TEACHER PROFESSIONAL LEARNING IN THE UNITED STATES:

Case Studies of State Policies and Strategies

TECHNICAL REPORT

Ann Jaquith, Dan Mindich, Ruth Chung Wei, and Linda Darling-Hammond

STANFORD CENTER FOR OPPORTUNITY POLICY IN EDUCATION

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Teacher Professional Learning in the United States: State Policies and Strategies Technical Report

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Stanford Center for Opportunity Policy in Education

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Overview and Acknowledgements

Teachers are the most important school-related factor influencing student achievement, and how teachers are prepared and supported throughout their careers is vital to their success. Learning Forward (originally the National Staff Development Council) and the Stanford Center for Opportunity Policy in Education are involved in a multi-year effort that tracks states' progress in teacher professional development and identifies policies and practices that offer promising lessons. The study is one of the most comprehensive yet conducted. The following reports have been released through this study:

Phase I, February, 2009: *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the U.S. and Abroad*

Phase II, August, 2010: *Professional Development in the United States: Trends and Challenges*

Phase III, December 2010: *Teacher Professional Learning in the United States: Case Studies of State Policies and Strategies*

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This report would not have been possible without the countless hours devoted to its design and layout by Barbara McKenna at the SCOPE and Shep Ranbom, Kari Hudnell, and the rest of their staff at CommunicationWorks, for editorial guidance and for leading the communications effort. We thank the Board of Trustees of Learning Forward for its vision and advocacy for this study.

Finally, we would like to express our appreciation to our families who supported us through the course of this important work.

Preface

Teacher Professional Learning in the United States: State Policies and Strategies

Stephanie Hirsh, Executive Director
Learning Forward

High-achieving students emerge from a complex system of support that weaves together to build a strong fabric. That system includes effective teaching and leadership at the school and district level; rigorous curriculum, ongoing assessment for and of learning, continuous professional development for educators; family and community engagement; and conditions within schools and communities that ensure safe and productive learning environments for students and educators. This complex system exists in many communities and is missing in others.

Of the many elements that comprise this complex system, effective teaching has risen to the top as the most important followed by strong leadership. For the nearly 75% of the educators working in schools today beyond their novice years, professional development is the single most important strategy for extending and refining their knowledge, skills, dispositions, and practices throughout their careers. For those who are new to positions, strong preparation programs establish the foundation for success.

State policies and practices on career-long professional development for educators have the potential to strengthen both the effectiveness of and the access to professional learning that ties directly to improving educator practice and student achievement. This third study in the series of three studies on the state of professional development in the United States examines state policies and practices of four states making progress in two factors, access to professional development as defined by the Professional Development Access Index and student achievement as measured by the National Assessment of Educational Progress.

In 2007 the Board of Trustees adopted a new strategic plan and within it five strategic priorities. The first priority focused on affecting policy and the second focused on examining the evidence. They understood that better policy promotes better results and making evidence accessible influences future decision making. This report addresses both their priorities. By examining policies and practices in Colorado, Missouri, New Jersey, and Vermont, other state policy and decision makers and as well as those in local districts will be able to compare their current policies about professional development with these states and consider what more they can do to strengthen the expectation for, support of, and accountability for effective professional learning for all educators throughout their careers.

I am deeply grateful to the Bill and Melinda Gates Foundation for its generous support of the series of studies on the state of professional development in the United States. I want to particularly acknowledge Vicky

Phillips and Patricia Loera, whose insights and questions brought new perspectives on the study. I appreciate the expertise of the research team for this study led by Ruth Chung Wei that included Ann Jaquith, Dan Mindich, and Linda Darling-Hammond from the Standard Center for Opportunity Policy in Education (SCOPE) whose efforts uncovered important characteristics these states share in common. The editorial and design team working with SCOPE is responsible for making this report attractive and accessible.

