Chapter 5
Distributed Leadership in Schools: Does System Policy Make a Difference?

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> In a matter of a few short years, the idea of distributed leadership has evolved from a theoretical consideration of naturally-occurring social influence processes in school organization . . . to a mantra for reshaping leadership practice. More and more schools and school systems are attempting to develop distributed leadership. Increasingly, state education agencies and national education organizations are encouraging them to do it. (Louis et al., 2009)

The challenge of developing schools with the capacity for continuous improvement has led to a rapidly emerging focus on fostering leadership at all levels of the education system. Nowhere is this more evident than in the press towards distributing leadership among a broader set of key stakeholders, especially teachers, in schools (Barth, 1990; Gronn, 2002; Lambert, 2002, 2003; Spillane, 2006). Paradoxically, the latest thinking suggests that the drive to develop distributed leadership in schools neither diminishes nor comes at the expense of the principal's responsibilities for leadership. Indeed, scholars and policymakers alike assert that principal leadership remains a key driver for change and source of support for building leadership capacity among others (e.g., Childs-Bowen et al., 2000; Gewirtz, 2003; Lambert, 2002, 2003; Murphy, 2009; Stricherz, 2001). As Mayrowitz and colleagues observe: "[P]rincipals occupy the critical space in the teacher leadership equation and center stage in the work redesign required to bring distributed leadership to life in schools." AQ1

This focus on the development of distributed, shared or collaborative leadership is especially evident in new policies and programs initiated at the school system and higher governmental levels (Barth, 1990, 2001; Clift et al., 1992; Fullan, 2006; Gronn, 2002; Harris, 2003; Lambert, 2002, 2003; Spillane, 2006; Spillane et al., 2004). In this chapter we explore the system-wide initiation of distributed leadership and its effects on school improvement. We examine these issues in the context of a state-level mandate in the USA to increase school accountability, enhance leadership capacity, and improve student learning. The specific policy context included the formation of school-community councils intended to engage a broad set of stakeholders in working with the principal to lead school-level improvements.

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Although distributed leadership has gained increasing prominence in discussions of school leadership during recent years, empirical data – especially data concerning its impact on school improvement – remain scarce. In this chapter we synthesize the results of a series of analyses of empirical data on distributed leadership and school improvement. The studies centered on the impact of new state policies that sought to create broader and deeper leadership capacity in schools as a vehicle for stimulating and sustaining school improvement. The policy initiatives underlying the research reported in this chapter reflect global trends, thereby making the study's findings relevant to discussions of system policy, school leadership and school improvement globally.

Perspectives on School Leadership

We define school improvement leadership as a process of influence by which leaders (i.e., school principals and others within the school) identify a direction for change, develop formal and informal strategies for action, and coordinate efforts towards improvements for students. For the purposes of this chapter, we use the terms collaborative, shared, and distributed leadership interchangeably to refer to leadership that is exercised by the principal along with other key staff members of the school. We undertook a series of analyses of data that described the effects of distributed leadership on efforts to upgrade the quality of the school's learning environment, curriculum, instruction and student learning in schools. Consistent with current scholarship, we were particularly interested in understanding how leaders employed *capacity-building strategies* targeting school structure and culture in their efforts to improve learning (Clift et al., 1992; Copland, 2003; Fullan, 2006; Leithwood et al., 2004; Mulford, 2008; Robinson et al., 2008; Smylie et al., 2002; Stoll and Fink, 1996; Sweetland and Hoy, 2000; Walters et al., 2003; Witziers et al., 2003).

