Learning from Leadership Project
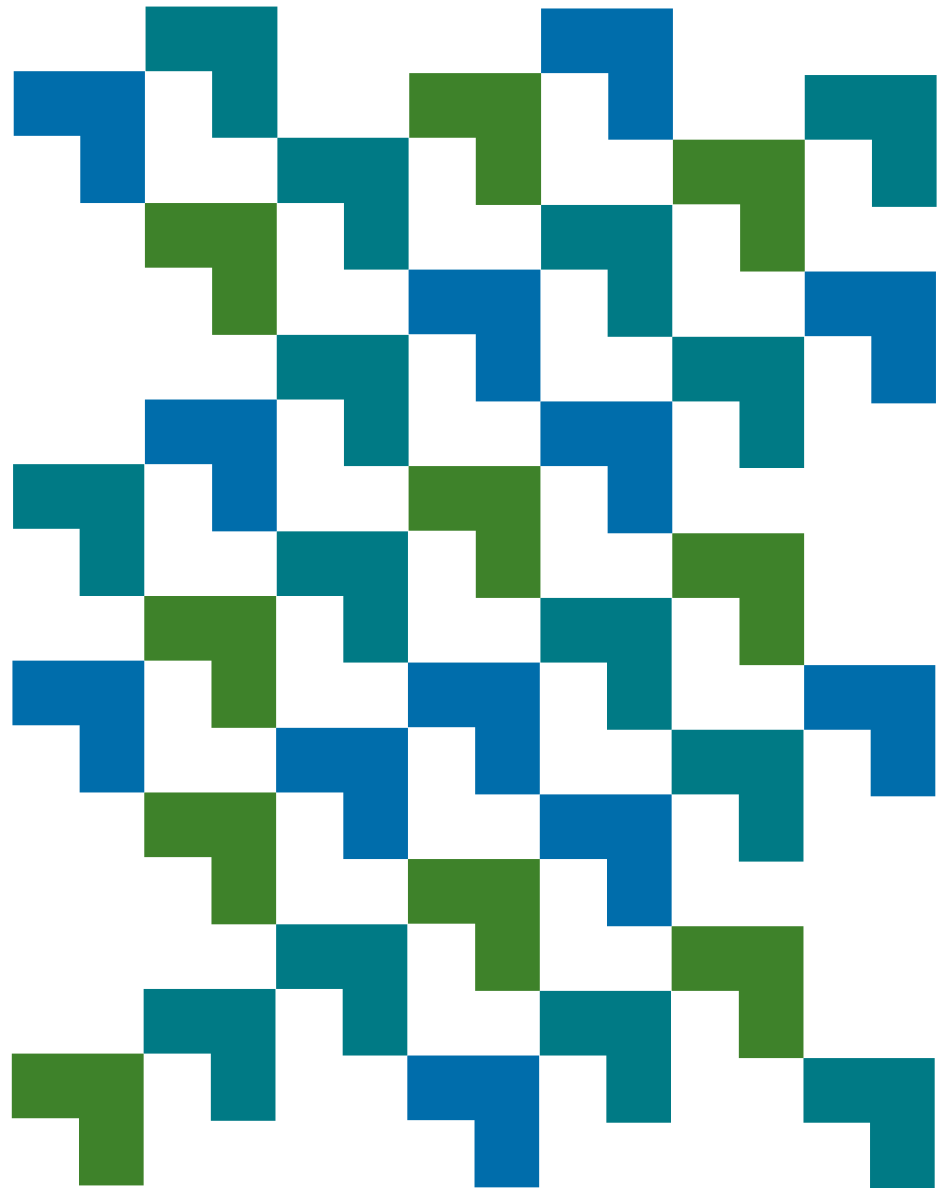
Review of research **How leadership influences student learning**

Kenneth Leithwood, Karen Seashore Louis, Stephen Anderson and Kyla Wahlstrom

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Executive summary **How leadership influences student learning**

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Taking stock in education leadership:
How does it really matter?

Effective education leadership makes a difference in improving learning. There's nothing new or especially controversial about that idea. What's far less clear, even after several decades of school renewal efforts, is just how leadership matters, how important those effects are in promoting the learning of all children, and what the essential ingredients of successful leadership are. Lacking solid evidence to answer these questions, those who have sought to make the case for greater attention and investment in leadership as a pathway for large-scale education improvement have had to rely more on faith than fact.

This report by researchers from the Universities of Minnesota and Toronto examines the available evidence and offers educators, policymakers and all citizens interested in promoting successful schools, some answers to these vitally important questions. It is the first in a series of such publications commissioned by The Wallace Foundation that will probe the role of leadership in improving learning.

It turns out that leadership not only matters: it is second only to teaching among school-related factors in its impact on student learning, according to the evidence compiled and analyzed by the authors. And, say the authors, the impact of leadership tends to be greatest in schools where the learning needs of students are most acute.

How do high-quality leaders achieve this impact?

By setting directions – charting a clear course that everyone understands, establishing high expectations and using data to track progress and performance.

By developing people – providing teachers and others in the system with the necessary support and training to succeed.

And by making the organization work – ensuring that the entire range of conditions and incentives in districts and schools fully supports rather than inhibits teaching and learning.

There is still much more to learn about the essentials of quality leadership, how to harness its benefits, and how to ensure that we don't continue to throw good leaders into bad systems that will grind down even the best of them. I'm confident that the knowledge in this report, and subsequent publications by this team of researchers, will help lead to more effective policy and practice at a time of fully justified public impatience for school improvement.

M. Christine DeVita

M. Christine DeVita
President
The Wallace Foundation

How leadership influences student learning

All current school reform efforts aim to improve teaching and learning. But there are huge differences in how they go about it. Some reforms, for example, attempt to improve all schools in a district, state[i] or country[ii] at the same time. Other reforms[iii] attempt to influence the overall approach to teaching and learning within a school, but do so one school at a time. Still others, focused on innovative curricula (in science and mathematics, for example), typically address one part of a school's program and aim for widespread implementation, while innovative approaches to instruction, such as cooperative learning, hope to change teachers' practices one teacher at a time.

As different as these approaches to school reform are, however, they all depend for their success on the motivations and capacities of local leadership. The chance of any reform improving student learning is remote unless district and school leaders agree with its purposes and appreciate what is required to make it work. Local leaders must also, for example, be able to help their colleagues understand how the externally-initiated reform might be integrated into local improvement efforts, provide the necessary supports for those whose practices must change and must win the cooperation and support of parents and others in the local community. So "effective" or "successful" leadership is critical to school reform. This is why we need to know what it looks like and understand a great deal more about how it works.

As the first step in a major research project aimed at further building the knowledge base about effective educational leadership, we reviewed available evidence in response to five questions:

❯ What effects does successful leadership have on student learning?

❯ How should the competing forms of leadership visible in the literature be reconciled?

❯ Is there a common set of "basic" leadership practices used by successful leaders in most circumstances?

❯ What else, beyond the basics, is required for successful leadership?

❯ How does successful leadership exercise its influence on the learning of students?

Leadership effects on student learning

Our review of the evidence suggests that successful leadership can play a highly significant – and frequently underestimated – role in improving student learning. Specifically, the available evidence about the size and nature of the effects of successful leadership on student learning justifies two important claims:

1. Leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school.

While evidence about leadership effects on student learning can be confusing to interpret, much of the existing research actually underestimates its effects. The total (direct and indirect) effects of leadership on student learning account for about a quarter of total school effects.[iv]

This evidence supports the present widespread interest in improving leadership as a key to the successful implementation of large-scale reform.

2. Leadership effects are usually largest where and when they are needed most.

Especially when we think of leaders in formal administrative roles, the greater the challenge the greater the impact of their actions on learning. While the evidence shows small but significant effects of leadership actions on student learning across the spectrum of schools, existing research also shows that demonstrated effects of successful leadership are considerably greater in schools that are in more difficult circumstances. Indeed, there are virtually no documented instances of troubled schools being turned around without intervention by a powerful leader. Many other factors may contribute to such turnarounds, but leadership is the catalyst.

These results, therefore, point to the value of changing, or adding to, the leadership capacities of underperforming schools as part of their improvement efforts or as part of school reconstitution.

The total (direct and indirect) effects of leadership on student learning account for about a quarter of total school effects.

Leadership:
Forms and fads

When we think about "successful" leadership, it is easy to become confused by the current evidence about what that really means. Three conclusions are warranted about the different forms of leadership reflected in that literature.

1. Many labels used in the literature to signify different forms or styles of leadership mask the generic functions of leadership.

Different forms of leadership are described in the literature using adjectives such as "instructional," "participative," "democratic," "transformational," "moral," "strategic" and the like. But these labels primarily capture different stylistic or methodological approaches to accomplishing the same two essential objectives critical to any organization's effectiveness: helping the organization set a defensible set of directions and influencing members to move in those directions. Leadership is both this simple and this complex.

"Instructional leadership," for example, encourages a focus on improving the classroom practices of teachers as the direction for the school. "Transformational leadership," on the other hand, draws attention to a broader array of school and classroom conditions that may need to be changed if learning is to improve. Both "democratic" and "participative leadership" are especially concerned with how decisions are made about both school priorities and how to pursue them.

The lesson here is that we need to be skeptical about the "leadership by adjective" literature. Sometimes these adjectives have real meaning, but sometimes they mask the more important underlying themes common to successful leadership, regardless of the style being advocated.

2. Principals, superintendents and teachers are all being admonished to be "instructional leaders" without much clarity about what that means.

The term "instructional leader" has been in vogue for decades as the desired model for education leaders – principals especially. Yet the term is often more a slogan than a well-defined set of leadership practices. While it certainly conveys the importance of keeping teaching and learning at the forefront of decision making, it is no more meaningful, in and of itself, than admonishing the leader of any organization to keep his or her eye on the organizational "ball" – in this case, the core objective of making schools work better for kids.

Sloganistic uses of the term "instructional leadership" notwithstanding, there are several quite well-developed models carrying the title of "instructional leadership" that do specify particular leadership practices and provide evidence of the impact of these practices on both organizations and students. Hallinger's model[v] has been the most researched; it consists of three sets of leadership dimensions (Defining the School's Mission, Managing the Instructional Program and Promoting a Positive Learning Climate), within which are 10 specific leadership practices. Both Duke[vi] and Andrews and Sodder[vii] provide other well-developed but less-researched models of instructional leadership.

Displacing the sloganistic uses of the term "instructional leadership" with the more precise leadership practices specified by well-developed leadership models is much to be desired.

3. "Distributed leadership" is in danger of becoming no more than a slogan unless it is given more thorough and thoughtful consideration.

As it is frequently used in the field and in education leadership research dating back nearly 70 years, the ideas underlying the term "distributed leadership" have mainly commonsense meanings and connotations that are not disputed. Neither superintendents nor principals can do the whole leadership task by themselves. Successful leaders develop and count on contributions from many others in their organizations. Principals typically count on key teachers for such leadership, along with their local administrative colleagues. In site-based management contexts, parent leaders are often crucial to the school's success. Superintendents rely for leadership on many central-office and school-based people, along with elected board members. Effective school and district leaders make savvy use of external assistance to enhance their influence.

While many in the education field use the term "distributed leadership" reverentially, there is substantial overlap with such other well-developed, longstanding conceptions of leadership as "shared," "collaborative," "democratic" and "participative." Furthermore, when viewed in terms of the definition of leadership suggested here, practical applications of leadership distribution may easily get confounded with the mere distribution of management responsibilities.

Promising efforts have recently begun to extend the concept of distributed leadership beyond its commonsense uses and provide evidence about its nature and effects (e.g., Gronn, 2002; Spillane, in press; Leithwood et al, 2004). These efforts suggest, for example, that it is helpful for some leadership functions to be performed at every level in the organization; for example, stimulating people to think differently about their work. On the other hand, it is important for other functions to be carried out at a particular level. For example, it seems critical that leaders in formal positions of authority retain responsibility for building a shared vision for their organizations. Also, it seems likely that different patterns of leadership distribution throughout districts and schools, for example, might be associated with different levels of effects on students. This is a promising line of research that may prevent distributed leadership from becoming just another "leadership flavor of the month."

Given the state of our understanding about distributed leadership, therefore, policymakers and leadership developers would do well to adopt a more conservative attitude toward the concept until more evidence is developed to move the term beyond the obvious and provide a clearer understanding of its actual impact on schools and students.

It is helpful for some leadership functions to be performed at every level in the organization; for example, stimulating people to think differently about their work.

The basics of successful leadership

In organizational sectors as different as schools and the military, and in national cultures as different as The Netherlands, Canada, Hong Kong and the United States, there is compelling evidence of a common core of practices that any successful leader calls on, as needed. Many of these practices are common to different models of leadership, as well.

These practices can be thought of as the "basics" of successful leadership. Rarely are such practices sufficient for leaders aiming to significantly improve student learning in their schools. But without them, not much would happen.

Three sets of practices make up this basic core of successful leadership practices: setting directions, developing people and redesigning the organization.

1. Setting Directions

Evidence suggests that those leadership practices included in Setting Directions account for the largest proportion of a leader's impact. This set of practices is aimed at helping one's colleagues develop shared understandings about the organization and its activities and goals that can under gird a sense of purpose or vision. People are motivated by goals which they find personally compelling, as well as challenging but achievable. Having such goals helps people make sense of their work and enables them to find a sense of identity for themselves within their work context.

Often cited as helping set directions are such specific leadership practices as identifying and articulating a vision, fostering the acceptance of group goals and creating high performance expectations. Monitoring organizational performance and promoting effective communication throughout the organization also assist in the development of shared organizational purposes.

2. Developing People

Evidence collected in both school and nonschool organizations about the contribution of this set of practices to leaders' effects is substantial. While clear and compelling organizational directions contribute significantly to members' work-related motivations, they are not the only conditions to do so. Nor do such directions contribute to the capacities members often need in order to productively move in those directions. Such capacities and motivations are influenced by the direct experiences organizational members have with those in leadership roles, as well as the organizational context within which people work.

Often cited as helping set directions are such specific leadership practices as identifying and articulating a vision, fostering the acceptance of group goals and creating high performance expectations.

More-specific sets of leadership practices significantly and positively influencing these direct experiences include, for example: offering intellectual stimulation, providing individualized support and providing appropriate models of best practice and beliefs considered fundamental to the organization.

3. Redesigning the Organization

The contribution of schools to student learning most certainly depends on the motivations and capacities of teachers and administrators, acting both individually and collectively. But organizational conditions sometimes blunt or wear down educators' good intentions and actually prevent the use of effective practices. In some contexts, for example, high-stakes testing has encouraged a drill-and-practice form of instruction among teachers who are perfectly capable of developing deep understanding on the part of their students. And extrinsic financial incentives for achieving school performance targets, under some conditions, can erode teachers' intrinsic commitments to the welfare of their students.

Successful educational leaders develop their districts and schools as effective organizations that support and sustain the performance of administrators and teachers, as well as students. Specific practices typically associated with this set of basics include strengthening district and school cultures, modifying organizational structures and building collaborative processes. Such practices assume that the purpose behind the redesign of organizational cultures and structures is to facilitate the work of organizational members and that the malleability of structures should match the changing nature of the school's improvement agenda.

In some contexts, for example, high-stakes testing has encouraged a drill-and-practice form of instruction among teachers who are perfectly capable of developing deep understanding on the part of their students.

Beyond the basics of successful leadership:
Understanding the context

Like experts in most fields, successful leaders have mastered not only "the basics," but also productive responses to the unique demands of the contexts in which they find themselves. In this sense, all successful leadership is "contingent" at its roots. Indeed, impressive evidence suggests that individual leaders actually behave quite differently (and productively) depending on the circumstances they are facing and the people with whom they are working. This calls into question the common belief in habitual leadership "styles" and the search for a single best model or style. We need to be developing leaders with large repertoires of practices and the capacity to chose from that repertoire as needed, not leaders trained in the delivery of one "ideal" set of practices.

We believe this evidence argues for further research aimed less at the development of particular leadership models and more at discovering how such flexibility is exercised by those in various leadership roles.