Contributors and reviewers who helped shaped this work include Karen Seashore-Louis, Thomas Guskey, and M. Bruce Haslam. I am thankful for their ideas and reviews. Sheppard Ranbom and Kari Hudnell from CommunicationWorks, LLC, prepared the summary report and offered editorial guidance and dissemination support during this series of studies. Joellen Killion's, deputy executive director, insights, experiences, and leadership ensured that the reports would serve practitioners and the projects would be completed as promised. And once more thank you to the Learning Forward Board of Trustees for supporting the concept of the study and encouraging us to see it through to fruition.

Continuous professional development for all educators leads to increases in student achievement. It is too important a contributing factor to leave to chance. Strong state policies about effective professional learning and the necessary resources and leadership to support it will increase its effectiveness and the return on investments in it.

Executive Summary

This report is the third of a three-phase research study of teacher professional learning opportunities in the United States. In the first report (Wei, Darling-Hammond, Richardson, Andree, & Orphanos, 2009), researchers examined research on effective professional development and evaluated how teachers' professional learning opportunities in the United States and abroad measure up against those standards. This report found that opportunities for sustained, collegial professional development of the kind that produces changes in teaching practice and student outcomes are much more limited in the United States than in most high-achieving nations abroad.

The second report (Wei, Darling-Hammond, & Adamson, 2010) examined trends in U.S. teachers' opportunities for professional learning based on data from three federal Schools and Staffing Surveys (2000, 2004, 2008). The study found that, while there had been clear progress in some areas—for example, a steady increase in access to induction and mentoring for beginning teachers—most teachers continue to have limited opportunities for sustained, ongoing forms of professional development. Indeed, by 2008, fewer teachers had access to intensive professional learning opportunities on most topics than was true several years earlier. Furthermore, only 15% of teachers reported being in collaborative work settings, half as many as a decade earlier. This study also found, however, that opportunities for professional learning vary widely across states, and that some appear to support more available and intensive professional development than others.

In this third phase of the research, we conducted case studies of four professionally active states to get a deeper look at the policy frameworks that support professional development in those states. These states—Colorado, Missouri, New Jersey, and Vermont—have made significant gains in student performance on the National Assessment of Educational Progress, scoring above the national average, and showed evidence of high levels of teacher participation in professional development in the 2008 National Schools and Staffing Survey (NCES) or on other indicators of access to professional learning. The states represent pockets of promising practice, having created environments in which innovative approaches to school and instructional improvement have gradually gained a foothold.

In each state we conducted a review of state laws and regulations, interviews of key personnel from the state departments of education, other state and local agencies, professional organizations, and district- and school-level staff, observations and visits to professional development events or organizations, and document analysis. We examined the *policies* (state statutes, rules, funding allocations, sanctions and incentives), *strategies* (programs, initiatives, campaigns), and *structures* (organizations and partnerships with professional development providers at the state, regional, or local level) built to support local engagement in professional development. We also examined factors that may be associated with the success of those strategies, and challenges and impediments to the provision of effective professional development. In each case,

we looked broadly at the *professional development landscape* in the state—the array of supports and activities that exist beyond the actions of state policymakers—to gain a full and rich picture of the contexts in which state and federal policies operate.

Key Findings

Across the four states, we found varied approaches to professional development policy and implementation, including differing levels of support and control at the state level and divergent strategies for monitoring and promoting professional development activity at the local level. But these states shared some common strategies for leveraging professional development access and quality, including:

Developing standards to guide accountability. State education agencies in these states provided strategic guidance and oversight by developing professional development standards to guide re-licensing and professional development offerings, and by establishing district and school committees to oversee professional development at the local level. Individually, these policies exert modest leverage, but when taken together, they can create a coherent system of policies and mechanisms for enforcing, monitoring, and enabling policy implementation at the local level.

Monitoring quality. Three of the four case study states have established mechanisms for monitoring both the level of participation and quality of professional development through surveys or studies that assess the usefulness and effectiveness of professional development.

Requiring induction and mentoring programs. All four of the states require mentoring or induction programs for beginning teachers. Colorado, Missouri, and New Jersey require successful completion of such programs before teachers can receive a professional license, and embed mentoring in teachers' individual professional development plans.