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School Improvement Leadership

Despite these broad-stroke conclusions concerning the central role of leadership in school improvement, there remain significant challenges in interpreting this literature (Louis et al., 1999). Indeed, we must note at the outset of this entry that despite the frequency of its use, there is no commonly accepted definition of the term "school improvement." It has been defined variously as the successful implementation of a program, changes in teacher behavior, transformation of the school's culture, an alteration of a school structure, or an increase in student learning or school effectiveness (Clark et al., 1984; Firestone and Corbett, 1988; Fullan, 1982; Heck and Hallinger, 1999; Leithwood, 1994; Louis et al., 1999). School improvement studies, taken as a whole, have been important in providing information about the process of improvement even if they have been less successful in documenting how improvement processes affect student outcomes (Fullan, 1991; Hall and Hord, 1987; Louis, 1994; Reynolds and Teddlie, 2000).

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In addition to acknowledging the diversity of ends that define our understanding of school improvement, there is also disagreement over the means that educators may choose to facilitate improvement (Louis et al., 1999). School improvement processes have been described as complex, multi-dimensional and dependent on the relationship between the school, its community, and its cultural context (Hallinger, 1998; Hallinger and Kantamara, 2001; Hallinger and Leithwood, 1998; Meyer and Rowan, 1977; Sarason, 1982). Conceptualizations of school improvement, therefore, must go beyond adopting an innovation, changing a structure, copying the practices of successful schools, or implementing new management systems such as site-based management (Barth, 1986, 1990; Crandall et al., 1986; Cuban, 1988; Fullan, 1992; Sarason, 1982). AQ6 AQ7

School improvement efforts are, however, a study in contrasts. The past several decades have seen school improvement efforts organized around the adoption of a curricular program, the implementation of teacher development programs, planned school improvement and school development programs, development of schools as learning organizations, and whole school adoption of an organized set of teaching and learning practices. Despite this variety in approaches, a consistent theme emerging from research across this domain over a period of decades is the importance of leadership in facilitating improvement efforts (Berman and McLaughlin, 1978; Firestone and Corbett, 1988; Fullan, 1982, 2000, 2001; Fullan and Pomfret, 1977; Hall and Hord, 1987; Leighton, 1996; Leithwood, 1994; Leithwood et al., 2004; Leithwood and Montgomery, 1982). School leaders play a central role in initiating internal changes in schools, providing direction and support, and sustaining those changes over time by linking the internal and external environments of the school (Fullan, 2001; Meyer and Rowan, 1977). Indeed, based upon experience and research of the past five decades, it is possible to conclude that sustained school improvement in the absence of evidence of leadership is a rarity.

With respect to research-based evidence, the positive contributions attributed to school leadership – specifically that of the principal – for school improvement derive from two general types of studies. The first type is cross-sectional studies of school effectiveness. The second type consists of studies of school change and school improvement projects that observed leadership as a key factor in successful school improvement projects, but which were not explicitly designed to test this as a causal variable.

The most influential model for understand the instructional management role of the principal was proposed by Bossert and colleagues (1982) at the Far West Laboratory for Educational Research and Development 25 years ago (see Fig. 5.1). This model proposed four main levels of variables in seeking to understand the role of principals in school improvement: school context (including student composition), leadership, school processes, and student achievement. Moreover, although Bossert and colleagues acknowledged the complexity of modeling these relationships, the reader will note that the arrows are uni-directional.

The Far West Lab model influenced the design of research on leadership for school effectiveness and improvement over the subsequent two decades in several respects. First, most of these studies focused exclusively on the principal as

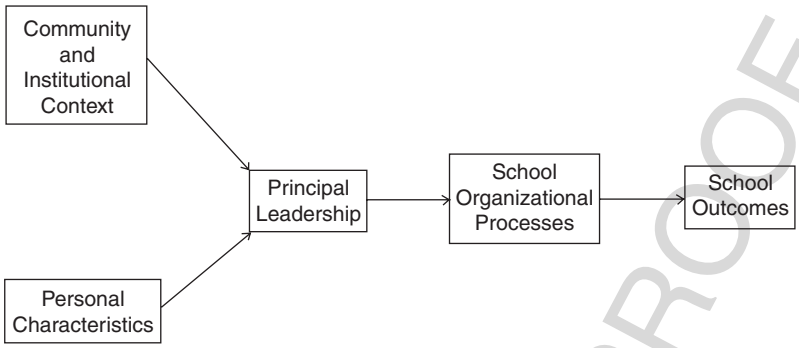

Fig. 5.1 Instructional management role of the principal (Bossert et al., 1982)

