

# School Leadership: A Key to Teaching Quality

A Policy Brief on the Role of Principals  
in Strengthening Instruction

Research conducted by SRI International





The Center for the Future of Teaching and Learning is made up of education professionals, scholars and public policy experts who care deeply about improving the schooling of California's children. The Center was founded in 1995 as a public, nonprofit organization with the purpose of strengthening the capacity of teachers to deliver rigorous, well-rounded curriculum and ensure the continuing intellectual, ethical and social development of all children.

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# PREFACE

For more than a decade, the Center for the Future of Teaching and Learning (the Center) has focused on strengthening the teacher workforce to ensure that all students have the opportunity to meet California's ambitious academic standards. Since 1998, the Center has released annual reports on the status of the teaching profession and has convened policymakers and practitioners in education policy forums to pinpoint key policy levers to strengthen teaching quality.

In recognition of the critically important role that principals play in ensuring both student and teacher success in school, the Center began incorporating data on education leadership into these reports, and in the spring of 2010, convened the first policy forum on leadership entitled *Strengthening Teaching Practice: The Role and Responsibilities of School Site Leaders*. Forum participants included teachers, principals, superintendents, policymakers, and researchers. Their charge was to build consensus on what policymakers must know about school site leadership in order to ensure an adequate pool of effective leaders capable of guiding and supporting high quality teaching practice. Further, the Forum members were tasked with framing a research agenda for future work that would provide members of the education and policy communities, education support organizations, philanthropy and others with information needed to provide support for school leaders.

This policy brief is an important component of the Center's continuing efforts to strengthen teaching quality through effective school site leadership. The document is based on the deliberations of the Forum participants as well as a review of the literature on school leadership and the secondary data available through the state's data system. The issues and questions raised in these deliberations will form a significant portion of the Center's research agenda for 2011.

# STRENGTHENING TEACHING PRACTICE: THE ROLE AND RESPONSIBILITIES OF SCHOOL SITE LEADERS

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# THE RAPIDLY EVOLVING FISCAL AND POLICY CONTEXT

California's schools are in the midst of a financial storm with no clearing in sight. Since 2007–08, there have been well over \$20 billion in cumulative cuts to K-12 funding. State budget cuts have been somewhat offset by more than \$9 billion in supplementary federal dollars, but there is little prospect that these supplementary funds will be available in future years.

The education policy context is similarly chaotic. In anticipation of its application for the Race to the Top competition, California passed new legislation raising the cap on charter schools, adopted the Common Core Standards, and proposed fundamental changes in teacher evaluations, including incorporating the use of student achievement scores. What will come of these proposals now that the state lost the federal competition is unknown, especially at a time of leadership turnover in Sacramento.

Despite the challenge of severe cuts to public education, all California schools are still required under federal mandates to have 100% of their students proficient in mathematics and English language arts by 2013–14. As of spring 2010, 52% of students were proficient in English language arts while 48% tested proficient in mathematics. Moreover, all California students are being held accountable to pass the California High School Exit Exam to receive a regular diploma.



# AT THE CENTER OF THE STORM: TEACHERS AND PRINCIPALS

**T**he consequence of these fiscal and policy forces is the demand that schools do more with less. Class sizes are up, district support for instructional improvement is severely diminished, support personnel like counselors are being cut, and educators are concerned about additional layoffs. More and more, teachers and principals are left to shoulder the responsibility of meeting rising accountability targets with leaner staffs and shrunken budgets.

It is teachers, of course, who in the end bear the greatest burden. With less access to external support, more students, and increasing public scrutiny, teachers find themselves in the midst of a battle without adequate resources.

However, it is school principals—as the front-line administrators who manage the scarce remaining resources—who hold the keys to maintaining and increasing their schools’ effectiveness through this crisis. In addition, principals play a key role in maintaining morale in these tough times; it is up to them to rally teachers, other staff, and the community around common goals.