1. Organizational Context

There is a rich body of evidence about the relevance to leaders of such features of the organizational context as geographic location (urban, suburban, rural), level of schooling (elementary, secondary) and both school and district size. Each of these features has important implications for what it means to offer successful leadership. For example, successful principals in inner-city schools often find it necessary to engage in more direct and top-down forms of leadership than do successful principals in suburban settings. The curricular knowledge of successful elementary principals frequently rivals the curricular knowledge of their teachers; in contrast, secondary principals will typically rely on their department heads for such knowledge. Similarly, small schools allow for quite direct engagement of leaders in modeling desirable forms of instruction and monitoring the practices of teachers, whereas equally successful leaders of large schools typically influence their teachers in more indirect ways; for example, through planned professional development experiences.

This evidence challenges the wisdom of leadership development initiatives that attempt to be all things to all leaders or refuse to acknowledge differences in leadership practices required by differences in organizational context. Being the principal of a large secondary school, for example, really does require quite different capacities than being the principal of a small elementary school.

This evidence challenges the wisdom of leadership development initiatives that attempt to be all things to all leaders or refuse to acknowledge differences in leadership practices required by differences in organizational context.

2. Student Population

There is still much to be learned about how leaders can successfully meet the educational needs of diverse student populations. But there has been a great deal of research concerning both school and classroom conditions that are helpful for students from economically disadvantaged families and those with diverse racial and ethnic backgrounds. Almost all of the early research conducted as part of the "effective schools" movement aimed to identify such conditions. In addition, a very large proportion of educational policy research concerning, for example, class size, forms of instruction, student grouping practices and school size has been conducted using evidence about and from such students. This evidence suggests, for example, that economically disadvantaged primary students will learn more in relatively small schools (250 to 300 students) and classrooms (15 to 20 students) when their teachers engage in active forms of instruction focused on rich, meaningful, curricular content using heterogeneous student-grouping strategies.

At a minimum, then, such evidence suggests that to increase the achievement of diverse student populations, leaders should assist their staffs in implementing the school and classroom conditions warranted by this research – "school leader as policy implementer." This evidence also encourages leaders to engage with other agencies able to provide support for students and their families, but without diverting leaders' attention and influence on teacher learning.

The major shortcoming in much of this research, however, is that it does not identify leadership practices that are successful in improving conditions in the school and classroom suggested by this research, nor does it help unpack the skills. A leader needs to wade through an often complex and not altogether coherent body of research evidence to determine which policies to implement. For example, on student grouping in particular, we ought to know more about how a leader can generate high expectations, foster a faster pace of instruction, encourage sharing of effective learning among peers and adopt a more challenging curriculum.

3. The Policy Context

Policy contexts change substantially over time but tend to be the same for many leaders at the same time. At the moment, large-scale, accountability-oriented policy contexts are pervasive for educational leaders across the country.

States are key actors in the enactment of educational leadership. Currently, the focus on state standards and accountability systems is driving local decisions and policies in ways that are unprecedented. In addition, the funding of local school districts has, in many states, shifted increasingly to the state, while in others it remains a largely local responsibility.

The major shortcoming in much of this research, however, is that it does not identify leadership practices that are successful in improving conditions in the school and classroom.

Whether state or local, changes in state economies also drive many local decisions, as superintendents and principals grapple with day-to-day questions about resource allocation. How these two enduring trends are managed, both at the state and local levels, is also determined by the state's "political culture" – a term that is frequently applied but rarely studied, except in the area of recent welfare reform.

Research about successful school and district leadership practices in contexts such as these is still in its infancy, even though the capacities and motivations of local leaders will significantly determine the effects of such contexts on students. At best, the available evidence allows us to infer some broad goals that successful leadership will need to adopt, acknowledging that additional research will be needed to identify leadership practices that are successful in achieving such goals:

❯ **Creating and sustaining a competitive school:** This is a goal for district and school leaders when they find themselves in competition for students, for example, in education "markets" that include alternatives to public schools such as charter, magnet and private schools, perhaps supported through tuition tax credits.

❯ **Empowering others to make significant decisions:** This is a key goal for leaders when accountability mechanisms include giving a greater voice to community stakeholders, as in the case of parent-controlled school councils; encouraging data-informed decision making should be a part of this goal.

❯ **Providing instructional guidance:** This is an important goal for leaders in almost all districts and schools aiming to improve student learning. But it takes on a special character in the context of more explicit grounds for assessing the work of educators, as, for example, in the setting of professional standards and their use for purposes of ongoing professional development and personnel evaluation.

❯ **Developing and implementing strategic and school-improvement plans:** When schools are required to have school-improvement plans, as in most school districts now, school leaders need to master skills associated with productive planning and the implementation of such plans. Virtually all district leaders need to be proficient in large-scale strategic-planning processes.

Empowering others to make significant decisions is a key goal for leaders when accountability mechanisms include giving a greater voice to community stakeholders.

How successful leadership influences student learning

Our review of the evidence leads to three conclusions about how successful leadership influences student achievement:

1. Mostly leaders contribute to student learning indirectly, through their influence on other people or features of their organizations.

This should be self evident by simply reminding ourselves about how leaders of all but the smallest districts and schools spend the bulk of their time and with whom they spend it – whether successful or not. But a considerable amount of research concerning leadership effects on students has tried to measure direct effects; rarely does this form of research find any effects at all.

It is only when research designs start with a more sophisticated view of the chain of "variables" linking leadership practices to student learning that the effects of leaders become evident. These linkages typically get longer the larger the organization. And, on the whole, these chains of variables are much longer for district leaders than for school leaders. Leaders' contributions to student learning, then, depend a great deal on their judicious choice of what parts of their organization to spend time and attention on. Some choices (illustrated below) will pay off much more than others.

2. The evidence provides very good clues about who or what educational leaders should pay the most attention to within their organizations.

Teachers are key, of course, and impressive evidence suggests that their "pedagogical content knowledge" (knowledge about how to teach particular subject matter content) is central to their effectiveness. So, too, is the professional community teachers often form with colleagues inside and outside their own schools. At the classroom level, substantial evidence suggests that student learning varies as a consequence of, for example, class size, student-grouping practices, the instructional practices of teachers, and the nature and extent of monitoring of student progress.

At the school level, evidence is quite strong in identifying, for example, school mission and goals, culture, teachers' participation in decision making, and relationships with parents and the wider community as potentially powerful determinants of student learning. District conditions that are known to influence student learning include, for example, district culture, the provision of professional development opportunities for teachers aligned with school and district priorities and policies governing the leadership succession. Districts also contribute to student learning by ensuring alignment among goals, programs, policies and professional development.

At the classroom level, substantial evidence suggests that student learning varies as a consequence of, for example, class size, student-grouping practices, the instructional practices of teachers, and the nature and extent of monitoring of student progress.

At a minimum, then, this extensive body of research provides direction for leaders' attention and time. It should also serve as the basis for the further development of leaders. Leaders need to know which features of their organizations should be a priority for their attention. They also need to know what the ideal condition of each of these features is, in order to positively influence the learning of students.

3. We need to know much more about what leaders do to further develop those high-priority parts of their organizations.

No doubt, many of the basic and context-specific leadership practices alluded to above will be part of what leaders need to do. But evidence about the nature and influence of those practices is not yet sufficiently fine-grained to know how a carefully selected feature of a district or school could be systematically improved through planned intervention on the part of someone in a leadership role.

Conclusion

There seems little doubt that both district and school leadership provides a critical bridge between most educational-reform initiatives, and having those reforms make a genuine difference for all students. Such leadership comes from many sources, not just superintendents and principals. But those in formal positions of authority in school systems are likely still the most influential. Efforts to improve their recruitment, training, evaluation and ongoing development should be considered highly cost-effective approaches to successful school improvement.

These efforts will be increasingly productive as research provides us with more robust understandings of how successful leaders make sense of and productively respond to both external policy initiatives and local needs and priorities. Such efforts will also benefit considerably from more fine-grained understandings than we currently have of successful leadership practices; and much richer appreciations of how those practices seep into the fabric of the education system, improving its overall quality and substantially adding value to our students' learning.

There seems little doubt that both district and school leadership provides a critical bridge between most educational-reform initiatives, and having those reforms make a genuine difference for all students.

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Notes

i   Mintrop (2004) describes large-scale
    reform in two U.S. states.

ii England provides the most ambitious
    example of country-wide large scale
    reform at present (see Earl, et al 2003)

iii Herman (1999) provides a description
    and summary of evidence about these
    initiatives.

iv (Hallinger & Heck, 1996; Leithwood,
    Jantzi, 2000)

v   (e.g., Hallinger, 2000)

vi (Duke, 1987)

vii (Andrews and Soder, 1987)

Review of research **How leadership influences student learning**

How leadership influences student learning
A review of research

Leadership is widely regarded as a key factor in accounting for differences in the success with which schools foster the learning of their students. Indeed, the contribution of effective leadership is largest when it is needed most; there are virtually no documented instances of troubled schools being turned around in the absence of intervention by talented leaders. While other factors within the school also contribute to such turnarounds, leadership is the catalyst.

But there is much yet to be learned about who provides such leadership, how it is productively distributed across the school system (e.g., state, district, school and classroom) and what stimulates its development. We also have much to learn about which forms of leadership are most likely to foster student learning and how such successful forms of leadership, often exercised at a distance from students, eventually make a contribution to their learning. It was the importance of knowing more about these aspects of educational leadership that prompted the Wallace Foundation's call for, and support of, our study entitled *Learning from District Efforts to Strengthen Education Leadership*.

There is much yet to be learned about who provides educational leadership, how it is productively distributed across the school system (e.g., state, district, school and classroom) and what stimulates its development.

Although we have much to learn about education leadership and how it contributes to student learning, there is considerable existing evidence on which to build. It would be foolish in the extreme for us not to "stand on the shoulders" of such evidence in undertaking our own research. So we began our study with a wide-ranging review of literature, the results of which are summarized in this paper.

This review is organized around a framework which has emerged from empirical research in sociology and in organizational and industrial psychology (Rowan, 1996). The framework assumes that variation in workplace performance (e.g., the effectiveness of teachers in their classrooms) is a function of the capacities (e.g., instructional skills), motivations and commitments of workplace personnel, the characteristics of the settings in which they work (e.g., schools, districts) and the external environment (shifting state policies and other demands). According to this framework, leaders play critical roles in identifying and supporting learning, structuring the social settings and mediating the external demands. Variations of this framework have been used in education contexts to understand better how schools and districts respond to state accountability policies and to explain variations in the success with which schools implement and incorporate new policies and practices.

A significantly expanded version of this framework, summarized in Figure 1, serves as the organizer for this review of literature. According to Figure 1, features of both state (var. 1) and district (var. 2) leadership, policies, practices and other characteristics interact with one another and exert a direct influence on what school leaders do (var. 4); they also exert influence on school

(var. 6) and classroom (var. 8) conditions, as well as on teachers' professional community (var. 7). Other stakeholder groups (var. 5), such as the media, unions, professional associations and community and business groups, also have influence on school leadership practices, as do leaders' professional learning experiences (var. 9).

Student and family background factors (var. 3) have a significant bearing on most other variables and relationships in this framework. For example, they sometimes influence how school leaders do their work; the nature of classroom teaching and learning processes (through their effects on teachers'

According to this framework, leaders play critical roles in identifying and supporting learning, structuring the social settings and mediating the external demands.

1 State leadership, policies, and practices
e.g.
standards
testing
funding

2 District leadership, policies, and practices
e.g.
standards
curriculum alignment
use of data

3 Student/ family background
e.g.
family educational culture

4 School leadership

5 Other stakeholder
e.g.
unions
community groups
business
media

6 School conditions
e.g.
culture/ community
school improvement planning

7 Teachers
e.g.
individuals' capacity
professional community

8 Classroom conditions
e.g.
content of instruction
nature of instruction
student assessment

9 Leaders' professional learning experiences
e.g.
socialization
mentoring
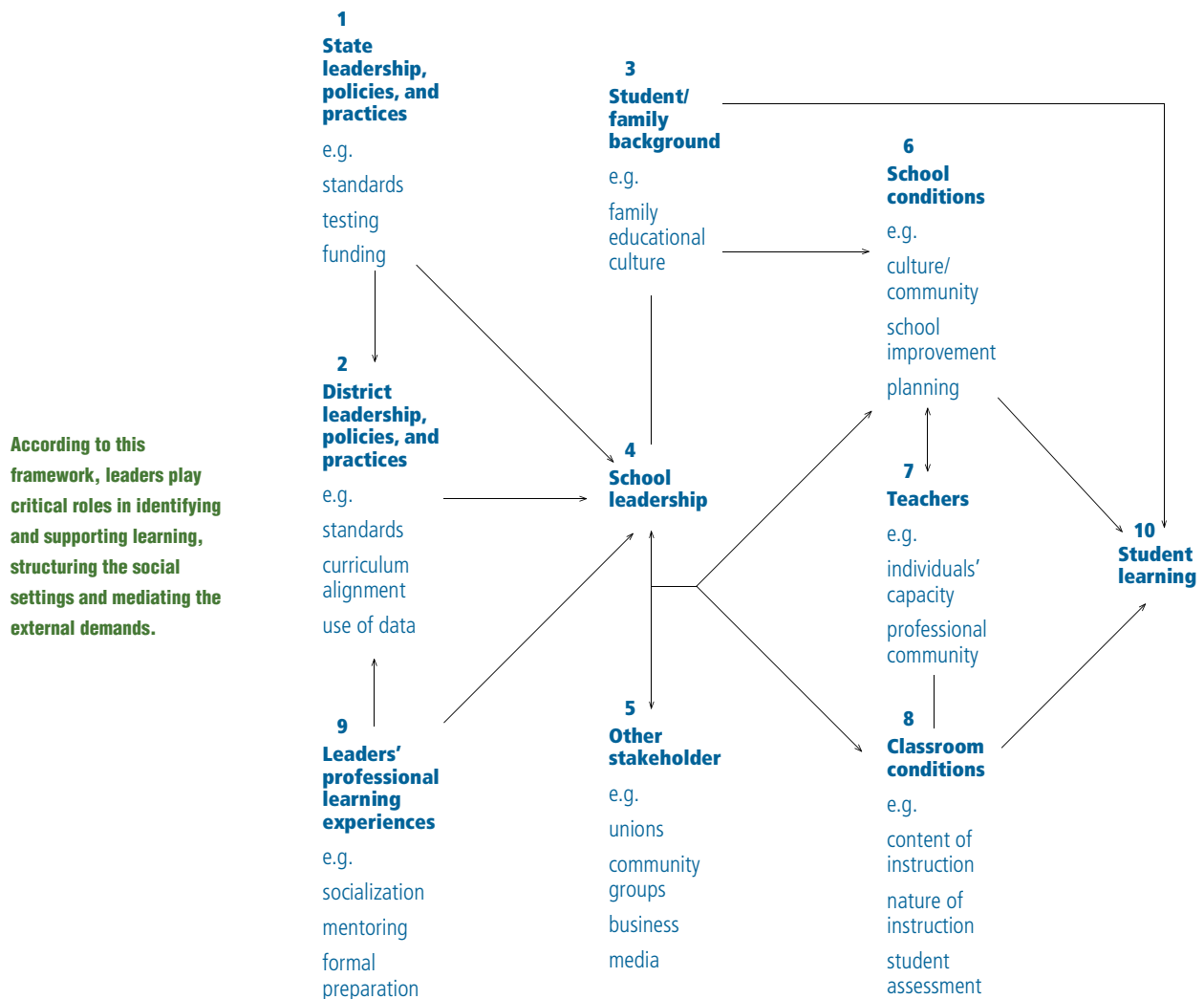formal preparation

10 Student learning

Figure 1:
Linking Leadership to Learning: The research framework features 10 interdependent variables. This figure cannot show the many complex relationships that actually exist among the 10 variables. The relationships depicted in the figure are illustrative only.

expectations); the financial resources available to districts and schools; and the nature of the "social capital" available to students.

School leadership (var. 4) from both formal and informal sources helps to shape the nature of school conditions (var. 6) such as goals, culture, structure and classroom conditions (var. 8) – the content of instruction, the size of classrooms, the forms of pedagogy used by teachers, etc. A wide array of factors, including those in the school and classroom, help shape teachers' sense of professional community (var. 7). School and classroom conditions, teachers' professional community and student/family background conditions are directly responsible for the learning of students (var. 10).

Our review of the research, guided by this framework, begins with leadership, since it appears both separately and as part of other components of the framework. Furthermore, our review focuses on the direct and indirect relationship between the variables in Figure 1 and student learning, without elaborating the meaning of student learning. Our study will use whatever measures of student learning are available from districts and schools, including state-collected data. We will also use proxy variables such as student attendance and retention rates.