Leveraging collegial strategies for professional learning. The states used the policy tools at their disposal to leverage staff collaboration as a strategy to increase teacher capacity and improve student outcomes, often in the form of professional learning communities (PLCs)—collaborative teams which focus on professional development and key school improvement initiatives. All four states sought to move professional development from the individual "sit and get" model to a more collective model embedded in the work teachers do with their students and with one another.

Partnering with professional organizations. These professionally active states partnered with universities and professional organizations, particularly when focusing on specific subject area initiatives, as they created an infrastructure to support professional development. To extend their capacity and influence, state agencies reached out to organizations that could foster innovation in professional development offerings.

Creating networks of intermediary organizations. Across the four states, networking with intermediary organizations has emerged as a common strategy for providing instructional program supports to schools. These closer-to-the-ground organizations are able to provide assistance to schools and districts in a way that the state departments cannot. They often act as a "sense-making filter" that links state goals with those charged with carrying them out, and create professional development

capacity—offering expertise, coordination, coaching, and other supports.

Addressing federal mandates and accountability requirements in constructive ways. Each of the case study states has benefited from federal resources under No Child Left Behind, which provided funding that would not otherwise be available for instructional improvement in high-need schools. While taking advantage of these resources, all four states have leveraged federal policy productively to support high-quality learning in collegial contexts, without restricting their focus to narrow types of instructional improvement defined only by basic skills test scores.

Skillfully marshalling resources. Historically, these states have made important resource commitments to professional learning. While all have lost some ground in the current budget-cutting climate, they have skillfully leveraged and integrated federal funding and other local resources, including the expertise of their professional development partners, to sustain progress.

In sum, we found that access to high-quality professional learning is fostered by state policies and systems that create standards and a framework for accountable professional development, monitor quality, and create an infrastructure for professional development by orchestrating the work of intermediary organizations that offer expertise and build capacity at the local level.

Policy Implications

While we cannot claim a causal link between the robustness of the policy frameworks in the four states studied in this report and increases in student achievement, education leaders and policymakers can draw from these experiences some valuable insight into policy levers that may be effective in their states. This research suggests that a number of elements may be important to state success in building strong opportunities for professional learning, including:

1. A common and clearly articulated vision for professional development that permeates policy and practice;

2. Effective monitoring of professional development quality;

3. Mentoring and induction requirements that are linked to and create a foundation for ongoing professional learning;

4. An infrastructure of organizations for facilitating professional development; and

5. Stability of resources.

While state policy can be a potent lever for mandating and enforcing professional development requirements, it is a rather blunt instrument when it comes to the provision of high-quality learning for teachers. These states created a vision for professional development through their creative use of standards to guide licensing and school planning and developed an infrastructure for implementing this vision by orchestrating the efforts of intermediary organizations, universities, and professional organizations to strengthen state and local capacity. They provide useful lessons for how states can lead and encourage innovative learning opportunities for both students and teachers.

Teacher Professional Learning in the United States: State Policies and Strategies

Case Studies of Four Professionally Active States

Ann Jaquith, Dan Mindich, Ruth Chung Wei, and Linda Darling-Hammond[1]
(Stanford University)

In the last decade, policymakers, researchers, and practitioners have come to the same conclusion: teacher effectiveness is a key factor in improving academic outcomes for students. There is also some recognition that teachers need greater access to high-quality professional development to improve their instructional practice, and therefore student outcomes. Considerable resources are expended toward this end. Since the enactment of No Child Left Behind (NCLB) in 2001, Title II has directed nearly $3 billion annually to states and districts to improve teacher qualifications and teacher quality, among other uses. In 2009, the U.S. Department of Education reported (from a federal survey of a representative sample of 800 districts) that 39 percent of Title IIA spending in 2008–09 was used for the professional development of teachers, paraprofessionals, and administrators (U.S. DOE, 2009). Almost all states have laws on their books that require teachers to work toward a minimum number of continuing education credits to renew their license. Some states provide funding for local districts to implement professional development programs. Many states require and sponsor new teacher induction and mentoring programs.