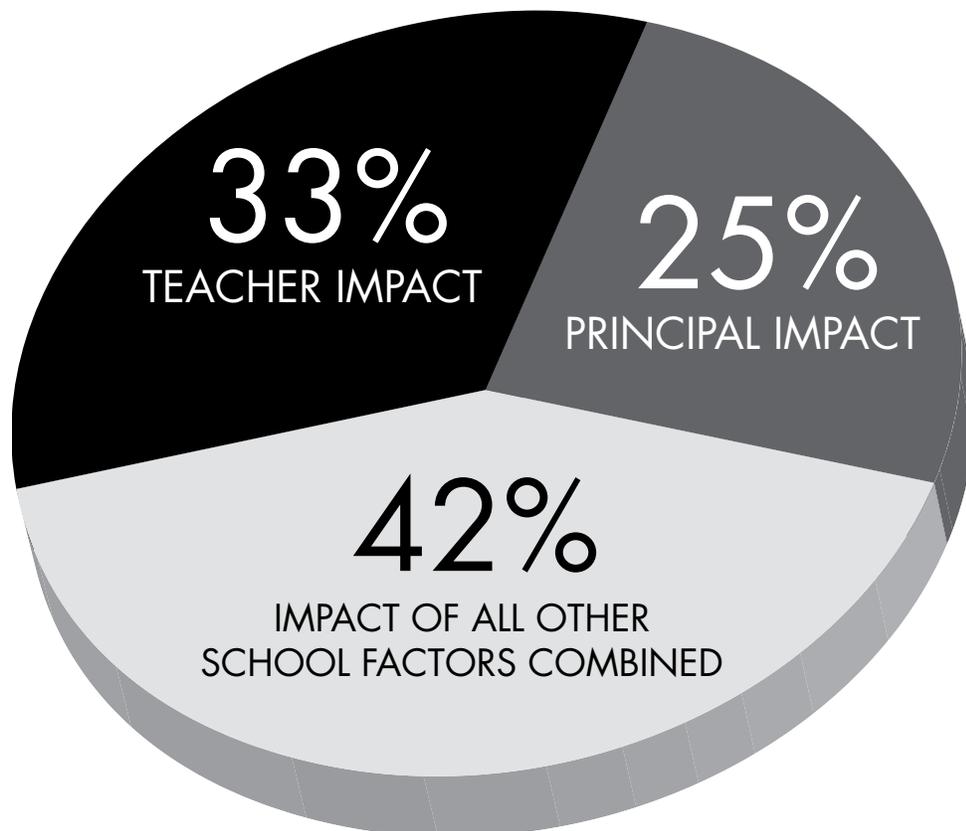
## WHAT RESEARCH TELLS US ABOUT THE ROLE OF PRINCIPALS IN STRENGTHENING TEACHING AND LEARNING

**W**e know that teachers are the most important in-school determinant of student learning (Hanushek, Kain, & Rivkin. 2005). It is the teacher who organizes instruction, communicates learning goals, assesses students’ progress towards those goals, and adjusts the content and interaction of the classroom in response.

However, if all students are to reach proficiency, California needs effective schools, not just effective classrooms. If a student moves from the classroom

of an effective teacher to that of an ineffective one, their achievement gains are typically negated (Kane & Staiger, 2008; Sanders & Rivers 1996). Conversely, if a student is placed in the classrooms of effective teachers in consecutive academic years, their achievement is far more likely to accelerate. Further, teachers are more effective when their peers are more effective; indeed, teachers consistently report that peers have the greatest impact on their practice. Consequently, it is the collective community of teachers, led by the principal, that is key to promoting schoolwide learning. In fact, empirical research shows that among the many individual in-school factors that influence student achievement, two stand out. As Exhibit 1 demonstrates, teacher impact is the single most important factor, accounting for 33% of school-level variation in achievement, closely followed by the influence of the principal at 25%. A host of other school-level factors, some of which cannot be adequately measured, account for the balance of 42%.

### Exhibit 1: Teacher and Principal Impact on Student Learning



Source: Walters, Marzano & McNulty, 2003.