Successful school and district leadership

Our framework nests district leadership within a larger set of district characteristics, conditions and practices (var. 2) while identifying school leadership as a separate set of variables (var. 4). At the district level, special attention is devoted to superintendent leadership and at the school level, to the leadership of the principal.

At both district and school levels, however, we assume leadership is also distributed among others in formal as well as informal leadership roles. The remainder of this section:

- Briefly defines our concept of leadership;

- reviews evidence about leadership effects on student learning;

- summarizes research about successful leadership practices that are common across leadership roles and organizational contexts;

- illustrates some of the practices demanded of successful superintendents and principals by the unique contexts in which they work;

- clarifies what we know about distributed leadership.

The concept of leadership

At the core of most definitions of leadership are two functions: "providing direction" and "exercising influence." Each of these functions can be carried out in different ways, and such differences distinguish many models of leadership from one another. As Yukl notes, leadership influences "…the interpretation of events for followers, the choice of objectives for the group or organization, the organization of work activities to accomplish objectives, the motivation of followers to achieve the objectives, the maintenance of cooperative relationships and teamwork and the enlistment of support and cooperation from people outside the group or organization" (1994, p. 3).

Some will argue that such a definition seems overly bureaucratic or hierarchical, although it need not be interpreted as such. Nor is it a very precise way of defining leadership and may be vulnerable to the occasional charge that such lack of precision severely hampers efforts to better understand the nature and effects of leadership. But leadership is a highly complex concept. Like health, law, beauty, excellence and countless other complex concepts, efforts to define leadership too narrowly are more likely to trivialize than clarify its meaning.

Evidence about leadership effects on students

Most of what we know empirically about leaders' effects on student learning concerns school leaders. District leadership effects on students have, until recently, been considered too indirect and complex to sort out. Below we

review both past and recent studies of district-level policies and strategies associated with high performing and improving districts in terms of district-wide student performance on state tests (e.g., Murphy and Hallinger, 1988; LaRocque and Coleman, 1990; Cawelti and Protheroe, 2001; Togneri and Anderson, 2003). While providing insight into specific policies and actions at the district level, these studies have not typically been approached from the perspective of leadership theory. The results resemble lists of the characteristics of effective schools, only at the district level. They rarely specify how these characteristics and actions interact, and how they shape, enable and sustain high performance of teachers and students. Inquiry about leadership sources, interactions and effects linked to district policies and improvement strategies will be a major contribution of our study.

Claims about the effects of school leadership on student learning are justified by three different kinds of research. One source of evidence is the qualitative case study which is typically conducted in exceptional school settings (e.g., Gezi, 1990). These are settings believed to be contributing to student learning significantly above or below expectations. Such research, based on "outlier" designs, usually produces large leadership effects not only on student learning but on an array of school conditions as well (e.g., Mortimore, 1993; Scheurich, 1998). What is missing from these cases, however, is external validity, or generalizability. The qualitative portion of our research will address this limitation by (a) developing a relatively large number of cases of successful leadership, (b) reporting the results of systematic cross-case analyses and (c) carrying out quantitative tests of the results provided by the qualitative evidence.

While leadership explains only three to five percent of the variation in student learning across schools, this is actually about one quarter of the total variation (10 to 20 percent) explained by all school-level variables.

A second source of research evidence about leadership effects is large-scale quantitative studies. Evidence of this type reported between 1980 and 1998 (approximately four dozen studies across all types of schools) has been reviewed in several papers by Hallinger and Heck (1996a, 1996b, 1998). These reviews conclude that the combined direct and indirect effects of school leadership on pupil outcomes are small but educationally significant. While leadership explains only three to five percent of the variation in student learning across schools, this is actually about one quarter of the total variation (10 to 20 percent) explained by all school-level variables (Creemers and Reezigt, 1996) after controlling for student intake factors. To put the magnitude of this leadership effect in perspective, quantitative school effectiveness studies (Hill, 1998) indicate that classroom factors explain only a slightly larger proportion of the variation in student achievement – about a third.

The third type of research about leadership's effects, is, like the second type, also large-scale and quantitative in nature. But instead of examining overall leadership effects, these studies inquire about the effects of specific leadership

practices. Evidence of this sort can be found sporadically in the research alluded to above, but a recent meta-analysis by Waters, Marzano and McNulty (2003) has significantly extended this type of research. Their study identifies 21 leadership "responsibilities" and calculates an average correlation between each responsibility and whatever measures of student achievement were used in the original studies. From these data, the researchers calculated a 10 percent increase in student test scores of an average principal who improved her "demonstrated abilities in all 21 responsibilities by one standard deviation" (p. 3).

While the analysis by Waters, Marzano and McNulty produced interesting data, extrapolations from their estimates to principal effects on student learning in real-world conditions must be made with considerable caution. First of all, the data are correlational in nature, but cause and effect assumptions are required to understand the effects of leadership improvement on student learning. Second, the estimated effects on student achievement described in the study depend on a leader's improving their capacities across all 21 practices at the same time. This is an extremely unlikely occurrence. Some of these practices are dispositional in nature (e.g., flexibility), or rooted in deeply held beliefs unlikely to change much, if at all, within adult populations (e.g., ideals). And just one of the 21 practices, increasing "the extent to which the principal is knowledgeable about current curriculum, instruction and assessment practices" is a major professional development challenge by itself. Nonetheless, this line of research is a useful addition to other lines of evidence which justify a strong belief in the contributions of successful leadership to student learning.

The first two sources of evidence of leadership effects, reviewed above, suggest effects of very different magnitudes; small but significant in the first case and large by any standard in the second. How can such differences be explained? Most qualitative case studies, by design, examine the effects of exceptional leadership in schools most in need of it. In contrast, large-scale quantitative studies, by design, report "average" leadership effects (that is, the effects of exceptionally talented to quite unsuccessful leadership) across schools which range from being very needy to already highly productive. So, while large-scale quantitative studies might seem to policymakers to be more reliable sources of evidence about leadership effects, such studies systematically underestimate leadership effects in schools where it is likely to be of greatest value.

Research about the forms and effects of leadership is becoming increasingly sensitive to the contexts in which leaders work and how, in order to be successful, leaders need to respond flexibly to their contexts. Such evidence argues for research aimed less at the development of particular leadership models and more at discovering how such flexibility is exercised by those in various leadership roles. Research is also urgently needed which unpacks,

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more specifically, how successful leaders create the conditions in their schools which promote student learning (Hallinger and Heck, 1996b). School-level factors other than leadership that explain variation in student achievement include school mission and goals, culture, participation in decision making and relationships with parents and the wider community. These are variables over which school leaders have considerable potential influence and we need to know more about how successful leaders exercise this influence. This is one of the main objectives of our research.

The basics of successful leadership

Much of the success of district and school leaders in building high-performance organizations (organizations which make significantly greater-than-expected contributions to student learning) depends on how well these leaders interact with the larger social and organizational context in which they find themselves. Nevertheless, evidence from district, school and non-education organizations points to three broad categories of successful leadership practices which are largely independent of such context. Such practices are "the basics" of good leadership and are necessary but not sufficient in almost all situations.

Hallinger and Heck (1999) label these categories of leader practices "purposes," "people" and "structures and social systems." Conger and Kanungo (1998) refer to "visioning strategies," "efficacy-building strategies" and "context changing strategies." Leithwood's (1996) categories are "setting directions," developing people" and "redesigning the organization." Within each of these similar categories of practice are numerous, more specific competencies, orientations and considerations; for example, most of the 21 specific leadership practices linked to student learning in Waters, Marzano and McNulty's (2003) review fit within these categories.

These categories of leadership practices closely reflect a transformational approach to leadership which Bass (1997) claims has proven to be useful in many different cultural and organizational contexts. This transformational approach has proven useful for educational organizations (as demonstrated in studies by Geijsel, Sleegers, Leithwood and Jantzi, 2003; Yu, Leithwood and Jantzi, 2002; Southworth, 1998; and Mullin and Keedy, 1998) and, specifically, for the success of some large-scale reform efforts in schools (such as Day et al., 2000).

Setting directions

A critical aspect of leadership is helping a group to develop shared understandings about the organization and its activities and goals that can undergird a sense of purpose or vision (Hallinger and Heck, 2002). The most fundamental theoretical explanations for the importance of leaders' direction-

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setting practices are goal-based theories of human motivation (e.g., Bandura, 1986; Ford, 1992; Locke, Latham and Eraz, 1988). According to such theory, people are motivated by goals which they find personally compelling, as well as challenging but achievable. Having such goals helps people make sense of their work and enables them to find a sense of identity for themselves within their work context.

Often cited as helping set directions are such specific practices as identifying and articulating a vision, fostering the acceptance of group goals and creating high performance expectations. Visioning and establishing purpose are also enhanced by monitoring organizational performance and promoting effective communication and collaboration.

Developing people

While clear and compelling organizational directions contribute significantly to members' work-related motivations, they are not the only conditions to do so. Nor do such directions contribute to the capacities members often need in order to productively move in those directions. Such capacities and motivations are influenced by the direct experiences organizational members have with those in leadership roles (Lord and Maher, 1993), as well as the organizational context within which people work (Rowan, 1996).

The ability to engage in practices that help develop people depends, in part, on leaders' knowledge of the "technical core" of schooling – what is required to improve the quality of teaching and learning – often invoked by the term "instructional leadership." But this ability also is part of what is now being referred to as leaders' emotional intelligence (Goleman, Boyatzis and McKee, 2002). Recent evidence suggests that emotional intelligence displayed, for example, through a leader's personal attention to an employee and through the utilization of the employee's capacities, increases the employee's enthusiasm and optimism, reduces frustration, transmits a sense of mission and indirectly increases performance (McColl-Kennedy and Anderson, 2002).

More specific leadership practices that significantly and positively help develop people include offering intellectual stimulation, providing individualized support and providing an appropriate model.

Redesigning the organization

Successful educational leaders develop their districts and schools as effective organizations that support and sustain the performance of administrators and teachers as well as students. This category of leadership practices has emerged from recent evidence about the nature of learning organizations and professional learning communities and their contribution to staff work and student learning. Such practices assume that the purpose behind organizational cultures and structures is to facilitate the work of organizational

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members and that the malleability of structures should match the changing nature of the school's improvement agenda. Practices typically associated with this category include strengthening district and school cultures, modifying organizational structures and building collaborative processes.

Successful superintendent leadership

While there is a reasonable amount of evidence to support the value of superintendents exercising the basic leadership capacities described above, we know much less about what else successful superintendents do. Hart and Ogawa (1987) statistically estimated the influence of superintendents on the mathematics and reading achievement of students in grades six and 12 in 70 California school districts, while controlling for environmental and organizational variables. They concluded that superintendents do have an influence on student performance, but acknowledged that their investigation was not designed to identify the processes by which that influence is exercised.

Murphy and Hallinger (1986) interviewed superintendents from 12 California school districts identified as instructionally effective in order to ascertain district-level policies and practices employed by superintendents in carrying out their instructional leadership functions with principals. Their investigation revealed a core set of leadership functions reported by many of the superintendents, including: setting goals and establishing standards; selecting staff; supervising and evaluating staff; establishing an instructional and curricular focus; ensuring consistency in curriculum and instruction; and monitoring curriculum and instruction. Murphy and Hallinger note, however, that there was substantial variation among their small sample of superintendents in how these functions were enacted, and they caution about the absence of corroborating data from their interviews. We have found little further research that builds upon and extends these early studies in the evolving context of state education policies and standards-based reform. Filling this hole in our knowledge base will be an important contribution of our study.

> **District leaders need to capture the attention of teachers and students in a variety of ways.**

At the present time, a small number of studies describes how superintendents and their staffs work with state policies and regulations to ensure authentic reflection of such reform efforts while, at the same time, doing justice to local district and school priorities. For example, based on evidence from a successful Illinois district, Leithwood and Prestine (2002) identified three sets of leadership practices which seem to be successful responses to this challenge.

Capturing the attention of school personnel: Students and teachers are not often initially attentive to initiatives from the district or state nor are they much aware of the changes such initiatives imply for their own practices. So district leaders need to capture the attention of teachers and students in a variety of ways. When the changes are driven, as is often the case at this time, by new standards,

one of the most successful initiatives that district leaders can take is to use formative and summative student assessments aligned to the new standards. This strategy typically engages the attention of parents and principals.

■ **Capacity building:** While assessments capture people's attention, productive change requires a powerful response to the dilemmas and conflicts they create. For district leaders, an effective response is to develop a strong, in-house, sytematically aligned, professional development program.

■ **Pushing the implications of state policies into schools and classrooms:** Depending on the specific nature of state policy, this may entail, for example, fostering widespread participation of school and district staffs in efforts to implement the changes.

The five superintendents in Togneri and Anderson's (2003) study were both "data savvy" and "data users": they understood performance data on students and schools and they could address the shortcomings of state data by, for example, collecting longitudinal data when the state only provided snapshots of student performance. These superintendents supported and even insisted that school leaders use student performance and stakeholder satisfaction data to identify needs, set goals and plan and track improvements. They also worked with their school boards to increase their comfort and effectiveness in using data for policy development and governance. Our proposed research will provide a much more comprehensive account of the leadership practices of successful superintendents and other district leaders.

Successful principal leadership

Like every district, every school is in some fashion unique. Responding well to such uniqueness, in addition to providing the leadership basics, is crucial for the success of school leaders. But large numbers of schools share two challenges that demand responses by all or many educational leaders if they are to be successful in improving teaching and learning. One common impetus to change faced by almost all educational leaders in the United States is the extensive set of state policies designed to hold schools more accountable (Leithwood, 2001). The second challenge, faced by fewer, but still large numbers of leaders, is the conditions associated with diverse student populations (Riehl, in press).

To be successful in highly accountable policy contexts, school leaders need to:

■ **Create and sustain a competitive school.** This set of practices is important for district and school leaders when they find themselves in competition for students in education "markets" which feature alternatives to existing public schools such as charter, magnet and private schools perhaps supported through tuition tax credits.

While assessments capture people's attention, productive change requires a powerful response to the dilemmas and conflicts they create.

■ **Empower others to make significant decisions.** This is a key set of leadership practices, particularly when accountability mechanisms include giving a greater voice to community stakeholders as in the case of parent-controlled school councils.

■ **Provide instructional guidance.** While this is an important set of leadership practices in almost all districts and schools aiming to improve student learning, it takes on a special character in the context of more explicit grounds for assessing the work of educators, as for example, the setting of professional standards and their use for purposes of ongoing professional development and personnel evaluation.

■ **Develop and implement strategic school improvement plans.** When schools are required to have school improvement plans, as most districts now demand, school leaders need to master skills associated with productive planning and the implementation of such plans. Virtually all district leaders need to be proficient in large-scale strategic planning processes.

Successful leadership in diverse cultural and socioeconomic contexts calls for the integrated use of two distinct approaches to leadership. The first approach includes implementing policies and initiatives which, according to the best evidence available, serve well those populations of children about which we have been concerned. Such practices might include providing parent education programs, reducing class sizes and building rich curricula delivered through sustained discourse structured around powerful ideas.

The second approach to leadership aims to ensure, at minimum, that those policies and other initiatives which were identified are implemented equitably. This usually means building on the forms of social capital that students do possess rather than being restricted by the social capital they do not possess. Such an approach to leadership is referred to variously as emancipatory leadership (e.g., Corson, 1996), leadership for social justice (e.g., Larson and Murtadha, 2002) and critical leadership (e.g., Foster, 1989). Examples of strategies associated with this approach, beyond those described to this point, include: heightening the awareness of school community members to unjust situations which they may encounter and how such situations affect students' lives; providing members of the school community the capacities needed to avoid situations that generate inequities; and providing opportunities to become involved in political action aimed at reducing inequities (Ryan, 1998).

Distributed leadership in districts and schools

Neither superintendents nor principals can carry out the leadership role by themselves. Highly successful leaders develop and count on leadership contributions from many others in their organizations. Principals typically count on key teachers for such leadership, along with their local administrative colleagues (Hord, Steigelbauer and Hall, 1984). In site-based management

contexts, parent leaders are often crucial to the school's success (Parker and Leithwood, 2000). Superintendents rely on the leadership of many central office and school-based people, along with elected board members.