the source of leadership. Second, many of the best examples of empirical investigation in the domain of school improvement leadership employed similar multidimensional models (e.g., Goldring and Pasternak, 1994; Hallinger et al., 1996; Heck et al., 1990; Leithwood and Jantzi, 1994, 2000; Wiley, 2001). Third, these studies tended to assume that leadership caused the effects on school outcomes. Finally, the quantitative studies tended to be cross-sectional surveys that described relationships among these variables at a single point in time (Hallinger and Heck, 1996a; Reynolds et al., 2000).

As suggested above, this body of research has yielded important findings about the impact of school leadership on school improvement and school effectiveness (Bell et al., 2003; Hallinger and Heck, 1996a, b; Leithwood et al., 2004, 2006; Robinson, 2007; Witziers et al., 2003). Nonetheless, we would note that this approach to modeling the relationship of leadership to school improvement leaves unanswered important questions of causality. That is, this uni-directional model fails to model the complexity of relationships among the variables as they play out in real organizations. Moreover, cross-sectional surveys are unable to assess how school leaders actually facilitate efforts to improve student learning outcomes over time (Heck and Hallinger, 1999; Sleegers et al., 2002; Smylie and Hart, 1999).

Dynamic Models of School Improvement

With these points in mind, we assert that school improvement represents a dynamic process in which the relationships among people, processes, and structures change over time (e.g., Jackson, 2000). These changes subsequently bring about changes in the state of the organization over time. Thus, the empirical study of school improvement requires the use of *dynamic models* that take into account the changing relationships among relevant variables (e.g., context, leadership, educational processes, and outcomes) over time.

This conceptual requirement for research on school improvement has important implications for methodology. The scarcity of longitudinal data on school

improvement, and until recently, analytic techniques with the power to examine longitudinal processes in multi-level data structures, have hindered the development of this field of research (Hallinger and Heck, 1996a, b; Heck and Hallinger, 2005). These conceptual and methodological requirements for the study of school improvement suggest the need for dynamic rather than static theories and models.

Dynamic theories of organizational change seek to predict how changes in organizational structures (e.g., size, hierarchy, staffing) and social-cultural interactions (e.g., goals, organizational culture, decision-making structures, social networks) impact organizational outcomes *over a period time* (Langlois and Robertson, 1993; Nonaka and Toyama, 2002; Ogawa and Bossert, 1995; Williams and Podsakoff, 1989). The conceptual model depicted in Fig. 5.1 incorporates static and dynamic components of school improvement in one simultaneous model. Dynamic components (which change over time) are shaded. Static components, which represent organizational relations at a single point in time, are not shaded.

Our proposed model conceptualizes school leadership as a distributed effort enacted by the principal and key teacher leaders. Distributed leadership takes place within a school context and drives a set of school conditions and educational processes aimed at improving learning outcomes for children. For the purposes of this study, these key educational processes include a sustained focus on academic improvement, stakeholder involvement in school decision-making, professional learning, student and faculty support, and open communication. The specific roles played by leaders include being catalysts for change, maintaining the improvement focus, facilitating the leadership of others, supporting instructional effectiveness, and providing tangible support for staff and students.

In our proposed dynamic model, ending school status – which is defined in terms of educational processes and student academic achievement – results from changes in previous organizational conditions (i.e., educational processes and growth rates). Stated differently, where schools end in a given temporal sequence is in part a function of (1) where they begin in terms of organizational processes and achievement and (2) what they do to improve those initial conditions. In this chapter we seek to understand more about how leaders influence schools so as to impact the *ending school status*. Therefore, we expect relationships to exist between key ending conditions and variables that capture change over time. Dynamic models such as depicted in Fig. 5.2 take into account the importance of temporal sequences in key organizational relationships (e.g., leadership to school processes) as they vary between schools (Wilms, 1992).