But what is it that principals do to promote learning and support teachers? Over 25 years of research on effective schools has underscored the central role that school leaders play in creating the conditions and norms necessary to create such schools (e.g., Purkey & Smith, 1983). Leaders must build collaborative structures and cultures of trust. They must create high expectations for adults and students alike. They need to provide support for educator learning and establish structures and deploy resources in support of student learning. We discuss each of these briefly.

**Creating opportunities for collaboration and building a culture of trust.** A common assertion is that principals need to be instructional leaders. This notion conjures up an image of a principal with extensive subject matter knowledge and broad command of instructional strategies who visits each classroom in a school and models effective teaching practices. While such an approach may be appropriate in some cases, it is an unrealistic expectation in most schools because of the breadth and complexity of the instructional program. Moreover, research shows that principals' most important impacts on student learning and teacher practice are indirect (Hallinger & Heck, 1996). Principals influence learning by creating working conditions in which motivated teachers are provided the opportunity to work as professionals (Louis et al., 2010). In essence, effective leadership means creation of an effective, high-functioning professional community.

Teachers typically improve not because they are “taught” to teach more effectively by principals; rather, they learn from other sources, including teachers and expert coaches. School leaders need to build a culture of trust in schools so that adults open their practice to one another and can learn from their peers. To accomplish these goals, principals must create structures to allow for such collaboration, such as common planning time, opportunities for peer observation, and focused cross-grade meetings.

***In essence, effective leadership means creation of an effective, high-functioning professional community.***

**Creating high expectations for adults and students alike.**

Such collaborative structures work best, and teachers are most motivated, when school leaders create high expectations for student learning. Just as important are expectations for adult behavior and responsibility for that learning. In short, teacher collaboration and professional communities need to be rooted in a school climate that “encourages levels of student effort above and beyond the levels [that might otherwise] be encouraged in individual classrooms” (Louis, et al., 2010: 37). Research has long supported the conclusion that schools in which students excel academically are characterized by shared expectations among administrators, teachers, students, and families about the centrality of student learning (Hill, Foster & Gendler, 1990). The role of principals here is to create high performance expectations, communicate those goals, and foster group acceptance (Fullan, 2003).

**Supporting educator learning.** In effective schools, adult learning is a high priority along with student learning. If teachers are going to continually hone their craft, they need access to new ideas and sources of expertise, including high-quality professional development that is informed by student data and linked to continuing growth spanning a career. The exact nature of these building blocks of expert instruction will vary by school and by individual teacher. It is part of the principal’s role to work with staff to gauge the learning needs of the staff and to make resources (e.g., time, money, space) available to support that learning. The goal of such learning opportunities is both to build the capacity of teaching staffs at large and the self-efficacy of individual teachers, which is intended to reinforce the motivation of these teachers to persist in putting those skills into practice (Louis, et al., 2010). Such a focus on adult learning also goes part and parcel with building a professional culture of trust and high expectations for all.



**Allocating resources in support of learning.** Establishing high expectations for student and adult learning must be accompanied by the allocation of resources in support of that learning. How limited time, fewer dollars, and diminishing staff—as well as space and equipment—are allocated within a school should be driven primarily by what will best support student learning. This criterion is broad enough to include the use of resources to support teachers in their efforts to assist students in reaching their highest potential.

Teachers consistently report that school working conditions are not only central to their own decisions about where to teach, but also influence the effectiveness of their teaching to raise student achievement. By addressing working conditions, then, principals can improve outcomes for both students and teachers. Examples of supportive working conditions include a clean and safe environment, focused time for collaboration, uninterrupted time to teach, and the availability of appropriate supplies and materials.

These four factors—collaboration, high expectations, professional learning and effective resource allocation—are obviously interrelated. The same structures that provide support for teacher learning (e.g., common planning time) also provide opportunities for collaboration and promote a culture of trust. High expectations coupled with organization of resources in support of student learning help to motivate staff and students alike. In fact, as noted above, principal leadership affects student achievement most directly through its impact on supportive working conditions and the concurrent motivation of teachers.