The nature and impact of distributed leadership has become the object of recent research, although inquiry about the concept dates back almost 70 years (Gronn, 2002). At its root, the concept of distributed leadership is quite simple: initiatives or practices used to influence members of the organization are exercised by more than a single person. Distributed leadership does not reside solely in people, however. Non-person sources of influence may include Jermier and Kerr's (1997) "substitutes for leadership", which arise out of a view of leadership as an organization-wide phenomenon (Pounder, Ogawa and Adams, 1995). Leadership influence is exercised through actions or tasks that are enacted to accomplish functions for the organization (Spillane et al, 2000).

The concept of distributed leadership overlaps substantially with shared, collaborative, democratic and participative leadership concepts. Distributed leadership assumes a set of practices that "are enacted by people at all levels rather than a set of personal characteristics and attributes located in people at the top" (Fletcher and Kaufer, 2003, p. 22).

Gronn (2002, p. 679) distinguishes two basic forms of distributed leadership, additive and holistic. Additive forms entail the dispersal of leadership tasks among members across an organization without explicit consideration of interactions by those members; this is the most common meaning of the term and is the form which those advocating that "everyone is a leader" (e.g., Manz and Sims, 1980) have in mind. Holistic forms of distributed leadership include attention to the interdependence of those providing leadership. These holistic forms assume that the totality of leaders' work adds up to more than the sum of the parts and that there are high levels of interdependence among those providing leadership. Holistic forms of distributed leadership produce leadership activities which emerge from dynamic, multidirectional, social processes which, at their best, lead to learning for the individuals involved, as well as for their organizations. The extent and nature of coordination in the exercise of influence across members of the organization is a critical challenge from a holistic perspective. Interdependence between two or more organizational members may be based on role overlap or complementarity of skills and knowledge (Gronn, 2002).

A number of individual and organizational benefits have been associated with distributed leadership. As compared with exclusively hierarchical forms of leadership, distributed leadership more accurately reflects the division of labor which is experienced in the organization on a daily basis and reduces the chances of error arising from decisions based on the limited information available to a single leader. Distributed leadership also increases opportunities

for the organization to benefit from the capacities of more of its members, permits members to capitalize on the range of their individual strengths and develops, among organizational members, a fuller appreciation of interdependence and how one's behavior affects the organization as a whole. Elmore (2000) characterizes this as comparative advantage, where individuals and groups in different positions within an organization contribute to leadership functions in areas of organizational activity over which they have the greatest influence. Resnick and Glennan (2002) emphasize the importance of mutual or two-way accountability between leaders and participants in different roles and levels of an organization (e.g., principals are accountable to superintendents for performance, but superintendents are also accountable to inputs and needs of principals).

Especially in the context of teamwork, some argue, distributed leadership provides greater opportunities for members to learn from one another. Through increased participation in decision making, greater commitment to organizational goals and strategies may develop. Distributed leadership has the potential to increase on-the-job leadership development experiences, and the increased self-determination arising from distributed leadership may improve members' experience of work. Such leadership allows members to better anticipate and respond to the demands of the organization's environment. With holistic forms of distributed leadership (Gronn, 2002), solutions are possible which would be unlikely to emerge from individual sources. Finally, overlapping actions that occur in distributed leadership contexts provide further reinforcement of leadership influence.

The state

Evolution of state approaches to school reform

States are key actors in the enactment of educational leadership. The role of states in determining local educational policies and practices has been controversial for at least the past 150 years, and each state has a long legacy of contested terrain on the question of local versus state control (Louis, in press; Tyack and James, 1986). But currently, the focus on state standards and accountability systems is driving local decisions and policies in ways that are unprecedented. In addition, the funding of local school districts has, in many states, shifted increasingly to the state, while in others it remains a largely local responsibility. Whether funding is state or local, changes in state economies also drive many local decisions, as superintendents and principals grapple with day-to-day dilemmas over resource allocation. How these two enduring trends are managed, both at the state and local levels, is also determined by the state's "political culture" – a term that is frequently applied, but rarely studied and explicated, except in the area of recent welfare reform (Brace and Jewett, 1995; Fitzpatrick and Hero, 1988).

Changes in the state role were stimulated by the 1983 federal commission report, *A Nation at Risk*, whose basic message has had a profound impact on the way we think about education. The commission's recommendations were quickly picked up by the media (Bracy, 2003), by advocates of outcome-based education (Rubin and Spady, 1984) and by educational reformers who saw its call for more rigorous curricular content and attention to what students know as consistent with their own efforts (Romberg, 1993; Wiggins, 1991). In addition, civil rights advocates argued that clearer standards were a possible solution to the problem of low quality of education for minority students (Abrams, 1985), and that standards could be used to demand opportunity to learn (Porter, 1993). Other scholars accepted the call for higher levels of professional practice and teacher accountability, as well as internal regulation by the teaching profession itself (Darling-Hammond, 1989), although they argued against the negative assessment of the national report and against coercive assessment (Porter, 1989).

The initial premise of the standards reform movement was quickly translated in some states to a more systemic approach that covered teacher preparation, teacher evaluation, school assessment and student assessment. A second development, emerging in the early 1990s, focused on the "high stakes" elements of educational policy, or the use of sanctions and rewards associated with how well the school/teacher/student performed. The public and many educators agreed that accountability based on results was a good idea (Hannaway, 2003).

The emergence of high-stakes assessments and accountability has been more controversial in the scholarly community. Aside from the measurement debates (Baker, 2002; Linn, 2000), discussion has focused on the way in

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which the accountability movement will affect students, teachers and schools. Many argue that poor students, immigrants, or students with disabilities will suffer under high-stakes testing environments (McNeil, 2000; Meier, 2002; Reyes and Rorrer, 2001; Stecher and Hamilton, 2002). Although knowledge about how local educators are reacting to the new standards legislation is limited (Ingram, Louis, and Schroeder, in press; Kelley, Kimball, and Conley, 2000; Winkler, 2002), scholars argue that the legislation will reduce professionalism and promote rigid and limited "teaching to the test" (Hilliard, 2000; Miller, 2002; Schrag, 1995; Stake, 1999). While policy researchers generally see a complex picture of the effects of state accountability systems, they still caution that there are many potential negative consequences (Firestone and Shipps, 2003; Levy and Murnane, 2001; O'Day, 2002). Yet empirical evidence on all of these topics is limited—and hotly debated (Skrla and Scheurich, 2004).

Policy and culture context

As we noted above, educational reform initiatives in the U.S. now center on using achievement tests to hold teachers, districts and students accountable for their performance and as the impetus for improving performance. Any analysis of the impact of state policy on the quality and effectiveness of educational leaders must acknowledge the primacy of these initiatives. Interestingly, growth in state policy in the 1980s and early 1990s did not result in a uniform reduction in district authority and policy. In a multi-state multi-district study of district responses to increasing state-mandated reforms, Fuhrman, Clune and Elmore (1988) found that more proactive districts leveraged the new state policies to their advantage as they promoted district-level agendas for change, with a net increase rather than a reduction in district reform policies, often exceeding expectations established by the states (Firestone, 1989; Fuhrman and Elmore, 1990). The power for setting educational reform agendas has shifted, beginning in the early 1980s, from the local to the state and federal levels and is still unfolding with the No Child Left Behind Act. However, there are substantial differences among states, as they still have their own discretion in choosing standards, benchmarks, assessments, implementation strategies and actors that play different roles in policy. It is therefore important to study "political cultures…[that] can roughly distinguish which state policy mechanisms and program approaches are selected" (Marshall et al. 1989, p.159). These political cultures affect how different states define key policies for school improvement, and they partially determine the options that are available at the district and local level.

Our framework for analyzing K-12 policymaking is based on a systems perspective that focuses on the relationships of actors in the system throughout the policy process. This involves analyzing how goals, perceptions, motivations and strategies are structured by institutional arrangements. There

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is substantial evidence that the agenda-setting process, which occurs before large-scale policy reforms are legislated and continues after they begin, is as complex as the problem of changing public services. Because it is not only complex but largely hidden from public view and only modestly predictable (by individual actors), it is part of the "wickedness" of public sector problems (Basu, Dirsmith, and Gupta, 1999). Research on state policymaking focuses on the interaction of educational stakeholders within the context of the larger system of accountability reforms. Those stakeholders are primary initiators, and the context includes loci of accommodation, visibility and the scope of conflict (Mazzoni, 1992).

Primary initiators, also known as the agenda setters, engage the system with their issues. Kingdon (1992) identifies arenas in which actors (and their knowledge) may operate: a "problem stream" in which issues are identified and given priority; a "solution stream," in which various competing policies are discussed; and a "political stream" that consists of potential key participants (Easton's "elites"). As March and Olsen (1976) note, these streams operate quasi-independently, which means that the combination of issues, solutions and active participants is often difficult to predict. It is the quasi-organized, fluid nature of the agenda-setting process, which often cannot even be described to an outsider, which accounts for the fate of "good knowledge" in affecting decisions. These initiators are generally politicians, especially chairs of education committees, but can also be education interest groups, governors and policy entrepreneurs. The loci of accommodation are where the initiators propose, debate and study the details of proposed educational legislation. Visibility is the coverage of the issue that is provided to the public about who the primary initiators are and how they are engaging in the issue in the loci of accommodation. The scope of conflict involves the diversity and motives of actors involved with the policy issue and the amount of national influence affecting the issue (Mazzoni, 1992).

Given the sensitivity of educational reform initiatives to the political climate and presidential administration, it is not surprising that so few accountability reforms, all with conflicting assessment and accountability agendas, have achieved their stated goals (McDonnell, 1994; Atkinson, 1998). Many reforms and interventions are approached with an incrementalist strategy, which targets specific problems with the assumption that when many such issues are resolved, the entire system will improve. The opposite of the incrementalist strategy is a restructuring strategy. Restructuring does not assume that the fundamentals of the K-12 public education system are a "given;" rather it seeks not just to supplement and strengthen, but also to replace existing organizational arrangements (Mazzoni, Schultz, and Freeman, 1996).

It is not only the assumptions undergirding a policy that determine what form it will take when implemented at the school level. Examining the cultural paradigm, or system of values in which schools function allows for interpreting the meanings, views and patterns of behavior of policy actors at all levels as the primary force in the policy system (Marshall, Mitchell and Wirt, 1989). Without comprehending the cultural paradigms in schools, districts and states, accountability reforms will be unsuccessful and inconsistent in improving academic performance because they were mandated without consideration for the school's context (Sizer, 1992).

Whether discussing a policy's form or its sensitivity to local school culture, there is generally a gulf between how policy elites understand educational reform and how practitioners understand it (Spillane, 2002). Just as teachers and administrators make assumptions about a policy when deciding how to interpret it in their local context, policymakers also have "assumptive worlds" that determine the different policy mechanisms and approaches that they will choose for educational reforms.

A function of policymakers' assumptive worlds, which differ by state, is the amount of power that different actors have over policy. Some of those policy actors, all of whom wield different amount of power in different education policymaking arenas, include: legislators; legislative staffers; state departments of education; professional associations of teachers, administrators and state boards of education; education PACs; the governor; the governor's staffers; the state board of education; courts; federal statutes; non-education groups; parents; teachers; students; and producers of education-related products (Marshall, Mitchell and Wirt, 1989).

The presence of strong educational subcultures at the state level help to explain how attention is focused more on certain policy domains than others. It is not just the state-level cultures that can entirely explain states' policies, however, since educational polices are a function of both state and national cultures (Marshall, Mitchell and Wirt, 1989).

A sense-making approach to studying state policy and its impacts

As part of our systems perspective on state-district relationships, we include a sense-making approach to understanding how district and school leaders, as contrasted with scholars, make sense of the new standards and accountability environment in which they work. Individual-level sense-making is the process by which individuals decipher new information, in this case, how teachers interpret an externally mandated policy that aims to improve their students' achievement. Organizational scholars regard sense-making as a social process as well as an individual cognitive process (Weick, 1995). It is also a process that is situated in related values, past practices, cognitive limitations, organizational culture and organizational inertia. When teachers

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or administrators are confronted with a new policy, their interpretations of it will determine whether they engage in significant change, incremental change, or resistance (Gold, 2002; Louis and Dentler, 1988).

Sense-making is not an event, but is ongoing, focused on extracted cues, driven by plausibility and tied to identity construction (Conley, 2002; Weick, 1995). It occurs whenever groups notice a situation that does not fit with their daily routines, and then use their past experiences to find patterns on which to base an explanation for the new situation. While most ongoing sense-making occurs through individual reflection, when teachers feel that their legitimacy is threatened (as when faced with a policy that they believe stifles their creativity, takes their autonomy away, or threatens their professional judgment), they are more likely to engage in collective sense-making. Threats are also present when members – particularly school leaders – try to protect their school's reputational status (Shrum and Wuthnow, 1988). When this happens, local educators feel pressure to reconstruct their legitimacy by attacking the legitimacy of others or by justifying their own behavior (Gold, 2002). This may result in collective affirmation of behavior or cognitive maps that interrupt further consideration of the policy.

Educators are often blamed for resistance to change. Such attachment to the status quo should not be perceived simply as a lack of capacity or a deliberate attempt to undermine new policies, because doing so neglects the complexity of the sense-making process (Spillane, Reiser, and Reimer, 2002). Compliance readiness has three main dimensions: (1) ideological readiness, or the degree to which the target element agrees with the norms and conditions of the target agent (the main focus of the sense-making); (2) organizational capacity to meet demands; and (3) power to resist control agents (Zald, 1978). Perceptions about both capacity and power thus become part of the background process of sense-making. Most explanations for compliance behavior depend upon the interaction among the sources of power, group norms about conformity and visibility of the target actors' behavior, which define the conditions about how organizational members will act, exert power and make sense of power (Warren, 1968).

To summarize, in order to develop policies that successfully change practice, it is essential to begin by examining the implementer's cognitive perspective. A study of New Jersey's Whole School Reform found that individual cognitive limitations were a primary cause of resistance to change (Gold, 2002). Cognitive limitations are further exacerbated if educators interpret the policy differently (Grant, 2001). Variation in interpretation also becomes more problematic as the policy stakes increase and as curriculum and instruction is redesigned to prepare students for the tests that are a mainstay in the new policy (Rutledge, 2002). Context also matters (Gupta, 1994): what appears to be a coherent and straightforward policy initiative to a legislator or state

administrator may be perceived quite differently by school leaders in poor urban schools as compared with leaders in wealthy, suburban settings.

Sense-making depends not only on individual and group cognitive capacities and the nature of the policy, but also on the collective learning opportunities that are available in the school (Marks, Louis, and Printy, 2002). In peer groups with a high rate of interaction among members, values and attitudes are redefined through frequent contact. Such socialization pressure from peers is a very effective form of pressure to change cognitive maps and behavior and is consequently distinct from external policy or other control mechanisms (Warren, 1970). For example, time to meet and talk allows school administrators to construct interpretations of policies and to draw implications for their own work (Firestone, Meyrowitz, and Fairman, 1998; Spillane et al., 2002). Thus, organizational learning is a critical component of sensemaking because it prevents teachers' current beliefs and experiences from interfering with their ability to implement and interpret the policies in the manner that policymakers intended (Gold, 2002).

The presence or absence of such opportunities for sense-making is dependent, to a large degree, on the local school system's culture, leadership, collegial support, available resources and available time to carry out the proposed initiative (Dutro, 2002; Gold, 2002; Marks et al., 2002). School and district administrators play a central role because they often determine the conditions under which policy interpretation and implementation will be carried out (Burch and Spillane, 2002; Marks et al., 2002). With the role of policy mediator for the entire organization, administrators typically have a larger organizational perspective, which they utilize as their primary framework to respond to policy initiatives. Factors that may determine administrators' response are their previous familiarity with the policy and their diagnosis of specific issues within the school, including their assumptions of student needs and their relationship with the district.

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The district

This section of the review summarizes historical and current research on the district's role in educational change. Here we identify challenges districts face in bringing about change, strategies that seem useful in improving student learning and evidence about the impact of the district on improving student achievement. Much of this research treats the district as an independent variable acting as an organizational entity without explicitly and systematically examining leadership practices and effects. Nonetheless, the research provides a rich foundation of knowledge about district-level policies and strategies associated with education change.