However, according to national survey data (Schools and Staffing Survey (SASS), 2004, 2008), access to and participation in professional development varies widely across states (Wei, Darling-Hammond, Richardson, Andree, & Orphanos, 2009; Wei, Darling-Hammond, & Adamson, 2010), and although there are pockets of promising practices across the country, the quality of much professional development across states is far from meeting research-based definitions of "effective" professional development. It is unclear what state and national policies are associated with access to effective professional development at the local level, and in fact whether existing policy tools are adequate for promoting access to effective professional development. Some scholars suggest that the state's roles and strategies for promoting professional learning need to be reconceptualized (Elmore & Fuhrman, 1993) so that the teaching profession itself can build the structures, norms, and culture of professional learning in its ranks (Cohen & Hill, 2001; Darling-Hammond, 2010).

In this study, we look into those "pockets of promising practices" and examine the policies and professional development strategies of a few "professionally active" states through case studies. We selected four states on the basis of several possible criteria: evidence of a high level of teacher participation in professional development on the

[1] *The coauthors are equal collaborators in writing this report.*

2008 National Schools and Staffing Survey (NCES) and the teacher surveys associated with the 2009 National Assessment of Educational Progress (NAEP); a reputation in the literature for enacting reforms that are consistent with the research base on "effective" professional development; and improvements in student achievement on the National Assessment of Education Progress (2009).

We define *effective* professional development as that which leads to improvements in teacher knowledge or practice, or in student learning outcomes. Several criteria emerged in a previous review of the research literature on features of effective professional development that was conducted in the first phase of this research project (Wei et al., 2009). Research suggests that effective professional development is:

- Focused on specific curriculum content and pedagogies needed to teach that content effectively
- Designed to engage teachers in active, collegial learning that allows them to try out ideas in the classroom and make sense of what they are learning in meaningful ways
- Presented in an intensive, sustained, and continuous manner over time (with an average of about 50 hours or more on a given topic associated with changes in practices that produce gains in student achievement)
- Linked to analysis of teaching and student learning, including formative use of assessment data
- Supported by coaching, modeling, observation, and feedback
- Connected to teachers' collaborative work in school-based professional learning communities and learning teams
- Integrated with other school-level policies or reforms, so that there is a coherent approach to curriculum, instruction, assessments, and professional development

The goal of this study is to deepen our understanding of the kinds of policies and strategies that lead to a high level of participation in professional development at both state and local levels. In these case studies, we investigate the specific approaches that state education agencies use to improve instruction through *policies* (state statutes, rules, funding allocations, sanctions and incentives), *strategies* (programs, initiatives, campaigns), and *structures* (infrastructures, organizations, partnerships with professional development providers at the state, regional, or local level) built to support local engagement in professional development.

We examine factors that may be associated with the success of those strategies, and challenges and impediments to the provision of effective professional development. In each case study, we also examine other factors beyond state agency actions that have supported a high level of professional development activity in the state—the *professional development landscape*. This broad scope allows us to gain a full and rich picture of the contexts in which state and federal policies operate. This should inform state and federal education agencies seeking to improve teaching and learning through professional development policies or strategies, supporting their decisions about which policies and strategies to pursue, given limited resources and competing priorities.

Professional Development and Policy

Policymakers create educational policies related to professional development with the intent of changing instructional practice. Research and experience, however, show that policies are usually not implemented as planned and that a professional development program adopted across many sites is likely to vary significantly from one context to the next. Milbrey McLaughlin (2005) reminds us that the teachers' workplace context is an important variable in determining if, as well as how, a policy gets implemented. Citing findings from the RAND Change Agent Study (1973-1978), she emphasizes that "it is exceedingly difficult for policy to change practice" (p. 59), and what the local practitioners actually do with the policy matters more than the features of the policy; in her words, "implementation dominates the outcome" (p. 60). She also argues that the ability and inclination of local practitioners to implement a particular policy has everything to do with the existing "local capacity," "will," and leadership (p. 60) in a given context.