# WHAT POLICYMAKERS AT ALL LEVELS CAN DO TO STRENGTHEN SCHOOL LEADERSHIP

**G**iven the central role of school leadership in the currently chaotic fiscal and policy environment, what can policymakers do to strengthen school leadership in California? The members of the policy forum on leadership considered this question and identified one overarching principle related to equity and context. They then suggested a set of leverage points where the education leadership development system could be strengthened. We discuss these below.

## Carefully consider context and equity

Forum members recommended that any policy initiatives or new programs targeted at strengthening school leadership recognize the importance of context and equity. They consistently emphasized that the dispositions and skills that make a principal effective in one context may not result in similar effectiveness in another. Elementary schools have different demands than do middle or high schools, for example. Furthermore, motivating all students to achieve—and motivating all teachers to support their students’ learning—may be more challenging in some schools than others. In some schools, students may have specific needs (e.g., a high proportion of English learners), and so teachers need certain aligned support from principals that would not be as critical in other schools. Similarly, approaches to reaching out and communicating with families may differ across schools. Resources, equipment, and space are more plentiful in some schools than others. Working conditions and their impact on teachers also vary widely.

As these factors vary, so do the demands on principals. Of particular concern to Forum members were the equity issues associated with demands on principals in high-poverty schools. In order to create effective learning environments in such schools, principals were seen as being asked to do much more than their counterparts in schools serving more advantaged students and to achieve those results far more quickly. Furthermore, high-poverty schools often serve both an education and a social service function, and providing students (and their families) social services of various kinds is frequently a powerful approach to keeping

students' learning on track and developing shared understanding between families and schools. The salutary effect of multiple community services, however, does not lessen the fact that principals have a much bigger job in these schools.



In fact, this enriched environment often adds another layer of complexity to managing staff and working with students and their families.

## High leverage point #1: Strengthen teacher evaluation

The Forum members shared the view that the current system of evaluating teachers was an ineffective mechanism for strengthening teaching quality. Currently, teacher evaluation is typically a compliance-oriented, rote process that provides little substantive support to teachers. Our own research has shown that teachers learn little from the process and want an evaluation system that would help strengthen their practice (Wechsler, et al., 2007). Most often, evaluations pay scarce attention to student learning or do not connect that learning to elements of teacher content knowledge or instructional skills that could be improved (see also National Board Resource Center, 2010).

Consequently, Forum members argued for a wholesale reinvention of teacher evaluation, calling for a focus on student learning connected to teaching with the goal of improving both. Specific components of an improved evaluation would include:

- Making teacher evaluation multi-dimensional, including student performance assessments and outcome measures.
- Strengthening the training that principals and others receive to conduct evaluations.
- Increasing the amount of time principals or others have allotted for conducting evaluations.

- Tying evaluation results directly to substantive feedback to teachers and linking these results to a wide range of professional development opportunities to strengthen practice.
- Establishing links between already available assessments (e.g., Teacher Performance Assessment, Formative Assessment for California Teachers, National Board Certification) for the purpose of maintaining a continuous pathway for professional growth and development over the span of a career.

## High leverage point #2: Improve the system of evaluation and support for principals

Forum members also characterized principal evaluations as often too perfunctory, not tied in any way to principals' support of teachers to improve student learning, and not designed to help principals improve their practice. Members thus concluded that reforms similar to those desired for teacher evaluations were needed for the system of principal evaluations, including additional training and time for district personnel to support principals.

Forum members argued that improvement of principal evaluation should be seen as one element of a larger system of education leadership preparation and support—and that the entire system needs similarly thorough improvement. The argument states that the currently isolated components of school leader development, including preparation, induction, evaluation, and professional development, need to be retooled to become elements of a cohesive *system* that supports school leaders to be more effective in supporting student learning. Members emphasized that focusing on single components of the system (e.g., better recruitment) and focusing on individuals (principals) without attending to the entire system will not lead to desired outcomes.