A history of research on the district role

A key difference between early and current research on the school district role in educational change relates to variation in the policy contexts in which the research was conducted. Research on the role of the district in educational change was initially undertaken in relation to what Fullan characterized as the "innovation implementation" era of change (Fullan, 1985). Research considered the role that districts played in supporting the implementation of specific government and district-sponsored programs and practices. Berman and McLaughlin (1978), for example, found that some school districts adopted programs for bureaucratic (i.e., compliance) or opportunistic motives (e.g., access to funds, to appear "innovative") and were less successful in facilitating the implementation into practice of those programs than districts that adopted programs as a means of solving previously identified problems in student and school performance. Louis, Rosenblum and Molitor (1981) also associated higher degree of program implementation and continuation with problem-solving orientations and actions at the district level. Research on how school districts and schools manage the reality of multiple innovations and continuous improvement was in its infancy at this time (Fullan, Anderson and Newton, 1986; Fullan, 1985; Anderson 1991; Wallace, 1991). With a primary focus on teacher implementation of new programs and practices as the dependent variable, the linkage of leader actions to improvement in student learning remained hypothetical.

The innovation implementation era of educational change was followed by the effective schools paradigm and by interest in restructuring (e.g., site based management, comprehensive school reform). Researchers and policymakers idealized the "school as the unit of change." Much of the effective schools' research ignored the role of the district or identified districts as partly to blame for allowing ineffective schools to exist and persist along side a few so-called effective schools (e.g., Edmonds, 1979). Some reviewers of the effective schools research attempted to draw out implications for school districts to help replicate the characteristics more widely (e.g., Cuban, 1984; Purkey and Smith, 1985), though the suggestions were not actually based on studies of district efforts to do so. Research on the correlates of effective schools led to

The innovation implementation era of educational change was followed by the effective schools paradigm and by interest in restructuring.

state and district policies and projects intended to replicate the characteristics of effective schools in other schools; this in turn led to research on the process and outcomes of the effective schools initiatives. Some of these studies did examine linkages between schools and school districts. Louis (1989), drawing upon a large-scale survey and case studies of effective schools initiatives in urban secondary schools (Louis and Miles, 1990) identified four district-level approaches to school improvement varying in terms of the uniformity of process and outcomes intended: implementation strategy; evolutionary planning; goal-based accountability; and professional investment. A key finding from this and similar research (e.g., Berman et al., 1981; Rosenholtz, 1989) is that districts vary in approach and that the variation is associated with district leader conceptions of the change process. The links between the policies and strategies enacted by district leaders and the quality of student learning and teaching however, remained vague.

Two research studies stand out in this era, one in the United States and the other in Canada. Both of these studies were designed to identify the characteristics of academically effective school districts. Murphy and Hallinger (1988) studied 12 high performing California school districts. They associated district effectiveness with:

■ strong instructionally-focused leadership from the superintendent and his/her administrative team

■ an emphasis on student achievement and improvement in teaching and learning

■ the establishment and enforcement of district goals for improvement

■ district-wide curriculum and textbook adoption

■ district advocacy and support for use of specific instructional strategies

■ deliberate selection of principals with curriculum knowledge and interpersonal skills

■ systematic monitoring of the consistency between district goals and expectations and school goals and implementation through principal accountability processes

■ direct personal involvement of superintendents in monitoring performance through school visits and meetings with principals

■ alignment of district resources for professional development with district goals for curriculum and instruction

■ systematic use of student testing and other data for district planning

…districts vary in approach and that the variation is associated with district leader conceptions of the change process.

- goal setting

- tracking school performance

- generally positive relations between the central office, the school board and local communities

LaRoque and Coleman (1990) reported similar findings from an investigation of 10 British Columbia school districts. Other studies from this time period suggested that strong district influence on instructional decisions and practices in the classroom was not typical in most districts. Floden et al. (1988) surveyed district policy influence on the instructional decisions of fourth grade mathematics teachers in 20 percent of the districts (eight schools per district) across five states. They compared teacher responses in districts that emphasized central priorities and control versus support for autonomous curriculum decision-making. Regardless of approach, district policy influence was weak.

Attention to the school district's role in improving the quality of teaching and learning subsided in the context of policies that emphasized decentralization and school-based management as the engine for change. Meta-analysis of research on the impact of site-based management (SBM) on student outcomes and teaching quality found little evidence that SBM produces much if any improvement in the quality of education in the absence of both pressure and support from district and state levels of education (Leithwood and Menziers, 1998). Some recent case studies of improving school districts in the United States portray contemporary district reform activities partly as a response to a lack of coherence in program, student learning experiences and outcomes, and to school-based improvement efforts associated with periods of district investment in decentralization and site-based management (e.g., Togneri and Anderson, 2003; Hightower et al., 2002).

Contrary to the hypothesis that growth in state policy would result in a loss of district control, researchers discovered that school district personnel continued to play an active role in interpreting and mediating school responses to state policy interventions.

Another stream of inquiry in the late 1980s revisited the district role in response to increasing state policy interventions such as curricular standards, graduation requirements, standardized testing, teacher career ladders and new licensure requirements. Contrary to the hypothesis that growth in state policy would result in a loss of district control, researchers discovered that school district personnel continued to play an active role in interpreting and mediating school responses to state policy interventions (Fuhrman, Clune and Elmore, 1988; Fuhrman and Elmore, 1990). While this research did not explore the links between district interventions and student learning, it did reaffirm the influence of districts on educational change, and set the stage for contemporary research on the district role in education reform.

Contemporary research on the district role

The emergence of standards-based reforms and accountability systems at the state and district levels has led to renewed interest in and inquiry into the district role in educational change. Spillane's (1996, 1998) case studies of school district and school responses to state education reforms in Michigan reaffirmed the active policy-shaping role of districts described earlier by Fuhrman and Elmore (1990). His analysis offered convincing evidence that school district personnel can exert a powerful influence on the kinds of instructional practices favored and supported across a district, and the degree of coherence in instructional guidance provided to teachers. The decentralization experience of the Chicago public school system also contributed to the current interest in the role of districts as a positive force for change. It was only after the district began to reassert its role in providing capacity building, accountability and innovation support to schools that improvements in learning began to emerge on a large scale (Bryk et al. 1998 cited in Fullan, 2001). Elmore and Burney's (1997) case study of the transformation of New York City Community School District #2 from an average performing to one of the highest performing elementary school districts in the city brought the district role to the forefront as a potentially positive force for change (Stein and D'Amico, 2002). District #2 leaders articulated a strategy for improvement that emphasized instructionally-focused professional development, sustained system-wide focuses for improvement, leadership, networking of local and external expertise and decentralization of responsibility for implementation with high accountability for goal attainment by schools. These cases confirmed that at least some districts "matter" in powerfully positive ways for student learning in large numbers of schools and for students of all backgrounds.

These studies provide a foreground to the recent array of individual and multi-site qualitative case studies of high performing and improving school districts that explicitly set out to isolate what is happening at the district level that might account for the reported success. Much of this research has focused on districts serving communities with large numbers of students traditionally portrayed as low performing and hard-to-serve on the basis of ethno-cultural, socioeconomic and linguistic diversity. Much of the research has concentrated on large urban school districts. Key examples include Cawelti and Protheroe's (2001) study of change in six school districts in four states; Snipes, Dolittle and Herlihy's (2002) case studies of improvement in four urban school systems and states; Massell and Goertz's (2002) investigation of standards-based reform in 23 school districts across eight states; McLaughlin and Talbert's (2002) analysis of three urban or metropolitan area California districts; Togneri and Anderson's (2003) investigation of five high poverty districts (four urban, one rural) from five states; and several single-site case studies of district success (e.g., Hightower, 2002; Snyder, 2002). These studies

…school district personnel can exert a powerful influence on the kinds of instructional practices favored and supported across a district, and the degree of coherence in instructional guidance provided to teachers.

are complemented by other studies that are not limited to districts defined as high performing or improving on the basis of student results (e.g., Corcoran, Fuhrman and Belcher, 2001). Efforts to synthesize this research on the district role and effectiveness in creating the conditions for success in all schools for students in the current standards and accountability-driven reform context are also beginning to appear (e.g., Marsh, 2002; Hightower et al., 2002).

Here we draw upon this literature to illustrate findings on the district role in reform in three areas: the challenges confronting district efforts to implement system-wide improvements in student learning; district strategies for improving student learning; and evidence of impact on the nature and quality of teaching and learning.

Challenges faced by districts

Researchers identify a multiplicity of obstacles to system-wide improvement that form part of the initial landscape for reform and which have to be addressed in the process of reform. Snipes, Doolittle and Herlihy (2002), for example, identified seven challenges facing four large urban districts that had significantly improved the learning of their students:

- unsatisfactory academic achievement, especially for minority and low income students

- district histories of internal political conflict, factionalism, and a lack of focus on student achievement

- schools staffed with a high proportion of inexperienced teachers compounded by frequent turnover and difficult working conditions, leading to disparity in the capacities of teaching staffs in schools serving different student populations

- low expectations and a lack of demanding curricula for lower income and minority students on the part of school personnel

- lack of program and instructional coherence within and across schools, contributing to fragmentation of district support and weak alignment with state standards

- high student mobility with consequent challenges for continuity in student learning

- unsatisfactory business operations, including difficulty for teachers and administrators getting the basic necessities to operate schools and classrooms, and traditions of promotion based more on seniority and politics than on evidence of skill and commitment to system efforts to improving education quality

Many of the basic challenges described by Snipes and company are reported in other case study investigations of district-wide improvement initiatives (e.g., Massell and Goertz, 2002). Togneri and Anderson (2003) identified several other major systemic challenges that had to be overcome through the process of change over time, including:

- The capacity of many principals appointed under pre-reform regimes to carry out new expectations for instructional leadership in high-accountability contexts;

- how to finance the reform efforts (e.g., reconfiguring existing organizational structures and budgets, granting policy waivers, doing away with programs peripheral to the district reform priorities, raising funds through local bond elections and community contributions, competing for government and foundation grants);

- traditional organizational structures, policies and professional norms that created obstacles to restructuring of working conditions and support systems.

One thrust of our study of district and school leader reform roles and development will be to clearly identify the major systemic challenges they confront and the actual strategies they use to address those challenges to varying effect. In addition, our research will be designed to identify the challenges that emerge as the reforms proceed, not simply those that characterize the reforms at the beginning (cf Corcoran, Fuhrman and Belcher, 2001).

District strategies for improving student learning

There are at least 12 common focuses of district-level strategic action identified in the literature on district efforts to improve student learning.

1. District-wide sense of efficacy. Superintendents and other district-level leaders in academically successful school districts convey a strong belief in the capacity of school system personnel to achieve high standards of learning for all students, and high standards of teaching and leadership from all instructional and support personnel. This is marked by a willingness to identify poor performance (student, teacher, school) and other obstacles to success, to accept responsibility and to seek solutions.

2. District-wide focuses on student achievement and the quality of instruction. Evidence of district-wide improvement and success for all categories of students and schools is more likely in districts that establish a clear focus on attaining high standards of student achievement (with explicit goals and targets for student performance). Academically successful districts also tend to emphasize instructional quality as one of the keys to improvement in student learning.

District-level leaders in academically successful school districts convey a strong belief in the capacity of school system personnel to achieve high standards.

3. Adoption and commitment to district-wide performance standards. High performing districts pay serious attention to state-mandated standards for curriculum content, student achievement and school performance. The pervasiveness of the standards movement extends beyond curriculum, school and student results in some districts to other dimensions of reform efforts, such as standards for instruction, principal leadership and professional development (Togneri and Anderson, 2003). Standards are key features of district performance monitoring and accountability systems as described below.

4. Development/adoption of district-wide curricula and approaches to instruction. Lack of consistency in curriculum hinders sharing of experiences between classrooms and schools, makes it difficult for students transferring among schools and fragments district professional development efforts, all of which interfere with improvement in student learning. Effective districts typically make efforts to establish greater coherence in curriculum content and materials. The emphasis on curriculum coherence often extends to support for the use of specific instructional strategies said to work well with the content, learning outcomes and learners.

5. Alignment of curriculum, teaching and learning materials and assessment with relevant standards. The development or adoption of district-wide curricula and instructional materials takes place in the context of state/district standards for curriculum and learning. Alignment of curriculum at the school and district level with these standards, and with district and state assessment programs (standardized tests) is a major focus of attention.

6. Multi-measure accountability systems and system-wide use of data to inform practice, to hold school and the district leaders accountable for results and to monitor progress. Successful districts invest considerable resources in developing their capacity to assess the performance of students, teachers and schools, and to utilize these assessments to inform decision-making about needs and strategies for improvement and progress towards goals at the classroom, school and district levels. Commitment to data-informed decision-making linked to district standards translates into supports for local educators to develop the capacity to use data and use it well (e.g., training, tools and consultants to help with data analysis, timely data feedback). In developing their accountability systems, these districts often attempt to compensate for deficits in state accountability systems (e.g., insufficient data on student progress from year to year, narrow measures of school performance). Finally, the accountability systems are created not only to gather and provide information on student, teacher, school and district performance for planning, but also to hold educators at all levels of the system accountable for progress towards district and school goals aligned with the standards.

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7. Targeted and phased focuses of improvement. Case studies of successful and improving districts reveal reform efforts that are system-wide in the sense of affecting all schools, teachers and students. Initially these efforts are typically targeted on specific curriculum content areas, such as reading, writing and mathematics, and support for reform typically begins in the elementary schools. Additional help is often targeted towards lower performing schools and classrooms. Analysts and practitioners emphasize the importance of having a concrete focus and goals for improvement embedded in the local learning milieu, and of sustaining this focus over a number of years in order to ensure that improvements have time to take hold and have an impact in the classroom over the long term.

8. Investment in instructional leadership development at the school and district levels. One of the hallmarks of districts that have succeeded in moving from low to high performing is an intensive long-term investment in developing instructional leadership capacity at the school and district levels. At the school level these efforts focus at least on principals. Togneri and Anderson (2003) and other researchers report that many successful districts favor in-house principal leadership development programs over the generic licensure-oriented principal training programs. District reform efforts often include the establishment of new school-based teacher leader positions (e.g., literacy coaches) to work with principals and with district consultants to provide professional development assistance (e.g., demonstrations, in-class coaching, school professional development, or PD, arrangements) to individual teachers and teams of teachers in the targeted focuses of reform. Professional development is also provided to teacher leaders in the content areas that local reforms focus on, as well as in change process strategies.

9. District-wide job-embedded professional development focuses and supports for teachers. Districts that believe that the quality of student learning is highly dependent on the quality of instruction organize themselves to support instructionally-focused professional learning for teachers. These districts provide intensive off-campus *and* school-based professional development experiences for practicing teachers. Such experiences combine input from external and local experts, are focused on school and district priorities for improvement and are justified by evidence of need (e.g., student data). Learning experiences go beyond the workshop format to include such things as teacher inter-visitations, demonstration lessons, in-class coaching and teams of teachers doing lesson study, curriculum planning and analysis of assessment data. Teacher development involves multi-year goals for instructional improvement (e.g., reading, mathematics) and increased school control over professional development (PD) decisions and resources in the context of district goals for improvement.

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10. District-wide and school-level emphasis on teamwork and professional community. Collegial work groups (e.g., grade level teams, school improvement teams), sharing of expertise, networking of teachers and principals across schools, cross-role leadership and school improvement teams at school and district levels – all these and many other configurations of professional educators collaborating with one another on student achievement-focused district reform initiatives are indicative of a common emphasis on teamwork and professional community as one of the keys to continuous improvement. The literature is relatively silent about the participation of other stakeholder groups in reform planning and implementation. Togneri and Anderson (2003) highlight positive relations and collaboration between school boards and superintendents, and between teacher unions and district officials in some of the districts they studied, but not all. Several studies mention the role of business and civic leaders in pressuring and mobilizing the initiation of serious reforms, however, the participation of these external stakeholders is less well documented during the actual implementation of reform plans. The role of parents in district-wide reform is understudied and not well understood.

11. New approaches to board-district and in district-school relations. Togneri and Anderson (2003) associate more successful districts with school boards that have adopted a policy governance role that emphasizes policy development, goal and standards setting, strategic planning and monitoring of system/school progress in relation to district plans, priorities and accountability systems. Boards operating in this mode hold the superintendent responsible for implementation of system plans but avoid direct involvement in managing the school system. Stability in membership and constructive long-term relations with the district administration are also characteristic of these boards. School boards are often among the key instigators for reform and are instrumental in getting reform-minded superintendents into place.