Thus, we call attention again to the difference between this model and the model proposed by Bossert and colleagues (1982) in Fig. 5.1. This model seeks to study not only relationships at specific points in time but the changes in relationships over time. The significance of this difference is especially important as we seek to understand the *process of school improvement*. We suggest that quantitative studies of school improvement must employ dynamic models with longitudinal data if we are to leverage a deeper understanding of the role that leadership plays in school improvement.

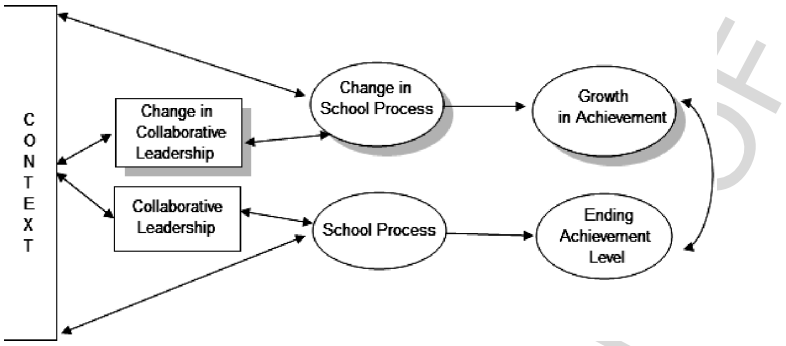

Fig. 5.2 Conceptual model of school improvement leadership and learning

Our Study

As noted at the outset of the chapter, the impetus for this study stemmed from the implementation of a state-level policy that formalized the implementation of standards-based learning and school accountability for the state's schools. The mandate indicated that primary accountability for school improvement continued to lie with school principals. At the same time, even as the policy proposed for principals to play a key leadership role as catalysts for change, it also formalized formal structures intended to create clear roles and responsibilities for planning and executing school improvement activities by a broader set of stakeholders (i.e., parents and teachers). State policies also fostered a normative expectation that principals would develop and validate the distribution rather than the centralization of leadership in the school. The leadership model embedded within the state policy is consistent with what we and the other authors in this volume would term collaborative, coordinating or distributed leadership.

The findings that we report here derive from a series of analyses we conducted on distributed leadership within this state context. It is not the purpose of this chapter to report in-depth findings from this research. Rather it is our intention to provide a synthesis of the major findings and discuss their meaning for scholars, policymakers, and practitioners. Those who are interested in the in-depth research reports are referred elsewhere (Heck and Hallinger, 2008a, b, c).

The research design used employed a post-hoc analysis of improvement in leadership, school processes and student learning outcomes.[1] As suggested earlier, we framed the analyses in terms of dynamic models of school change and improvement and selected analytical methods that were suitable to this approach. We used multilevel growth modeling for studying the changing relationships among school

[1] This chapter is not intended to convey an in-depth description of the research model and process. Instead the chapter synthesizes the main findings. Readers interested in detailed description of the research are referred to Heck and Hallinger, 2008a, b, c).

context, leadership, school process and learning outcomes over a three year period of time.

Data were collected from teachers and students in 200 elementary schools over a three-year period to test these relationships. The study drew a random sample ($N = 13,391$) from a third-grade student cohort that was subsequently observed over a three-year period (i.e., 2004–2006). The data included:

- Background data on student composition such as SES, ethnicity, English language learner etc.
- Data on school process inputs were collected through annual surveys from a sample of teachers at each of these schools over a three years period.
- The outcome data consisted of reading and math tests; notably, the data on each student's annual results were linked to their teachers, thereby allowing for more sophisticated modeling of changes in relationships over time.