Suggested approaches raised by Forum members included:

- Increasing cooperation between principal preparation programs and local school districts.
- Developing an evaluation system for principals that includes multiple measures reflecting the complexity of their leadership role and is linked directly to opportunities to improve their practice.
- Ensuring that personnel policies support the selection and retention of staff members who best fit the needs of the school.

- Providing incoming principals with formal mentoring from more experienced and highly effective school leaders.
- Ensuring that principals have access to worthwhile, iterative opportunities for professional development informed by evaluations across their careers.
- Creating professional learning communities for principals that allow for communication and collaboration across schools.
- Systematically analyzing the causes of high principal turnover and develop support and professional development programs that can mitigate the problem.

### **High leverage point #3: Identify models of effective school leadership teams**

Given the myriad challenging roles that principals are asked to play in a school, Forum members expanded their discussion of effective leadership beyond the principal to focus on the benefits of school leadership teams. Principals are expected to simultaneously manage resources (including dollars, space, equipment, and time), lead personnel, and deal effectively with the larger community, all while giving the highest priority to teaching quality and student



performance. These responsibilities have only been magnified by the current political and budgetary context. One strategy for addressing this challenge is the building of leadership teams, which provide opportunities for adults throughout a school to have input into key decisions and to share responsibilities.

Specific suggested approaches included:

- Creating clearly defined supporting roles for other adults in the building focused on tasks not directly related to instruction.
- Creating teams of teacher leaders who help guide instructional improvement in the school.
- Taking advantage of community resources where available, including families.

Research has found that higher-performing schools provide greater autonomy and authority to teacher teams, parents, and students. Collective leadership has a stronger influence on student achievement than individual leadership (Louis, et al., 2010).

## High leverage point #4: Build a comprehensive data system to guide policy and practice

The Forum members felt strongly that for policymakers to build a comprehensive system of support for the state’s principals, they need access to timely and accurate information about the education leadership workforce. The state’s data collection efforts have allowed for only very basic descriptive statistics about principals, such as how many individuals held a principal position in a given year and their gender, ethnicity, years of educational service, and years of service in the district.<sup>1</sup> State data collection efforts also include information on the number of principals receiving their administrative credential each year and the number of administrative credentials issued through traditional preparation programs as well as those issued as a result of passing an exam.

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<sup>1</sup>In 2008–09, the most recent year for which data are available, there were approximately 8,350 principals in the state with the following characteristics: 60% were female, 78% had a master’s degree, 68% were white, the average years of educational service was 20, and the average years of educational service in their current district was 14. (Note that this number of principals does not include individuals who reported assignments that combined principal with another position such as superintendent or “full-time teaching principal.”)

Unfortunately, the data policymakers need to make informed decisions about the supports principals need—such as data on the career paths of principals or principal mobility in different types of schools or districts—have not been part of state data collection efforts over the years. If policymakers wanted such information, they needed to sponsor specific, one-time studies or rely on outside sources (e.g., philanthropic organizations) to fund the collection, analysis, and/or reporting of critical information on principals. For example, the federally-funded Regional Education Laboratory at WestEd conducted a recent study examining regional labor markets for principals in California. The study found a substantial range in the anticipated need to hire school-site administrators across counties (White, et al. 2009). Projected openings over the next decade ranged from as low as 9% to as high as 71% of individual counties' current school-site administrator workforces, with variation explained by anticipated administrator turnover and projected student enrollment changes.<sup>2</sup> The results of this study are critical if policymakers are to know where limited state resources should be allocated, but this type of analysis was only possible with outside funding and a complicated merging of available state data sets. In addition, the authors note that there are limitations of this study due to the lack of statewide data on important variables such as administrator pre-retirement attrition and supply of new administrators.