Most analysts of the contemporary role of school districts in education reform comment on the dynamic tension between district-wide goals for reform and the need for educators at the school-level to plan and organize in ways that fit the needs and characteristics of their specific contexts (Elmore and Burney, 1997; Marsh, 2002; Massell and Goertz, 2002; McLaughlin and Talbert, 2002; Togneri and Anderson, 2003). More-successful district reform initiatives decentralize considerable authority to schools to define student learning needs and to structure the use of professional development resources. The trick is for schools to do this in ways that do not fragment the coherence of overall reform efforts across the district. More research is needed to clarify the district policy and strategy dynamics that enable this bottom-up/top-down approach to reform.

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12. Strategic engagement with state reform policies and resources. Educators at the district and school levels actively interpret external reform initiatives in light of their own beliefs, preferences and experiences, and they mobilize resources to fit local reform agendas (Spillane, 1996, 1998, 2002; Corcoran, Fuhrman, and Belcher, 2001). Successful districts more actively engage with the external policy and resource context in order to leverage those influences to strengthen support for the district reform initiatives, and to influence the external context in favor of the local reform agenda (Fuhrman and Elmore 1990; Spillane 1996; Togneri and Anderson, 2003).

The impact of district-wide reforms on teaching and learning

The recent case study literature provides illuminating accounts of change at the level of district ethos, goals for improvement and restructured organizational infrastructures to support reforms. The empirical linkages between district-level policies and actions and actual changes at the classroom level, however, are more hypothetically than empirically demonstrated. The case for impact on student learning outcomes is correlational but stronger than the case for impact on instructional activities in the classroom. If test results show significant widespread gains in student results temporally associated with district reform plans, if these trends are generalized across all or most schools, and if the performance gaps between previous groups of low and high performing students and schools are seen to be diminishing over time, the argument is made that district reform efforts are having a positive impact on student learning. The empirical links between district policies and the actions of district leaders to teachers' activities in the classroom and from there to gains in student learning at the classroom and school levels, however, remain vague. Furthermore, apart from anecdotal and non-systematic observations, teacher self report and the interview accounts of local leaders whose vested interest is at stake, evidence of the extent and scope of teacher change in the classroom is generally wanting.

Student and family background

Although evidence about the influence of student and family backgrounds on student success in school is incontrovertible (e.g., Henderson, 1987; Sanders and Epstein, 1998; Snow et al., 1991; Walberg, 1984), there remains considerable conflict about how this variable should be addressed in district and school improvement efforts. Such conflicts are based on two largely incompatible views of public schools.

The "independent producers" view: This view holds that schools are largely separate from the rest of society and capable of doing their job well in the absence of much interaction with families, communities and the wider world. Schools have "no excuses" for failing to teach all children to the same high standards. Two quite different groups of people advocate this view: one group (not much concerned with equity) believes that if school professionals were more highly motivated, problems of low student achievement would be solved; a second group (passionately concerned about equity) believes that the solution is much more complicated but believes that even to acknowledge such complexity decreases the school's motivation to achieve high standards with children who, traditionally, do not do well in school.

The "interdependent co-contributor" view: This view holds that schools must certainly continue to improve what happens inside their buildings. But they stand little chance of addressing the needs especially of highly diverse populations unless the boundaries of their work encompass children's experiences in the home and wider community. Those adhering to this view typically value equity as a prominent goal for public schools and consider the building of productive working relationships with parents and the wider community part of the core mission of schools; schools cannot overlook the social and emotional needs of students manifest in classrooms every day.

These two views of schooling have strong roots in political ideology. The independent producers view, as advocated by those not much concerned with equity, is closely aligned with the ideology of the political right, while those in the middle to the left of the political spectrum may adhere to either view depending on their understandings about what works best for children's learning. Because political ideologies represent more or less coherent value systems, they are quite useful for many purposes. But they also get in the way of pursuing shared values. As we see with the two groups of "no excuses" advocates, ideology sometimes does not help us to decide how best to realize our most fundamental values. Empirical evidence bearing on this matter supports four claims.

The first claim is that a family's socio-economic status is strongly related to student learning and behavior. Beginning with the now-famous evidence reported by Coleman and his colleagues (1966), study after study suggests that socioeconomic status (SES) of families explains more than half of the

difference in student achievement across schools; it is also highly related to violence, dropping out of school, entry to postsecondary education and levels of both adult employment and income.

Schools serving low SES families often find themselves in an "iron circle" that begins with the family's impoverished economic conditions. These conditions may be a consequence of unemployment, recent immigration, high mobility, family breakups and the like. These conditions often give rise to such family risk factors as erratic parenting skills, poor parental supervision, low family income, poverty, isolation, family violence, abuse, neglect, and parental conflict. Low SES families are more likely to have low expectations for their children's performance at school. Impoverished economic conditions increase the chances of families struggling to survive in communities living in high-density housing and their members suffering from malnutrition, other health problems and substance abuse. These are community risk factors, as are high turnover of residences and lack of facilities and services for young people.

A second claim is that a family's economic status (SES) influences learning indirectly by shaping the educational culture of the home. Some low SES families have children who do very well at school. In fact, SES is a relatively crude proxy for a set of family and community conditions and interactions considerably more direct in their impact on student success than SES. These conditions and interactions constitute the family's educational culture; they vary widely across families, occasionally without much relation to income or other social variables, although the relationship between SES and family educational cultures is both positive and significant.

At the core of family educational cultures are the assumptions, norms and beliefs held by the family about intellectual work in general and school work in particular. The behaviors and conditions resulting from these assumptions are related to school success by a substantial body of evidence. Walberg (1984) concluded that family educational culture includes family work habits, academic guidance and support provided to children and stimulation to think about issues in the larger environment. Other components resulting from Walberg's analysis include academic and occupational aspirations and expectations of parents or guardians for their children, the provision of adequate health and nutritional conditions and physical settings in the home conducive to academic work. Communities are able to supplement and sometimes substitute for some dimensions of family educational cultures in ways we touch on below.

A third important claim justified by the evidence is that strong family educational cultures provide children with intellectual, social and emotional capacities which greatly improve their chances of mastering the school curriculum. Family cultures are only the first part of the explanation for

differences in student success. Primary mechanisms joining particular types of family educational cultures with student success are the capacities children acquire by virtue of experiences with, and relationships among, immediate and extended family members. Such "social capital" is comprised of the assets people accrue by virtue of their relationship with other individuals and networks of people. Depending on the existence of high levels of trust, these assets may take a number of forms, such as reciprocal obligations, access to information and norms that enforce functional behavior.

The fourth and final claim warranted by available evidence is that the wider communities in which the children live also contribute to the capacities needed for school success. The old adage that "it takes a village to raise a child" also reminds us that the nuclear, or even the extended family, is not the only source of social capital for a child. Community agencies, neighbors, churches, clubs and the like are all capable of contributing to this form of capital. In the best of circumstances, these networks, people and agencies form strong communities based on familiarity, interdependence and commitment to a common purpose; they may add to the capital provided by healthy family cultures or compensate for unhealthy cultures. But this means that children living in unhealthy family cultures situated in weak community cultures face especially difficult challenges.

The wider communities in which the children live also contribute to the capacities needed for school success.

This evidence makes clear that leaders cannot view the school and the students' homes in isolation from one another; leaders need to understand how schools and homes interconnect with each other and with the world at large and how their schools can increase the productivity of such interconnections for student learning. Examples of school-sponsored practices aimed at building more productive family educational cultures about which considerable evidence has accumulated include: school-community partnerships, which although difficult to implement in some social contexts (e.g., Griffith, 2001; Hatton, 2001) can have dramatic effects on student success at school (Henderson and Berla, 1994); parent education programs (e.g., Cheng, Gorman and Balter, 1997); and school-linked, integrated, social services (e.g., Smrekar and Mawhinney,1999). Leaders may provide the stimulus for adopting and implementing school-sponsored practices such as these.

Other stakeholders

Many stakeholder groups have a direct or indirect interest in schools and school leadership, and commission reports on the state of education have lamented the lack of involvement of stakeholders in decisions that affect them (Patterson, 1993). There is, however, little research on how these groups affect the work of superintendents and principals. Certain themes are evident in the practitioner literature, most of which look at the ways in which stakeholders block or impede the work of school leaders, or point to ways in which their volunteer energy can be corralled to improve the work of schools. Among the themes are:

- Superintendents must manage community stakeholders, including the school board in order to maintain their jobs and gain support for schools (Carloss, 1999; Thiemann and Ruscoe, 1985).

- Parents are valuable primarily as volunteers and collaborators in at-home education (Simon, 2001).

- Community cultures often make change difficult (Taylor and Hampel, 1996).

- Communication and public relations are the keys to working effectively with stakeholders (Townsend, 1993).

- Unions are typically viewed as opponents rather than stakeholders.

There are few studies of successful stakeholder-school leader collaboration (Doyle and Pimentel, 1993). Similarly, discussions of the roles of colleges/universities and business as collaborators and stakeholders are notable by their relative absence, except in a few cases of formal "compacts" (see McLaughlin, 1987 and Hickey and Andrews, 1993 for exceptions).

Because the educational literature on the topic of stakeholders and leadership is so limited, it is important to consider alternative lenses to guide future research. For example, political science frameworks that focus on the policy process may be productive (Sabatier, 1991). As our earlier review of state roles suggested, within this line of research it is useful to inquire about how agendas get set, where agendas are the identification of issues or topics around which policy is formulated (Kingdon, 1984). A focus on agenda-setting, and the role that different groups play in agenda-setting is warranted because the discussion of key issues and topics affect leader behavior well before any policy is actually in place. Kingdon's work, when applied to educational settings (Wahlstrom and Louis, 1993; Stout and Stevens, 2000), focuses on the intersection of three separate "streams" that converge to affect decision makers and leaders: a problem/issues stream, a solutions stream, and an actors stream. This framework seems helpful in guiding research aimed at identifying the issues that are most pressing to school leaders, and the various actors at both the state and local level who play a part in defining the nature of the school

leaders' work in managing their environment. Such a framework focuses future research on such questions as:

■ How do leaders engage those outside the formal institutional structure (parents, community groups, businesses, media and others) in effectively supporting improved teaching and learning? What opportunities for engagement or agenda-setting are overlooked or mismanaged?

■ What barriers or opportunities do these stakeholders present? In particular, how do external stakeholders affect the opportunities for school leaders to define broader and more compelling visions for public education and to generate new solutions?

■ How can their role be leveraged to improve students' learning? What strategies do superintendents and principals use to increase democratic participation in the educational enterprise?

School conditions

A few of the major challenges for district and school leaders aiming to improve teaching and learning in their organizations are to identify which elements or conditions in schools and classrooms have a significant effect on student learning; to figure out which of those elements or conditions are relatively accessible to their intervention (directly or indirectly) and finally to determine what are the most productive forms for those interventions to take. Existing research tells us quite a bit about the first of these challenges but relatively little about the second and third; it is the second and third of these challenges that will be the focus of our research about how school and district leaders can improve student learning.

Especially for struggling students, smaller schools increase the chances of their attendance and schoolwork being monitored.

This section summarizes evidence about school conditions which have a significant impact on student learning and describes effective leadership practices, identified or inferred, by that evidence. By school conditions we mean policies and practices concerning the school's structure, culture, instructional services and human resources, for a total of 14 more specific policies and practices within these categories.

School structures

School size. A considerable amount of evidence suggests that pupils benefit from being part of relatively small organizations (e.g., Lee, 2000). For elementary schools, the optimum size seems to be about 250 to 300 students, whereas 600 to 700 students appears to be optimal for secondary schools.

Especially for struggling students, smaller schools increase the chances of their attendance and schoolwork being monitored. Smaller schools also increase the likelihood of students having a close, ongoing relationship with at least one other significant adult in the school, an important antidote to dropping out. Smaller school organizations tend to have more constrained and focused academic programs. Typically, they are also more communal in nature, with teachers taking more personal responsibility for the learning of each pupil. Summarizing the rationale for smaller schools, Lee, Ready and Johnson (2001) argue that:

> Constructs such as social networks, social resources, caring, social support, social capital, cultural capital and communal school organization are bound by a common idea. Students and adults in schools should know one another better (p. 367).

There is, Lee et al., go on to claim,

> …general agreement on the importance of positive social relations for adolescents' academic and social development. Such relations are much more likely to develop in smaller schools (p. 367).

School personnel are not often in a position to determine the total numbers of students assigned to their school buildings (district leaders do). But they do have some control over the internal social structures of those schools. Because secondary schools often range in size from 1,000 to 3,000 students in the same building, creating schools-within-schools has frequently been recommended as a practical means for realizing the benefits of small units. While promising, this solution has not been nearly as widely implemented as is generally believed. Where it has been implemented, it is typically a response to uncommitted pupils – pupils with low attendance rates, high dropout rates and generally low performance.

Decentralized governance. School councils with either advisory or decision making responsibilities have been widely implemented in most districts by now. Often, when decentralized governance of this sort is used in schools, one of its central aims is to increase the voice of those who are not heard, or at least not much listened to, in the context of typical school governance structures. When this is the goal, a community control form of site-based management (e.g., Wohlstetter and Mohrman, 1993) typically is the instrument used for its achievement, as in Chicago. The basic assumption giving rise to this form of site-based management is that the curriculum of the school ought to directly reflect the values and preferences of parents and the local community (Ornstein, 1983). School professionals, it is claimed, typically are not as responsive to such local values and preferences as they ought to be. Their responsiveness is greatly increased, however, when the power to make decisions about curriculum, budget and personnel is in the hands of the parent/community constituents of the school. School councils in which parent/community constituents have a majority of the membership are the primary vehicle through which to exercise such power. Other forms of site-based management cede greater voice to teachers or school administrators.

Site-based management is widespread, and experience with it relatively long-standing since it was the core instrument of the restructuring movement during the 1990s. Considerable empirical evidence suggests, however, that by itself it has made a disappointing contribution to the improvement of teaching and learning (Leithwood and Menzies, 1999). In those exceptional cases where teaching and learning have benefited from this approach to accountability, school leaders have, for example, adopted a supportive leadership role themselves, nurtured leadership on the part of others and strongly encouraged councils to adopt a capacity-building agenda (Beck and Murphy, 1998). Leadership practices such as these help transform an otherwise impotent strategy into at least a modest force for improving teaching and learning.

Decision making. Quite aside from the research on site-based management, there is a long line of research in organizations of many types, including schools,

In successful site-based management efforts, school leaders have… nurtured leadership on the part of others and strongly encouraged councils to adopt a capacity-building agenda.

about the relationship between decision-making processes and organizational effectiveness. Much of the current literature in this area has been driven by a model of "high involvement" or "high performance" organizations (e.g., Lawler, Mohrman and Ledford, 1992). As applied to schools, there are at least four perspectives on why it is important for teachers to participate in decisions. From a bureaucratic perspective, these reasons include gaining teacher compliance with administrative decisions and building teacher loyalty to superordinates. From a perspective that views teachers as professionals, their participation in decision making is normative and is also seen as enhancing teachers' organizational roles as professional decision-makers. A human relations perspective argues that teachers should be involved in decision making as a means of enhancing job satisfaction, morale and feelings of professional self-efficacy. From this perspective, teacher involvement is a means of avoiding feelings of powerlessness and workplace alienation, both of which can lead to stress and burnout. Finally, the newest of the perspectives, organizational learning, argues that teachers' involvement in authentic forms of decision making is a central mechanism for making better use of the intellectual capacities distributed throughout the organization. This, in turn, results in better, and better coordinated, decisions (e.g., Dinham and Scott, 2000).

As the decision-making literature indicates, teachers may experience both traditional and newer forms of involvement in decision making. Traditional structures for decision making include staff meetings, department structures, committees and the like, whereas school-based management and school councils are among the newer structures for such involvement.

Whatever the form or structure, evidence suggests that teachers usually have the strongest desire to participate in decisions that most directly affect their work in the classroom, showing less need for involvement in policy or organizational decisions. This evidence also suggests that the most beneficial consequences of participation are achieved when teachers feel neither deprived nor saturated with opportunities for decisional participation. Such feelings of equilibrium are subject to considerable individual variation, however.