Data collected on school processes warrant additional description. These data were collected by soliciting teacher perceptions of key aspects of the school's organization and operation that were believed to be associated with school improvement. These also represented key domains targeted by the state's educational policies, including but not limited to distributed leadership. The school processes were as follows.

- Distributed leadership,
- Standards emphasis and implementation,
- Focused and sustained action on school improvement,
- Quality of student support,
- Professional capacity of the school,
- School communication,
- Stakeholder involvement,
- Student safety and well-being.

Consistent with our desire to test a dynamic model of school improvement, we also included variables measuring *change in these school processes*. We used a school survey to define a baseline (beginning) level of educational processes and distributed leadership for each school. The corresponding seven indicators of school process change within each school during the course of the study were developed by subtracting the percentage of agreement at year one from the percentage agreement at year three. Change in distributed leadership over the length of the study was developed in a similar manner. We proposed that increases in the level of distributed leadership and school processes should be positively associated with changes in student growth.

The primary means of data analysis employed for the purposes of these studies was structural equation modeling. This approach allows us to analyze the static and dynamic portions of the model simultaneously. As suggested earlier in our discussion of dynamic modeling, the ability to describe and measure changes in relationships of variables over time is essential to the study of school improvement. SEM approaches have this capability.

While quantitative analysis proves useful insight into broad trends, we also appreciate the complementary benefits of more in-depth qualitative analysis. Therefore, we also draw upon follow-up case studies of a subset of 21 high-change elementary schools in the larger data base. These schools were identified based on making 20% or more growth in third grade reading proficiency levels against No Child Left Behind (NCLB) standards during the three-year period. This provided an opportunity to study in more detail what some schools did to improve school reading scores.

We reasoned that schools which increased third grade reading scores probably were adopting strategies to increase reading outcomes throughout the school. We wondered whether the student cohort within this set of high-change schools would make exemplary growth in reading against other students in our study and whether stakeholders at these schools would have stronger perceptions about process changes taking place over time than stakeholders in more typical schools.

We found considerable support for these propositions. First, students in these schools had a significantly higher reading growth rate of 13% per year more than students in average schools in the data base. Second, the mean level of process change in these schools was significantly higher (0.32 of a standard deviation) than the grand mean for process change in the full data base of schools.

Results

This study sought to further our understanding of a range of issues related to the development and effects of distributed leadership on school improvement. We pose several questions around which we will frame our presentation of results:

1. Can state policy foster the development of school capacity for distributed leadership?
2. What are the effects of distributed leadership on school improvement processes?
3. What are the effects of distributed leadership on school learning outcomes?
4. What are the roles and effects of the principal in developing a broader and deeper capacity for distributed leadership within the school?

The Policy Context for Developing Distributed Leadership

Our first question asks if state policy makes a difference in the development of school capacity for distributed leadership. The results of this research suggest that it does. Across the 200 elementary schools, there was a statistically significant increase in the perception of distributed leadership in the 200 elementary schools over the three year period. While this study did not employ an experimental design, the use of growth modeling of longitudinal data offers greater confidence than cross-sectional surveys or case studies that systemic change was taking place.

Ron – anything to add here?

Impact of Distributed Leadership on School Improvement Processes

The next question concerns the impact of distributed leadership on key school improvement processes. The reader will recall that our causal model proposed that changes in distributed leadership would be associated with changes in school capacity for improvement. Capacity for improvement was conceptually embedded in a set of core school improvement processes (i.e., Distributed leadership, Standards emphasis and implementation, Focused and sustained action on school improvement, Quality of student support, Professional capacity of the school, School communication, Stakeholder involvement, Student safety and well-being.

