational research is revealing the deep ties among language, thinking, values and culture. Language development at all levels--vocabulary through syntax--is advocated as a self-conscious and ubiquitous goal for the entire school day. Evidence is also strong that language development of this kind should be fostered through use, and through purposive conversation between teacher and students, rather than through drill and decontextualized rules (Speidel, 1987a; 1987b). The methods appropriate to language development in the multicultural classroom will be discussed under two other principles below; however it is done, the first principle for the multicultural classroom is that development of the language of instruction should be a metagoal of all instruction, and should be pursued throughout the day and across the curriculum.

Principle II: Teaching, curriculum and the school itself are contextualized in the experiences, skills and values of the community.

The second constant recommendation of the culture and education field, and indeed of developmental theorists and educational reformers, is for an increase in contextualized instruction. Schools teach rules, abstractions, and verbal descriptions. They teach by means of rules, abstractions, and verbal descriptions. Many cultural communities do not. Schools must assist such students by providing experiences of how rules, abstractions, and verbal descriptions are drawn from the everyday world, and how they are applied again to it.

In an unusual culture and education study, Hvitfeldt (1986) studied the classroom behavior of Hmongs in an adult education English class, who had enough influence over their classroom and instructor to persist in their preferred sociolinguistic and role-relationships. However hard the instructor would try to use abstract and decontextualized examples, the Hmong would themselves contextualize the instruction by promoting a warm, personal relationship with the instructor, by asking him personal questions, teasing, laughing, and joking with him. When the instructor would not specify context, the students themselves would relate it to a known, personal context. When the instructor used fictional Hmong names in drills, the students invariably stopped the lesson to check with one another about who this person might be in the Hmong community. These adults forced contextualization on the instructor. Child students can seldom do so. Contextualization therefore must be provided by the teacher and school.

Three levels of contextualization are discussed in the culture and education literature. At the first, or pedagogical level, is the necessity to invoke children's existing schema as they relate to material being instructed (Au, 1979). That is, the content of instruction should be drawn from, or carefully related to, the child's own environment and experience (Garcia, 1991).

At the second, or curriculum level, there is uniform advocacy for instructional use of cultural materials and skills as the media in which goals of literacy, numeracy, and science are contextualized, drawing on personal, community-based experiences as the foundation for developing school skills (e. g., Wyatt, op. cit.), and thus affording students opportunities to apply skills acquired in home and school contexts (Garcia, 1991).

At the third, or policy level, there are advocates for contextualization of the school itself. School-learning is a social process that affects and is affected by the entire community. "More long-lasting progress has been achieved with children whose learning has been explored, modified, and shaped in collaboration with their parents and communities" (John-Steiner & Smith, 1978, p. 26).

All levels of contextualization by anchoring in personal, community, and cultural meanings appear to have this same felicitous, if paradoxical, effect. The high-literacy goals of schools--verbal, analytic, and abstract knowledge and cognition--are better achieved in everyday, culturally-meaningful contexts. This contextualization utilizes child experiences and skills as a sound foundation for appropriating new knowledge. This approach fosters pride and confidence, as well as greater school achievement.

The first two principles that we have discussed are entirely consistent with all available research and theory. And Garcia (1991) is pointed and accurate in urging these conditions all the more for culturally diverse classrooms. This introduces an apparent paradox: the greater the need for contextuality, the greater the apparent difficulty of producing it. How is the teacher to provide for contextualization in the experienced life of the student when the students vary so widely in their life contexts? And how can teachers know that context for

each diverse child?

Principle III: Teaching and learning occurs in contexts of joint productive activity with peers and teacher

The basic strategy for maximizing the contextuality for students of diverse cultural origins, is to create a common context of experience in the school itself. Contemporary sociocultural theory emphasizes that learning takes place best in joint productive activity, that is, when experts and novices work together for a common product or goal, and during the activity have opportunities to converse about it (Wertsch, 1985; Tharp & Gallimore, 1988; Rogoff, 1991).

In natural (non-formal) settings even the youngest children, as well as mature adult learners, develop their competencies in the context of joint activity. Shared ways of understanding the world are created through the development of language systems and word meanings that are used during shared activity. Schools do not typically do it this way; there is little joint activity from which common experiences emerge, and therefore there is no common context that allows students to develop a common understanding with the teacher and with each other.

The well-understood, formal task of schools is to promote the development of discourse competencies, word meaning, and conceptual structures in a variety of content areas. How does one develop those competencies? It is not well understood by schools that it requires everyday, shared experience in which the concepts take on meaning, activities that provide an interface of the content area systems with those of everyday concepts. It is on that interface that the highest order of meaning is achieved, insuring that tools of verbal thought can be manipulated for the solution of practical problems of the experienced world. "Effective instruction with young children involves a continuous integration of language and action" (Wood, 1980, p. 290).

This system is used consistently in the highest reaches of scientific and philosophical thought. Theoretical thought and discussion requires a continual freshening by example and a testing against sensory data. This constant connecting of schooled concepts and everyday concepts is the basic process of understanding the world used by mature schooled thinkers.

Joint productive activity is also motivating. For example, we know that the discourse of science occurs in a particular register with its distinct rules and formalities. In the teaching of science, however, these conventions are frequently violated by the interpolation of everyday discourse. These variations stimulate students' interest. These alternations are marked by tone of voice, laughter, asides, etc. During these times, the attention of students is at its highest (Cazden, 1987).

One final characteristic of joint productive activity as the basic context of instruction for culturally diverse classrooms: the activities should be shared both by students and teachers. Only if the teacher is also present sufficiently to share the experiences can the kind of

discourse take place that builds basic schooled competencies.