In addition, certain scholars suggest that some governmental policy strategies may be ill suited to supporting high-quality teacher professional learning, because policy is limited in its ability to change norms and practices from the top down. For example, although state statutes can regulate the number of hours of professional development teachers are required to complete for license renewal, they cannot ensure that those hours are spent fruitfully in high-quality professional development activity likely to improve instruction. On the other hand, a state can encourage and fund professional organizations, as with the subject matter projects developed by members of the profession in California, to help support teachers in professional learning opportunities that represent the leading edge research and practice in a field.

This latter approach is called "professional policy," which can be used as an alternative to governmental regulation in fields where knowledge is always growing and its appropriate application is contingent on many factors. Professional standards hold members of a profession accountable for developing shared expertise and applying it appropriately, rather than imposing standardized prescriptions for practice that would fail to meet clients' differing needs (Darling-Hammond, 2010; Thompson & Zeuli, 1999). Instead of attempting to design state policies that prescribe what teachers should learn, states can design policies allowing the teaching profession to set and enforce standards of practice and support professional learning by allocating responsibilities to professional bodies such as standards boards, accrediting agencies, and professional associations. This strategy aims to build a set of bottom-up structures, norms, and cultures more likely to lead to changes in local practice.

Building on this knowledge, our professional development case studies seek to examine the link between state policies and existing professional development practices in local contexts, as well as other factors that appear to support research-based professional development practices at the local level. One way to conceptualize the link between state policies and local professional development practices is to investigate how a particular professional development approach, strategy, or tool is picked up and put into use.

The Role of Intermediary Organizations

Recent research on intermediary organizations can offer a useful conceptual lens for examining how state-level policies and micro-level practices are linked organizationally through professional development organizations. Intermediary organizations take various forms, but typically they "are capacity-building organizations, operating to increase the capability of individuals, organizations or systems" (Jaquith & McLaughlin, 2010, p. 86).[2] Meredith Honig defines intermediaries as "organizations that occupy the space in between at least two other parties . . . and that depend on those parties to perform their essential functions" (Honig, 2004, p. 65). Intermediaries often operate as knowledge brokers, helping to translate ideas formed in one setting to another. But the foci of intermediaries varies. For instance, Honig (2004), identifies five dimensions along which the intermediaries between policymakers and policy implementers operate: "the levels of government (or types of organizations) between which they mediate, their membership, their geographic location, the scope of their work, and their funding/revenue sources" (p. 65).

Intermediaries do not have to operate between policymakers and policy implementers. In education, intermediaries also commonly operate between universities or research institutes and schools or districts. As an organizational type, professional development organizations operating as intermediaries are increasingly common in many states. They work as boundary-spanning and capacity-building organizations that function "to increase the capacity of individuals, organizations or systems . . . [because they] move between public and private agencies . . . with a nimbleness typically unavailable to bureaucracies or public agencies" (Jaquith & McLaughlin, 2010, p. 86). Examining the intermediary role of professional development organizations is a way to study the link between macro-level policies and micro-level practices.

Professional development organizations that operate as intermediary organizations can link state or federal policies to local practitioners. They can also connect researchers and professional development providers located in universities to practitioners in the field and help to connect theoretical and practical knowledge. This link is usually conceptualized as unidirectional; however, in our analysis, we propose that the link can be bi-directional (see the Missouri case study). Considering a bi-directional relationship between practice and policy—and between schools and state agencies or intermediaries—allows us to more accurately characterize relationships existing in some states and offers a useful way to reframe policy and reshape how professional learning is conceptualized, organized, and constructed for and by teachers.

Not all professional development organizations are intermediary organizations. We distinguish between professional development organizations that function as intermediary organizations and other professional development providers. The latter differ in myriad ways, including size, aims, funding sources,

[2] *For more discussion of the role of intermediary organizations in school reform initiatives, see Jaquith and McLaughlin (2010).*

capacity, and approach to their work. What distinguishes these independent professional development providers from intermediary organizations is that they do not depend on another organization to perform their essential functions (for example, through sources of funding). In addition, their organizational mission is not to mediate or broker between two agencies in order "to enable changes in roles and practices for *both* parties" (Honig, 2004, p. 65).

The differences between the roles and positions of intermediary organizations and other professional development providers within each state are explored in the case studies to shed light on how various professional development *structures* may be instrumental in supporting a high level of participation either in professional development or in disseminating research-based, effective professional development practices.