The quantitative results confirmed a relationship between distributed leadership and school capacity for improvement. Distributed Leadership was significantly and strongly correlated with Ending School Educational Processes ($r = 0.86$) and Change in Leadership over time was significantly and moderately correlated with Change in the School Process factor ($r = 0.53$). These results provide support for the premise that distributed leadership is an important co-effect of school improvement processes (Heck and Hallinger, 2008b). That is, on average, as the capacity for distributed leadership increased in schools over the three-year period, so did their broader capacity to improve.

This broad finding was reinforced by school portraits drawn from the qualitative data. Content analysis of school narratives found that 71% of the subset of high-change schools indicated that distributed leadership was a key factor in their focus on school improvement and their specific strategy to increase reading levels. As one school's narrative suggested:

> School leadership has done the research to find the quality material to lead the curriculum reform to improve direct services to students. Material selected is supported by training in the delivery of the program. . ..The administrator has procured and provided high quality professional development for the faculty and staff. . ..There has been a continuous progression in understanding the purpose of and use of assessments. . ..Now we continue to work on more frequent and on-going assessments that affect our instruction during the lessons. (School #16, p. 46)

The roles of distributed leadership included examining student success, maintaining a focus on student learning, and creating staff ownership for results. This was emphasized in one of the narrative descriptions of change.

> Throughout all the school's efforts in making student achievement gains in reading, the faculty, staff and community members have come together as a school-wide professional learning community. . ..The school leadership group. . .works together as a collaborative team to facilitate the school's curricular/instructional programs, student support and school operations. . ..At the teacher meetings, the principal meets with the teachers to plan and develop grade level plans, discuss English Language Arts and Math and Science curriculum/instruction, analyze student work, review professional literature, and to hold student case reviews. . ..Family literacy has been the focus of parent workshops and classes. Workshops provide parents with training in supporting the growth and development of their child's love of reading and writing. (School #6, pp. 16–17)

These and similar statements about the linkage between distributed leadership and improved instruction (e.g., alignment of curriculum with state benchmarks, articulation to provide instructional coherence, professional development in reading strategies and assessment) are corroborated by noting that almost 50% of these 21 schools increased 6% or more in distributed leadership over the 3-year period (against only 27% of the other schools in the full data set).

We also compared the correlations between the nine process indicators for this subset of schools against the correlations within the larger data set (not tabled). Most importantly, the correlation between increased distributed leadership and increased implementation of the learning standards was much stronger in these schools ($r = 0.62$) compared with this relationship in the other schools ($r = 0.20$). This former correlation is about three times as strong as the correlation across other schools. Similarly, the correlation between increased implementation of standards-based instruction and corresponding increases in student assessment was stronger ($r = 0.58$) in the subset of schools than in the full data base ($r = 0.28$). As a school narrative noted,

> Our professional development for teachers has largely focused on learning the. . .content and performance standards. We have worked hard to get a clear understanding of the appropriate student performance for each reading standard. Included in this understanding [are] the. . .assessment strategies, best practice instructional strategies and ways to provide intervention for students who struggle to meet the expectation (School #5, p 12).

The integration of quantitative and narrative data suggests in the small subset of schools leadership efforts were more strongly directed at instructional changes and corresponding improvements in assessment than the average schools in the data base. In sum, the development of capacity for distributed leadership did appear to positively impact the school's broader capacity for improvement.

The Impact of Distributed Leadership on Student Learning Outcomes

Research conducted over the past 25 years yields the conclusion that school leadership effects on student learning are largely indirect in nature. That is, leadership exercised by school principals operates through key organizational processes (Bossert et al., 1982; Hallinger and Heck, 1996a, b; Robinson, 2007; Witziers et al., 2003). Moreover, while these effects are rather small, they are both measureable, statistically significant and potentially important within the scheme of alterable school-level variables (Leithwood et al., 2004, 2006). While we have developed increasing levels of confidence in the above conclusion, similar evidence concerning the effects of distributed leadership remains scarce (e.g., Marks and Printy, 2003; Mulford and Silins, 2003). The present research seeks to add to this knowledge base.