School culture

School-wide sense of community. The creation of a widely shared sense of community among all of a school's stakeholders is important for several reasons. First, the affective bonds between students and teachers associated with a sense of community are crucial in engaging and motivating students to learn in schools of any type. A widely shared sense of community is also important as an antidote to the unstable, sometimes threatening and often insecure world inhabited by a significant proportion of the families and children served by especially challenging schools.

> Whatever the form or structure, evidence suggests that teachers usually have the strongest desire to participate in decisions that most directly affect their work in the classroom.

A collective sense of belonging for those living with these circumstances provides psychological identity with, and commitment to, others (Beck and Foster, 1999). Individuals who feel secure and purposeful as a result of these connections, identities and commitments are, in turn, less susceptible to the mindset of fatalism and disempowerment which often arises from repeated episodes of loss. Success at school depends on having goals for the academic, personal and vocational strands of one's life, as well as a sense of self-efficacy about the achievement of those goals.

Antiracism. A growing body of evidence suggests that racism lies behind a significant proportion of the cultural "insensitivities" students from diverse backgrounds experience in school. Furthermore, this evidence calls into question multiculturalism, the most prevalent response to diversity in many schools and districts, because:

> …multiculturalism perpetuates a kind of color-blind relativism that implies that although people's skin color may be different, they are regarded in our society…as equal and the same. This pretense both masks and denies the very real prejudice, conflict and differential achievement of students in most schools (Shields, LaRocque and Oberg, 2002, p. 117)

In place of multicultural policies and practices, school personnel are now encouraged to engage in "antiracism education" (Dei, 1996) in order to eliminate the marginalizing, oppressive and self-destructive impact of racism on people of color. Antiracism education works at several levels (Solomon, 2002). At the individual level, it attempts to eliminate behaviors that have a negative impact on people of color, while at the organizational level it critically examines and then alters the structures and policies that entrench and reproduce racism. As a general stance toward racism, teachers and administrators are encouraged "to analyze, challenge, and change power relations; advocate for equitable access of people of color to power and resources; and ensure their full participation in racially diverse societies" (Solomon, 2002, p. 176).

There is little empirical evidence about successful responses to racism in schools. Nonetheless, advocates of antiracism believe that teachers and administrators should establish antiracism as an ethical and moral imperative in their schools, and persistently and explicitly reject assumptions of cultural and racial deficiency (Wagstaff and Fusarelli, 1995). They argue, as well, that school leaders should expect all staff to work toward equity, democracy and social justice for all students and their families. With staff, these leaders should systematically examine the content and process of schooling to eliminate racism and to provide opportunities for racial minorities to express the negative impact of racism on their lives (Shields, LaRocque and Oberg, 2002).

For antiracism education to be effective, school staffs need to ensure that student racial and ethnic characteristics are reflected in the teaching and support personnel, because an ethnically diverse teaching staff has the potential to enrich the school's teaching and learning, and to provide a voice for racial minority concerns.

For antiracism education to be effective, school staffs need to ensure that student racial and ethnic characteristics are reflected in the teaching and support personnel, because an ethnically diverse teaching staff has the potential to enrich the school's teaching and learning, and to provide a voice for racial minority concerns (Solomon, 2002). School staffs will further antiracism education when they uphold antiracism principles and practices in the face of challenges from all stakeholders in the school. Shields, LaRocque and Oberg (2002) suggest that this might be accomplished by building a "community of difference" in the school, one which encourages respect, dialogue and understanding about differences rather than the shared norms, beliefs and values typically associated with the concept of community. Finally, advocates of antiracism argue that racism will be reduced as teachers and administrators build alliances and coalitions with other equity-conscious groups and agencies in the broader community.

Instructional policies and practices

Student retention and promotion. While retaining students by course has long been a common practice in secondary schools, social promotion by grade has been a common policy in elementary schools until quite recently. Over the past decade, conservative policymakers in many jurisdictions have enacted a "tough love" strategy for raising student performance which often includes retaining students at grade until they meet minimum passing standards often judged by the results of end-of-grade exams. Efforts to reform Chicago schools have been undertaken in two phases, the first focused on elementary schools, the second, beginning in 1995, on high schools (Allensworth and Miller, 2002). A major influence on high school reform outcomes to date has been the end of social promotion in elementary schools: students in the third, sixth and eighth grades who do not achieve a minimum score on the Iowa Test of Basic Skills are either retained or sent to academic preparatory centers. This policy has resulted in a substantial reduction in high school enrollments, partly by reducing the age at which students drop out of school. Dropouts now either do not enter, or spend fewer years in, high school. This means an overall improvement in the performance of students who do enter high school but may well mean less education for those who drop out.

Across all groups of elementary students, evidence strongly suggests that retention policies rarely produce improved learning and often have negative effects on learning as well as attitudes toward school and learning (McCoy and Reynolds, 1999; Westbury, 1994; Darling-Hammond, 1998). Some of this evidence seems contradictory, however, and this is because retention policies have dramatically different effects on different groups of pupils. For pupils with a relatively robust sense of academic selfefficacy, the raising of standards with clear sanctions for failure can be positively motivating. A robust sense of academic self- efficacy typically results in more work as a response to the

threat of failure. So those who have traditionally done well at school, acquired high levels of academic self-efficacy in the process, but are not trying as hard as they could may well benefit from such policies. In contrast, those who have often struggled at school and frequently experienced failure are likely to have developed a low sense of academic self-efficacy. For them, the most likely response to the threat of being "held back" is to give up and, at the secondary level, to drop out of school altogether. Elementary schools serving diverse groups of students, this evidence suggests, should adopt a differentiated or contingent grade promotion policy, one that allows for either retention or social promotion based on careful diagnosis of the reasons for a student's failure.

Instructional program coherence. While the amount of evidence about instructional program coherence is modest, an especially well-designed study by Newman, Smith, Allensworth and Bryk (2001) has reported impressive effects on pupils' achievement in reading and mathematics in elementary schools serving communities experiencing high rates of poverty, social stress and racial diversity. For purposes of this study, instructional program coherence was defined as:

> …a set of interrelated programs for students and staff that are guided by a common framework for curriculum, instruction, assessment and learning climate and that are pursued over a sustained period (p. 297).

In contrast to excessive numbers of unrelated, unsustained improvement initiatives in a school, instructional coherence contributes to learning by connecting students' experiences and building on them over time. As pupils see themselves becoming more competent, their motivation to learn is likely to increase also. Similar effects can be expected for teachers as they work collaboratively toward implementing a common instructional framework.

Developing instructional program coherence requires strong leadership which fosters teachers' professional community and a shared commitment to the program. Leadership behaviors include: the decision to adopt or develop a common framework and to make it a priority for the school; to insist that the framework be used by all teachers; to strongly encourage teachers to work with their colleagues to implement the framework; and to provide sustained training for staff in the use of the framework (Newman et al., 2001).

Extracurricular activities. Extracurricular or "co-curricular" activities play an important role in students' total development (Holland and Andre, 1987). Participation in extracurricular activities has been related to improved self-esteem, improved race relations in schools and greater involvement by students in social and political activities. Extracurricular activities also appear to contribute to better academic grades, higher educational aspirations, greater feelings of control over one's life and reduced incidences of delinquency.

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"Good" high schools, this literature suggests, typically offer a significant range of extracurricular activities. And smaller schools generally have higher levels of participation in these activities than do larger schools.

Human resources

Allocation of teacher time. Evidence about the use of teacher time (e.g., Hargreaves, 1990, 1992, 1994) acknowledges that it is a finite and valuable resource that is sometimes squandered by competing demands and conflicting priorities. Many school reform and restructuring initiatives, especially those which decentralize more decision making to the school, increase the hours that teachers work. These increases are greater in smaller schools and for those teachers who volunteer for or are assigned more responsibilities as curriculum developers, mentors, staff developers and the like.

Additional time spent working by teachers, especially on major school improvement initiatives, may contribute to greater professionalization of the role. Alternatively, such work may intensify the demands placed on teachers, particularly given current conditions of the changing composition of classes, mainstreaming, reduced classroom support, increased expectations for what schools should accomplish and a greatly expanded definition of the teacher's role in many educational jurisdictions.

The professional work ethic of teachers, a product of their well-documented commitment to students (Lortie, 1975; Waugh, 2000), in combination with the factors mentioned above, contributes to relatively long hours of work for many teachers. Although one response to long working hours is to establish, in teacher contracts, designated amounts of preparation time, this response has mixed results. It allows some teachers to feel less stressed, better organized and more effective instructionally. But it sometimes contributes to teachers' isolation from one another and to contrived collegiality. Some teachers also worry that such time reduces continuity of instruction with their students.

Teacher working conditions. Research evidence identifies conditions which enhance teachers' work by affecting such variables as teacher commitment, effort and job satisfaction. The amount of evidence in support of any one of these conditions varies, but in most cases is best described as moderate. These conditions include:

- visible student outcomes

- relatively high levels of student achievement

- opportunities to teach academic subjects

- powerful and salient feedback about teacher efforts to influence student learning

- low levels of student disruptions and misbehavior

- opportunities for teacher leadership in the school

- visibility of new roles

- high levels of perceived support by school administrators

- broader participation in school decisions

- clear links between change initiatives and student welfare

- avoidance of excessive emphases on evaluation and accountability, especially with simplistic performance assessment techniques

- opportunities to be rewarded with more pay and career opportunities

- teacher incentive structures

- peer assistance, especially for new teachers

- teaming with other teachers

- adequate equipment and other resources in the classroom

- high levels of classroom autonomy

- increased program coordination

- increased teacher leadership opportunities

- opportunities for professional development

- relatively high maximum end-of-career salaries

Variability, complexity and uncertainty in the workplace reduce teachers' commitment, effort and satisfaction. Conditions associated with these qualities of the workplace include the number of periods taught, the number of different preparations required, the proportion of a teacher's classes that he/she feels competent to teach, the total number of students in classes and the average achievement levels of students in class.

Classroom conditions

Student learning is influenced most directly by classroom conditions which are a result of state, district and school conditions, as well as individual teacher preferences, capacities and motivations. Summarized in this section is evidence to suggest that at least eight areas of classroom policies and practices warrant the attention of leaders aiming to improve student learning. These policies and practices include opportunity to learn, class size, teaching loads, teaching subjects in which teachers have formal preparation, homework practices, classroom student grouping practices and curriculum and instruction.

Class size

By now, there is little debate in the research community over the contributions to student learning of smaller elementary school class sizes. Research on the matter is voluminous and continuing to grow at a fast rate. This body of evidence includes individual empirical studies, as well as good quality reviews of research.

Evidence about class size effects not only identifies optimum sizes, it also suggests that the greatest benefits of reducing class size are found in the first two years of schooling when accompanied by appropriate adaptations to instruction.

Class size research suggests that reductions from a typical 22 to 30 student class, to an approximately 15 student class have the potential to significantly increase student achievement, provided that suitable changes are made in teacher practices which take advantage of fewer students. Evidence about class size effects not only identifies optimum sizes, it also suggests that the greatest benefits of reducing class size are found in the first two years of schooling when accompanied by appropriate adaptations to instruction (e.g., Finn, 2001). These benefits are most beneficial for students who are socially and economically disadvantaged. The effects realized by smaller classes in the primary grades appear to be maintained even three or four years later.

Among the explanations for small class effects are improved teacher morale, more time spent by teachers on individual instruction and less on classroom management, along with fewer disruptions and fewer discipline problems. Other explanations for small class size effects include greater engagement by students in instruction, more opportunities for better teaching to take place, reduced grade retention, reduced dropout rates in secondary schools and increased aspirations among students to attend college.

There are significant constraints or hurdles to be addressed if the impressive effects of smaller class sizes are to be realized on a large scale. As the California experience illustrates so painfully, smaller classes require additional qualified teachers and more safe playground areas and classroom space. Without considerable increases in education funding, smaller primary classes also mean larger classes in the later grades.

Formulas for calculating class size also have to be made explicit. By including non-teaching staff such as librarians into the student-teacher ratio, an inaccurate picture of the number of students is depicted by as much as six

or seven students per classroom. The more accurate calculation required to realize the benefits reported in the class-size research entails counting the actual number of students in each classroom (Finn and Achilles, 1999).

Teaching loads

Evidence concerning teaching loads suggests that it is important to consider both the total numbers of students and subjects taught by teachers as well as the diversity of student needs. The total number of students per teacher over the course of an academic year is significant, especially in junior and senior high schools where, as a consequence of subject specialization, teachers typically see many different groups of students over the course of a week. This view is based on the premise that effective instruction depends on a deep understanding of the cognitive resources brought to class by individual students, along with opportunities to both assess and monitor their learning progress. The chances of meeting either of these conditions for effective instruction diminish with increased student diversity and total numbers of students taught. How districts communicate with schools and introduce, support and monitor changes in teaching loads has an impact on how those changes are received and implemented.

Evidence about teaching load argues for reductions in the typical numbers of students taught by senior teachers, in a semester or year, from a typical 125 to 200 to something fewer than 90. Beyond the research evidence, at least one major "whole school reform" initiative in the United States and several parts of Canada, *The Coalition of Essential Schools* (e.g., Sizer, 1992a, 1992b), advocates holding total numbers of secondary school students taught per teacher to about 90 as a central principle of its program. Additional evidence indicates that reductions in teaching loads may be achieved through the use of teaching assistants. For teachers to be able to contribute to the efforts of sustained development, it is important that they be able to devote their energies to the priority of teaching.

Teaching in areas of formal preparation

The evidence base on the effects of teaching in or out of one's area of preparation is relatively small. Results of extant research suggest that assigning teachers to subjects or areas of the curriculum in which they have formal preparation and certification is important. There is a significant, positive relationship between formal preparation and quality of instruction and student achievement. Goldhaber and Brewer (2000) recently have reported such evidence in the areas of secondary school science and math, for example.

Homework

Our understandings about the forms and effects of homework is primarily informed by a series of extensive reviews of evidence carried out by Harris

Cooper (1989, 2000, 2001). The corpus of individual studies included in these reviews runs in excess of 120. Harris' reviews indicate that homework has both positive and negative effects. On the positive side, homework may contribute to immediate achievement in learning, long-term academic outcomes, independent problem-solving as well as less directly academic capacities such as greater self direction and greater self discipline. Parents also may become more involved in the schooling of their children, another positive effect.

Evidence concerning homework also suggests possible negative effects such as students' loss of interest in academic material, fatigue, lack of opportunity for leisure and community activities, as well as pressure from parents. Homework sometimes exacerbates differences between high and low achievers. Evidence about both the positive and negative effects of homework by now is quite robust.

These homework effects vary by the age and grade level of students. Positive homework effects are greatest for secondary school students but diminish by about 50 percent for students in grades seven and eight. Homework appears not to foster additional learning among elementary students, although small amounts are sometimes advocated for their contribution to good work habits and the like.

The positive effects of homework for junior and senior secondary students are most likely to occur when homework material is not too complex or novel. Furthermore, homework effects peak for junior high school students after one to two hours a night. Secondary school students can expect effects over longer periods of time.

Student grouping

The grouping of students for instruction is influenced by decisions made at both the school and classroom levels, and decisions at both levels often require intervention by those assuming leadership roles. This is because both heterogeneous and homogeneous ability-grouping practices are advocated for the accomplishment of the same goals.

At any point over at least the last 50 years, a synthesis of available empirical evidence would have suggested, quite unambiguously, that students having difficulty at school, especially those disadvantaged by their socioeconomic backgrounds, learn more when they are working in heterogeneous rather than in homogeneous ability groups (e.g., Oakes, 1985; Yonezawa, Wells, and Serna, 2002). Relatively high expectations for learning, a faster pace of instruction, peer models of effective learning and curricula that are more challenging are among the reasons offered for this advantage.

Relatively high expectations for learning, a faster pace of instruction, peer models of effective learning and curricula that are more challenging are among the reasons offered for helping disadvantaged students learn more.

In spite of this evidence, over this same period, the vast majority of teachers and administrators have enacted practices that separate students by ability; their argument is that homogeneous grouping produces greater learning by allowing for the concentration of instructional resources on the same set of learning problems. Many teachers have regarded implementing heterogeneous grouping practices in classrooms as very difficult. Nevertheless, this is one of the rare examples of professional "common sense" being just plain wrong.