This principle of joint productive activity has been summarized by Garcia (1991) as a set of teaching principles for Hispanic students. The conclusions are no different for any classroom in which a shared children-teacher cultural and community context is lacking. In such classrooms there should be 1) activity settings for joint work with peers and teacher, 2) learning through active rather than passive endeavors, 3) in an integrated curriculum, providing opportunities to study a topic in depth, and applying skills acquired in home and school contexts; and 4) opportunities for applying concepts to a meaningful context (paraphrased from Garcia, 1991).

Principle IV: The basic form of teaching is through dialogue between teacher and learners--through the Instructional Conversation.

For so long as the basic goal and process of school is verbal knowledge and verbal analysis, then the royal road to educational attainment, which can provide the cognitive and experiential basis for allowing teachers to relate emerging knowledge to the individual, community and family knowledge of the student, is the Instructional Conversation. The development of thinking skills, the abilities to form, express, and exchange ideas in speech and writing: for all these basic processes, the critical form of assisting learners is through dialogue, through the questioning and sharing of ideas and knowledge that happens in the Instructional Conversation.

The concept appears to be a paradox: "Instruction" and "conversation" appear contradictory, the one implying authority and planning, the other equality and responsiveness. The task of teaching is to resolve this paradox. To most truly teach, one must converse; to truly converse is to teach.

In the instructional conversation, there is a fundamentally different assumption from that of traditional lessons. Teachers who engage in conversation, like parents in their natural teaching, are assuming that the child may have something to say beyond the "known answers" in the head of the adult. They occasionally extract from the child a "correct" answer, but to grasp the communicative intent of the child requires the adult to listen carefully, to make guesses about the meaning of the intended communication (based on the context, and on knowledge of the child's interests and experiences), and to adjust their responses to assist the child's efforts—in other words, to engage in conversation.

Through this conversation, the culture of the learner is clearly revealed. The assumptions, perceptions, values, beliefs, experiences--all the subjective and cognitive components of cultural membership will be revealed through genuine conversation, thus allowing the teacher to be responsive, to contextualize teaching in the experience base of the learner, and actually to individualize instruction in the same way that each learner is individualized within culture.

Teaching through dialogue is (in one way) already present in the cultural repertoire of most

teachers, and in another way is an exquisite skill that requires much work to perfect. Although good instructional conversations often appear to be "spontaneous," they are not—even though young students may never realize it. The instructional conversation is pointed toward a learning objective by the teacher's intention, and even the most sophisticated learners may lose consciousness of the guiding goal as they become absorbed in joint activity with the mentor.

In American schools the Instructional Conversation is rare indeed. More often our teaching is through the "recitation script," in which the teacher repeatedly assigns and assesses, assigns and assesses. But when true dialogic teaching occurs, classrooms and schools are transformed into "the community of learners" that schools can become "when teachers reduce the distance between themselves and their students by constructing lessons from common understandings of each others' experience and ideas" and make teaching a "warm, interpersonal and collaborative activity" (Dalton, 1989).

These four principles are related and form one wholistic view of education for classrooms of diversity. That is, the instructional conversation is the best method for development of the language of instruction, that occurs best when contextualized in experience, the ideal form of which is by creating joint productive activity, that becomes the setting for the instructional conversation. These principles distill the uniform research and experience of those who have worked in schooling of monocultural minority and of multicultural and of linguistically diverse classrooms.

Are these principles valid only for minority students? Far from it! Indeed, the principles are entirely consistent with natural teaching and learning, as practiced by homo sapiens traditionally, in all informal community, cultural, productive and familial settings since the dawn of time and on every continent. The principles may also be used to describe most-effective education for majority-culture students also. Traditional North American education, however, has not practiced such education, because the schools have relied on the family and community experiences of majority-culture adults to provide the activity, the conversation, the language development and the shared context upon which the schools could depend.

This is no longer true, in culturally and linguistically diverse nations. The schools must now provide the common experience, activity, language and conversation that learners require, both for individual development and the development of a common, shared and mutually endorsed community.

Therefore, we may confidently summarize the implications of research and development for policy:

To the extent that cultural diversity is present, it is the more critical that developing competence in the language of instruction is a metagoal of all instructional activities of the

school day.

To the extent that cultural diversity is present, it is the more critical that teaching, curriculum and the school itself are contextualized in the experiences, skills and values of the community.

To the extent that cultural diversity is present, it is the more critical that teaching and learning occurs in contexts of joint productive activity with peers and teacher.

To the extent that cultural diversity is present, it is the more critical that the basic form of teaching is through dialogue between teacher and learners--through the Instructional Conversation.

Adherence to these four principles will not remove the cultural differences that divide teachers and students. But classrooms so organized will provide for the common understanding and shared experiences upon which unity can be expanded. Adherence to these four principles will not change the wisdom of teacher sensitivity to differences among children in the courtesies and conventions of conversation that make them most comfortable, but it will provide common experiences upon which a new classroom convention and courtesy can be built. In short, these principles do not dissolve childrens' cultures; rather, they describe the best known available means of creating a new culture of the school which will move toward unity through a new, created microculture of the school.

Best now known must be emphasized. These conclusions derive from widely available published sources, and as such reflect the (surprisingly) consensual conclusions of active researchers, developers and theoreticians at this time. Much remains to be known, and there is no doubt that richer, wiser, and more inclusive knowledge can be developed. Additional knowledge, however, will now require that we begin the detailed study of classrooms that incorporate these state-of-the-art recommendations, so that the limitations of our current knowledge will be revealed. This should be the next emphasis of educational research and development.

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