The findings reported above confirmed that distributed leadership was significantly linked to important school processes. These school improvement processes

were, in turn, significantly correlated with ending levels of reading and math achievement levels. This finding of indirect effects of distributed leadership on important school improvement process variables and learning outcomes was confirmed by further analyses conducted in the dynamic portion of the model. That is, Changes in Distributed Leadership were significantly related to Changes in School Processes which were positively related to Growth in Student Reading and Math Achievement (Heck and Hallinger, 2008a, b).

Thus, both sets of analyses confirm that Collaborative Leadership was directly related to important school improvement process variables and indirectly to math achievement outcomes. While the size of these indirect effects of leadership on learning outcomes may be considered small, the effects are potentially meaningful. This dual approach to analysis establishes greater credibility in the proposed linkages between collaborative leadership, important school-level variables and student learning outcomes.

The Roles and Effects of Principal Leadership

The last question posed for the purposes of this chapter centered on the role and effects of the principal in school environments where there is increasing emphasis on the distribution of leadership. We should note that the nature of our data set limited the ability to address this question directly. We did not have a separate measure of the principal's leadership. Therefore, we approach this issue indirectly by examining the effects of principal turnover in the quantitative and qualitative data sets (Heck and Hallinger, 2008a).

Almost half the schools had the same principal over the 3-year period (against 26% of the other schools). As one school noted, "The stability of our administration and teaching staff was a critical factor helping to mitigate the enormous requirements and challenges imposed on the school system by both the federal and state Department of Education" (School #4, p. 9). Nearly two-thirds implemented a school-level structural change to support reading (e.g., setting aside time blocks during the day, looping younger students with the same teachers for two consecutive years).

About 75% of the schools also mentioned considerable success with school-wide efforts to involve parents in their children's reading progress. Some of the strategies used included holding school meetings and classes, having parents read in evenings with their children, having student logs for nightly reading signed by parents, and increasing home-school communication. These types of school-level changes require a certain level of stability in school-level leadership in order to be sustained over time (Hall and Hord, 2001).

More broadly, we observed that principal stability (i.e., having the same principal over the three-year period) had a small but statistically significant effect on Ending School Processes. Having the same principal in the school was also positively correlated with stakeholder perceptions concerning the presence of distributed leadership.

Stated differently, stakeholder perceptions of distributed leadership in the school at the end of the three years were significantly higher in schools where the same principal had been present over the three years of the study.

When analyzing the impact of principal stability in terms of changes in the school rather than at the end point alone, an interesting dynamic emerged. We found that while principal stability was *not* directly related to changes in school processes, there was an interesting relationship between the school context, principal stability and on changes in school processes. More specifically, in schools with more challenging contexts (i.e., greater percentages of low SES students, minority students, and students receiving English language services), principal stability had a significant relationship with positive changes in school processes. The same significant interaction effect was not observed across the sample as a whole. While this finding was somewhat unexpected, it is potentially important.

Conclusions

This chapter explored the role of distributed leadership in school improvement. We employed three main approaches to data analysis to address these questions. First, we modeled the effects of the school context, distributed leadership, and key school improvement processes on reading and math achievement over three years.[2] Second, we modeled the *change* in these key variables with corresponding *changes* in achievement year-by year over the same three-year period. Third, we analyzed qualitative data on a subset of high change schools that improved beyond the level of other schools in reading outcomes.

The results support the view that distributed school leadership and a set of key educational processes are related to school improvement in several ways that are consistent with the proposed theoretical model. First we note that the Ending School Process factor was significantly related to Ending Math Achievement. Second, the Change in Process factor had significant effects on Student Growth in Math. With respect to the Change in Process factor, we noted that two components in particular – Professional Capacity and Sustained Focus on Improvement – contributed the most in terms of explaining student *growth* in math achievement. These findings suggest the identification of a rather robust set of policy-driven, school-level factors that are related to student achievement in meaningful ways.