To adequately support California principals, the state needs to collect the right types of data on principals—that is, policy-relevant data on topics such as characteristics of the principal workforce and the efficacy of supports that are provided to principals. Unfortunately, California's current statewide data system is focused more narrowly on the collection of only what is required or cost-neutral rather than what can guide improvement—and because principals are not the focus of federal reporting requirements or court settlements, the state's new data system includes very little useful data on principals. Given the tremendous state and federal emphasis on allocating funds strategically in support of improved student outcomes, and given the critical role that school principals play in supporting teachers and students to achieve this end, it is important for the state to provide support for the data collection that will help inform and strengthen principal leadership.

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<sup>2</sup> See [http://ies.ed.gov/ncee/edlabs/regions/west/pdf/REL\\_2010084\\_sum.pdf](http://ies.ed.gov/ncee/edlabs/regions/west/pdf/REL_2010084_sum.pdf)

# NEXT STEPS: THE RESEARCH AGENDA

Forum members concluded their work with a focus toward the future and the kind of research needed to fill in the gaps in our knowledge of leadership that would serve to make schools stronger. Specific research questions that emerged were:

1. What are the characteristics of the state's principal workforce (e.g., tenure in the school, educational background, prior experience) that are of interest to policymakers but cannot be found in existing databases?
2. How do these characteristics vary across principals in schools representing a range of poverty, ethnicity, and achievement levels? How do they vary across school types (e.g., elementary/secondary)?
3. What do teachers and principals perceive as a principal's most important responsibilities? Do principals feel prepared to take on these responsibilities? How do principals balance the competing demands they face?
4. How have recent budget cuts and policy shifts affected the core task of teaching and the role of principals? What role have principals played in managing these implications?
5. What existing statutes, policies, and programs encourage the training of school and district leaders to support teacher development and teacher quality?

During the 2010–11 school year, the Center will tackle these questions through an analysis of secondary databases and original data collection within the context of the Teaching and California's Future initiative.

# REFERENCES

- Center for the Future of Teaching and Learning. (2009). *Strengthening California's system for preparing and supporting principals: Lessons from exemplary programs*. Santa Cruz, CA: Author.
- Fullan, M. (2003). *The moral imperative of school leadership*. Thousand Oaks, CA: Corwin.
- Hallinger, P., & Heck, R. (1996). The principal's role in school effectiveness: An assessment of methodological progress, 1980-1995. In K. Leithwood & P. Hallinger (Eds.), *International handbook of educational leadership and administration* (pp. 723-783). Dordrecht, NL: Kluwer.
- Hanushek, E. A., Kain, J. F., & Rivkin, S. G. (2005). *Teachers, schools, and academic achievement*. *Econometrica* 73(2).
- Hill, P.T., Foster, G.E., & Gendler, T. (1990). *High schools with character*. Santa Monica, CA: RAND.
- Kane, T. J., & Staiger, D. O. (2008). Estimating teacher impacts on student achievement: An experimental evaluation. Cambridge, MA: National Bureau of Economic Research.
- Kearney, K. (2010). *Effective principals for California schools: Building a coherent leadership development system*. San Francisco, CA: WestEd.
- Louis, K.S., Leithwood, K., Wahlstrom, K.L., & Anderson, S.E. (2010). *Investigating the links to improved student learning: Final report of research findings*. St. Paul, MN: University of Minnesota.
- National Board Resource Center (2010). *A quality teacher in every classroom: creating an evaluation system that works for California*. Stanford, CA: Author.
- Purkey, S.C., & Smith, M.S. (1983). Effective schools: A review. *Elementary School Journal*, 83(4), 427- 52.
- Sanders, W., & Rivers, J. (1996). *Cumulative and residual effects of teachers on future academic achievement*. Knoxville, TN: University of Tennessee, Value-Added Research and Assessment Center. Working Paper Number 6691. Cambridge, MA: National Bureau of Economic Research.
- Waters, T., Marzano, R.J., & McNulty, B. (2003). *Balanced leadership: What 30 years of research tells us about the effect of leadership on pupil achievement* (A working paper). Aurora, CO: Mid-continent Research for Education and Learning.
- Wechsler, M., et al. (2007). *The status of the teaching profession 2007*. Santa Cruz, CA: Center for the Future of Teaching and Learning.



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