Changing the common sense beliefs of teachers about heterogeneous grouping effects on the learning of struggling students requires those providing leadership to bring relevant evidence to the attention of their colleagues in accessible and convincing ways, to encourage actual trials with heterogeneous groupings under conditions which include opportunities for practice, feedback and coaching and to help teachers generate "the kind of assessment information that will make the impact of tracking and detracking more visible" (Riehl, 2000).

Curriculum and instruction

A considerable amount of evidence suggests that the best curriculum for socially, economically or culturally disadvantaged children will often be the rich curriculum typically experienced by relatively advantaged students. But this is not often the case. Rather, the typical curriculum experienced by such children is narrowly focused on basic skills and knowledge and lacks much meaning for these students. Why this should be the case has much to do with a widely mistaken understanding about what kind of curriculum these children will most benefit from. In a comprehensive synthesis of empirical evidence, Brophy (undated) touches on the main features of a "rich" curriculum, one similarly beneficial for most students no matter their background. This is a curriculum in which the instructional strategies, learning activities and assessment practices are clearly aligned and aimed at accomplishing the full array of knowledge, skills, attitudes and dispositions valued by society. The content of such a curriculum is organized in relation to a set of powerful ideas. These ideas are "internally coherent, well-connected to other meaningful learning and accessible for application" (p. 7). Skills are taught with a view to their application in particular settings and for particular purposes. In addition, these skills include general learning and study skills, as well as skills specific to subject domains. Such meta-cognitive skills are especially beneficial for less able students who might otherwise have difficulty monitoring and self-regulating their own learning.

In schools serving diverse student populations, instruction, as well as the curriculum, should meet the same standards of effectiveness that would be expected in schools serving relatively advantaged students. But such standards are not often met. A significant proportion of these schools lack

minimally adequate instructional resources and are in physical disrepair. Many teachers do not find it satisfying to work with students in especially challenging schools; they move on to less demanding environments at the first opportunity (Englert, 1993) citing the lack of psychic rewards from seeing their students succeed. Teachers want to feel certain about their ability to meet the goals they have for students, and to know when they have done so. Rewards of this sort are more easily available to teachers in less challenging schools. Teachers in especially challenging schools often have low expectations for pupil performance and require their pupils to spend excessive time on drill and practice activities aimed almost exclusively at improving basic academic skills.

Brophy's synthesis of research suggests that effective instruction is conducted in a highly supportive classroom environment that is embedded in a caring learning community. In this environment, most of the class time is spent on curriculum-related activities and the class is managed to maintain students' engagement in those activities. In effective instruction, teachers pose questions aimed "to engage students in sustained discourse structured around powerful ideas," and provide the assistance students need "to enable them to engage in learning activities productively" (pp. 8-9).

In contrast to the features of effective instruction identified by Brophy, Cummins' (1986) research suggests that much of the instruction used with children designated as "at risk" places them in a passive role. Such children, he argues, need to be encouraged to become active generators of their own knowledge, to "assume greater control over setting their own learning goals and to collaborate actively with each other in achieving these goals" (p. 28).

At-risk children also may require "culturally responsive" teaching (Riehl, 2000; Jagers and Carroll, 2002). This is teaching based on the premise that culturally diverse students pose opportunities instead of problems for teachers. Teachers adopting this perspective identify the norms, values and practices associated with the often diverse cultures of their students and adapt their instruction to acknowledge, respect and build on them.

Teachers

This variable in our framework acknowledges the substantial direct contribution to student learning of teachers, acting both individually in their classrooms and collectively not only as school staff members, but as members of professional associations and learning communities.

Individual teacher qualities and mental models

A good deal of recent research about the qualities of teachers that are linked to student learning has been driven by debates about whether teaching should be considered and promoted as a profession, or if it should be deregulated and opened up to people without formal teacher preparation (e.g., Darling-Hammond and Youngs, 2002). The bulk of this evidence suggests that significant amounts of variation in student learning are accounted for by teachers' capacities, including:

- basic skills, especially literacy skills

- subject matter content knowledge

- pedagogical skill

- pedagogical content knowledge

- classroom experience

An understanding of how teachers interpret the needs of their own students and the nature and value of external reform efforts requires, however, attention to their mental models. The term mental models has emerged as a shorthand for capturing a central tenet of recent cognitive research, namely, that people interpret their environment through a set of "cognitive maps" that summarize ideas, concepts, processes or phenomena" in a coherent way. That people have mental models that serve as internal representations of the world is not new (Carley and Palmquist, 1992), but the incorporation of this concept into cultural studies of schools is more recent. The convergence of cognitive psychology and cultural sociology is based on the assumption that culture presents a "toolkit" (Swidler, 1986) of mediated images and validated actions that individuals and groups draw on, often with little explicit thought, to guide their daily behavior (DiMaggio, 1997). Mental models are important because decision makers, whether teachers or administrators, need them in order to simplify the chaotic environments and multiple logical options that they face (Porac and Thomas, 1990; Thomas, Clark and Gioia, 1993). Reliance on mental models may be particularly prevalent in the case of busy professionals like teachers, whose work requires them to make hundreds of rapid decisions each day as they search for the best way of encouraging their students to absorb and interpret the material that they are presenting.

Mental models are, in part, a consequence of the range of cultural (socially constructed and recognized) elements that any group develops, and partly a

result of how any given individual organizes the cultural information for their own use (DiMaggio, 1997, 268). This means that each teacher carries their own set of images about what constitutes good pedagogy, and these images are drawn from a limited bank of options that are generated by common expectations, collective experience and shared professional practice, as well as "their biases, expectations and explanations about how people learn" (Spillane, Reiser and Reimer, 2002, 395). The common bank of images from which mental models are drawn is influenced by the "microculture" of a school or a local community, but also by the broadly shared professional environment or "macroculture" (Abrahamson and Fombrun, 1994). In particular, teachers are faced with alternative schemata for good teaching, ranging from practices that are often collected under the rubric of "direct instruction" to those that are based on constructivist or progressive education. Newmann and his colleagues also point to the importance of pedagogic mental models that emphasize connections between the classroom and the real world (Newmann, 1996).

Mental models serve as guides to making both big and little decisions, but they also present constraints because they are the first screen through which new information must pass. DiMaggio (1997) notes that people pay more attention to information that is relevant to their current schemata, and are less likely to have correctly remembered information that is inconsistent. The more widely shared the individual mental models are, the more likely it is that challenging information will be readily accepted – or rejected and reinterpreted (Giddens, 1984; Meyer and Rowan, 1977). Thus, when individuals' use their mental models as a way of making sense of new information or ideas from their environment it can lead to creativity and innovation, or inhibition (Ford, 1996). Thus, research suggests that a teachers' mental models may hold the key to determining whether they make significant changes in their practice or continue with business as usual (Toole, 2001).

Teachers' professional community

A key sociological contribution to the study of school culture and change has emerged in the concept of professional community. Although it has been around for some time, Westheimer (1999) argues that theories of teacher communities are "under-conceptualized." Furman (1999) calls them "confusing," a "mismatch" with postmodern life and further states that they provide "little guidance for practice." Adding to the confusion, researchers use a variety of terms to describe how to organize schools for teacher community and learning: *collegiality* (Barth, 2001; Little, 1990), *collaboration* (Nias, Southworth and Yeomans, 1999; Zellermeyer, 1997), *professional community* (Louis, Kruse and Associates, 1995; McLaughlin and Talbert, 1993), *discourse communities* (Putnam and Borko, 2000), *professional learning community* (Hall and Hord, 2001) and *schools that learn* (Leithwood, 2002).

People pay more attention to information that is relevant to their current schemata, and are less likely to have correctly remembered information that is inconsistent.

By using the term *professional learning community* we signify our interest not only in discrete acts of teacher sharing, but in the establishment of a school-wide culture that makes collaboration expected, inclusive, genuine, ongoing and focused on critically examining practice to improve student outcomes. The term integrates three robust concepts: a school culture that emphasizes professionalism is "client oriented and knowledge based" (Darling-Hammond, 1990); emphasizes learning and places a high value on teachers' inquiry and reflection (Toole, 2001); and has a communitarian emphasis on personal connection (Louis et al., 1995). The hypothesis is that what teachers do together outside of the classroom can be as important as what they do inside in affecting school restructuring, teachers' professional development and student learning (Louis and Kruse, 1995).

Kruse, Louis and Bryk (1995) designate five interconnected variables that describe what they call genuine professional communities in such a broad manner that they can be applied to diverse settings. The variables are: shared norms and values; a focus on student learning; deprivatized practice; reflective dialogue; and collaboration. Researchers vary on the exact list and number of key variables, and those variables can only act as general descriptors. Little (2000) points out that there is no simple checklist or template that will ever adequately guide the construction of professional learning communities. But the central idea of the model is the existence of a social architecture in school organizations that helps shape teachers' attitudes toward new pedagogies (Toole, 2001). Recent research using professional learning community as a variable has shown powerful associations with teacher practice (Bryk, Camburn and Louis, 1999; Louis, Marks and Kruse, 1999; Pounder, 1999; Scribner, Cockrell, Cockrell and Valentine, 1999; Toole, 2001). School administrators, in particular, help develop professional community through their attention to individual teacher development, and by creating and sustaining networks of conversation in their schools around issues of teaching and learning.

Leaders' professional learning experiences

Leaders' learning experiences are both formal and informal. In this section, we review evidence about both.

Formal programs

Fundamental criticisms of university-based programs for the pre-service preparation of school leaders have led to extensive revisions and evaluations of those programs over the past 15 years (e.g., Milstein et al, 1993; Murphy, 1993). Partly as a consequence of this work, the features of effective formal programs for entry-level school administrators are much clearer (e.g., Leithwood, et al., in press; Basom et al., 1996; McCarthy, 2002). For example, the National Staff Development Council (Sparks and Hirsch, 2000) recommends that leadership development programs have the following features: they should be long-term rather than episodic; job-embedded rather than detached; carefully planned with a coherent curriculum; and focused on student achievement. Programs should also emphasize reflective practice, provide opportunities for peers to discuss and solve problems of practice and provide a context for coaching and mentoring. Based on data provided by the University Council on Educational Administration (UCEA), Peterson (2001) argues that programs must have: a clear mission and purpose linking leadership to school improvement; a coherent curriculum that provides linkage to state certification schemes; and an emphasis on the use of information technologies. Peterson also suggests that programs should be continuous or long-term rather than one-shot, and that a variety of instructional methods should be used rather than just one or a small set of delivery mechanisms. Recommendations such as these, however, are not based on evidence of improvements in leadership leading to greater student learning as the fundamental criterion for success. Much research is still required if we are to have confidence in our knowledge about effective leadership program characteristics.

Less-formal learning experiences

Little research to date has inquired about how practicing administrators – outside their participation in formal programs – continue their professional learning over the course of their careers. In particular, although professional common sense and some formal evidence reinforces on-the-job experience as a primary source of leaders' learning (Hamilton et al., 1996; Leithwood et al., 1992), we know little about which experiences are helpful and why. This section of our review offers some theoretical tools for use in beginning to better understand how leaders acquire, on the job, the capacities they need to improve the learning of students.

The work of district and school leaders can be conceptualized as practical problem-solving, a type of thinking embedded in activity. A significant part of the learning required for such leaders to further develop their practical

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problem-solving expertise is usefully conceptualized as "situated." Such learning is specific to the context in which it is learned and most likely to be learned in contexts exactly the same as or closely approximating the situations in which it is to be used, although this is a hotly debated claim.

Situated cognition requires leaders to be immersed in "authentic," non-routine professional activity embedded in a supportive organizational culture. For experienced, expert practitioners, such problem-solving draws on a large repertoire of previously acquired knowledge. This knowledge is applied automatically to routine problems and, through reflection, in unique patterns which appropriately acknowledge the demands of more complex, novel and/or unstructured problems (e.g., Scardamalia and Bereiter, 1990; Berliner, 1988).

"Everyday thinking" or "practical thinking" are terms used to portray the mental processes engaged in, and mental models possessed by, expert, experienced school leaders, as they apply their knowledge in the solving of problems. Such thinking "… is embedded in the larger, purposive activities and functions to achieve the goals of those activities" (Scribner, 1986). Those goals, which may be short or long term in nature, are achieved given the actual facts of the situation as the practitioner discovers them (Wagner and Sternberg, 1986). Leaders' past knowledge (which also has motivational effects) is of considerable use to them when they are engaged in practical thinking in order to solve problems in their classrooms and schools.

Expert practical problem solving by practitioners such as principals depends on ready access to an extensive repertoire of problem-relevant knowledge.

Scribner (1984) has identified a number of characteristics of expert practical thinking within a model consisting of five components. Expert practical thinkers demonstrate a capacity to: formulate problems within a situation that can be handled using well-developed, reliable solutions; respond flexibly to similar problems using different patterns of their existing repertoire in order to fine-tune a solution to the occasion; and to exploit (positively) the social, symbolic and/or physical environment as a way of reducing the cognitive demands placed on the individual for solving the problem. Such experts also find the most economical solutions (those requiring the least effort) that are, nevertheless, effective; and make extensive use of their existing task and situation-specific knowledge for problem-solving.

These are characteristics similar to those associated with leaders' problem-solving (Leithwood and Steinbach, 1995). Expert practical problem-solving by practitioners such as principals depends on ready access to an extensive repertoire of problem-relevant knowledge. Such knowledge is about what actions to take to solve the problem as well as the social and physical context in which the problem is embedded (e.g., the particular students in the teacher's class). It is also about the larger set of activities (procedures and processes) enveloping efforts to address individual problems (Mehan, 1984). As Bransford (1993) notes, this knowledge required for practical problem-

solving is "conditionalized." It includes information about the conditions and constraints of its use, much of which is tacit (Sternberg and Caruso, 1985) rather than self-sufficient abstract concepts. Furthermore, such knowledge is accessed and used in ways that take advantage of the environment as solution tools (Leinhardt, 1988). So leaders' situated knowledge connects leadership or administrative events with particular environmental features related to the district, community and individual people.

Knowledge required for expert, practical problem-solving is situated and acquired under a specific set of conditions which include participation with others in authentic, non-routine activities. The contribution of active participation in developing robust, useful knowledge is evident in Brown, Collins and Duguid's (1989) analogy of concepts as tools. Like tools, concepts can only be fully understood through experience with their use and the refined appreciations (including tacit knowledge) that occur as a result of feedback from such use. Participation with others, especially members of the field of practice who are more expert in some areas (perhaps a more experienced district leader), substantially extends the potential for individual development.

For useful, robust, situated knowledge to develop most readily, participation with others must occur in activity which is "authentic"– circumstances which involve the ordinary activities of school leadership and management. Authentic activities are situated in the social and physical contexts of the school, community, and district, and therefore must be accounted for in problem-solving and must be represented in the knowledge structures stored by the principal. Knowledge for problem-solving will be readily accessible, as Sternberg and Caruso (1985) argue, to the extent that the cues needed at the time of access were encoded when the knowledge was originally being stored. This helps explain the contribution to principal learning of on-the-job, informal experiences as compared with more formal learning activities which may be situated outside the school, community or district.

Finally, the authentic activities in which leaders participate will usually have to be non-routine, as well, if they are to contribute to further development. Non-routine activities stimulate one to examine usual practices through "fresh eyes" thereby helping to develop a capacity, as Ruddock (1988) explains, for the kind of constructive discontent with one's existing practices that will fuel the motivation for professional learning.

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Conclusion

This review has summarized a broad range of empirical research and related literature. Our purpose was to summarize the starting points for a major new effort to better understand the links between leadership and student learning. There seems little doubt that both district and school leadership provides a critical bridge between most educational reform initiatives and their consequences for students. Of all the factors that contribute to what students learn at school, present evidence led us to the conclusion that leadership is second in strength only to classroom instruction. Furthermore, effective leadership has the greatest impact in those circumstances (e.g., schools "in trouble") in which it is most needed. This evidence supports the present widespread interest in improving leadership as a key to the successful implementation of large-scale reforms.

Educational leadership, our review also makes clear, comes from many sources, not just the "usual suspects" – superintendents and principals. But the usual suspects are likely still the most influential. Efforts to improve their recruitment, training, evaluation and ongoing development should be considered highly cost-effective approaches to successful school improvement. These efforts will be increasingly productive as research provides us with more robust understandings of how successful leaders make sense of and productively respond to both external policy initiatives and local needs and priorities, and of how those practices seep into the fabric of the education system, improving its overall quality and substantially adding value to our students' learning.

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