Up until the turn of the 21st century, most research on school leadership focused on the principal. In the subsequent years, scholars have made a logical case for distributing leadership more broadly in schools (Gronn, 2002; Harris, 2003; Spillane, 2006, Spillane et al., 2004). Researchers have also begun to conduct empirical research that draws upon conceptualizations of leadership as a distributed process

[2] Although this report focused solely on the results for math outcomes, we noted that results for reading outcomes were remarkably similar for the model's theoretical components. That is the results for reading achievement were very similar concerning the relationships among Distributed Leadership, key School Processes, and Reading Achievement.

in schools (e. g., Marks and Printy, 2003; School of Education and Social Policy, 2004). In this study we sought to extend the knowledge base on collaborative or distributed leadership through an empirical study of a live policy initiative designed to foster more distributed leadership in schools. Our report has focused on understanding both the effects of distributed leadership on school improvement and the role played by principals in an environment where there is an explicit expectation that leadership responsibilities will be shared.

Although our findings are bounded by limitations inherent in the techniques employed we offer several implications relevant to researchers, policymakers and practitioners. First, with respect to researchers in the domains of leadership effects and school improvement, our study demonstrates the utility of longitudinal studies. Indeed, the robustness of our results would no doubt be strengthened by several additional waves of data in our time series. Nonetheless, the ability to test static and dynamic models simultaneously represents a significant advance that provides a foundation for future research in this area. Notably, only the state education department's willingness to cooperate with research made this longitudinal approach possible.

We should also take note of how this research has altered our own view towards the study of leadership processes in schools. Publication of a series of influential reviews of research on school leadership in the early 1980s (Bossert et al., 1982; Bridges, 1982; Leithwood and Montgomery, 1982; Pitner, 1988), gave impetus to the more systematic empirical study of school leadership effects. Subsequent reviewers have suggested that progress has been made at identifying the and specifying the indirect nature of principal leadership effects (e.g., Hallinger and Heck, 1996a, b, 1998; Leithwood et al., 2004; Robinson, 2007; Witziers et al., 2003). Yet, nagging problems have remained.

For example, while the vast majority of leadership studies in education focused on the principal, we must acknowledge that the reality of leading schools requires a broader set of leadership resources. It may be the case, that some of the "nagging problems" that have accompanied studies of school leadership effects arise from the fact that we have only been measuring an important but incomplete portion of the school's leadership resources. Thus, future research would do well to assess the contribution of leadership contributed by the principal as well as by other key stakeholders.

Second, with respect to policy, the research begins to validate the viability of a set of key educational processes that can be linked to school improvement. More specifically, the research supports the strategy advocated by Fullan (2006) that aims to build professional and leadership capacity in schools. This study adds to a small but growing body of empirical research that finds positive effects of collaborative or distributed leadership on school improvement processes and outcomes. While the finding on principal stability awaits verification through more explicit study and analysis, it should nonetheless be of interest to policymakers who manage the selection and assignment of principals to schools.

Finally, with respect to practice, this research should give encouragement to superintendents, principals and teachers. Murphy asserts:

> In some real sense, at the school level all change flows through the principal's office . . . That is, principals occupy the critical space in the teacher leadership equation and center stage in the work redesign required to bring distributed leadership to life in schools. (forthcoming)

Our findings provide tentative empirical support. The implementation of policies designed to foster distributed leadership do not appear to lessen the importance of the principal's own leadership role. The task of building professional capacity and distributed leadership requires principal support (Childs-Bowen et al., 2000; Copland, 2003; Murphy, forthcoming; Spillane, ~~1996~~ 2006). Principals and teachers both have important, though perhaps different, roles in leading school improvement. Although the nature of these differences needs to be investigated further, our results suggest that principal leadership remains a key success factor in school improvement, especially in contexts where the challenges are greatest.

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Chapter-5

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