Data Sources and Methods

Colorado, Missouri, New Jersey, and Vermont were selected as "professionally active states" for this study on the basis of these criteria:

- Teachers reported a high level of participation, and participation hours, in professional development (Schools and Staffing Survey, 2008; NAEP Teacher Questionnaires, 2009) across various topics; or the state had a reputation, confirmed in the literature, for having an effective, research-based professional development approach in all or part of the state (see the definition of *effective* professional development above).
- Students exhibited strong academic achievement on NAEP measures or noteworthy progress over time.
- As a group, the states offer geographic and demographic diversity.
- As a group, the states represent different approaches in how policies, strategies, and structures are used to impact professional development at the local level.

The four states were not selected because they represent exemplary professional development systems that are held up to be models for emulation, although they all offer some productive examples and lessons for other states. Instead, they were selected to promote an understanding of how they were able to support more professional learning opportunities for teachers coupled with gains for students. Each state has distinct strengths and challenges, as well as unique policy contexts and professional development landscapes. Each stands out in some way with respect to how teacher professional learning is supported in the state. As a group, they supply a rich set of cases illustrating distinctive contexts and approaches to professional learning in support of student learning.

Data Informing the State Sample

Table 1 displays an overview of the 2008 SASS and 2009 NAEP Teacher Questionnaire results for each of the four states.

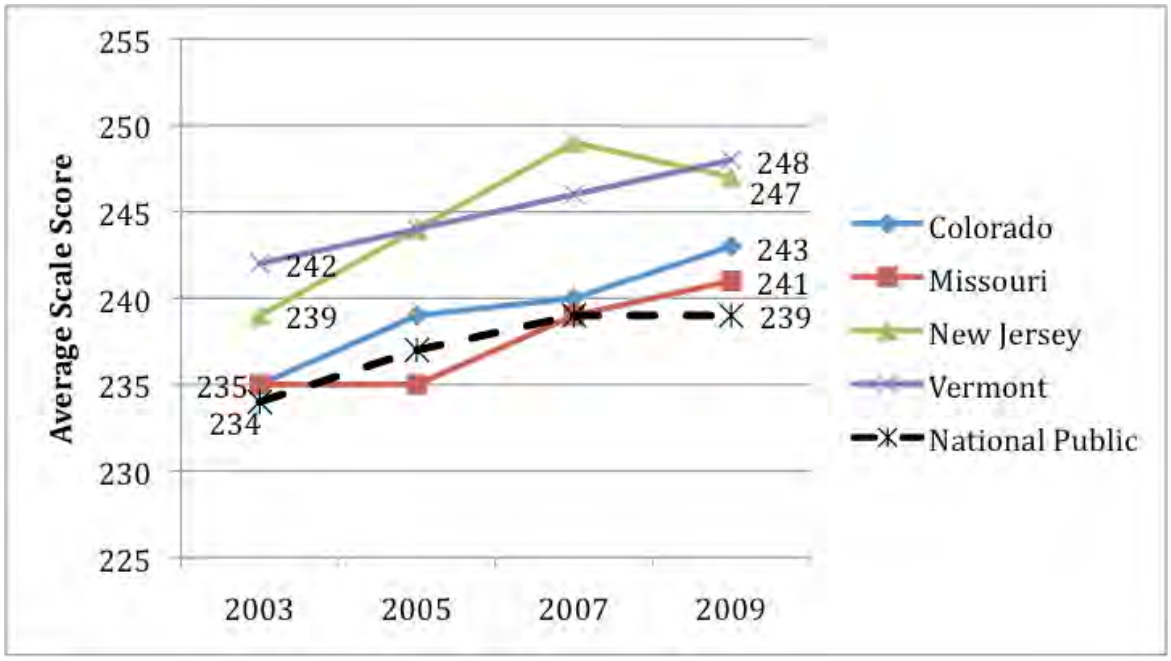
Figures 1–4 display the NAEP scale score trends between 2003 and 2009 for mathematics (fourth and eighth grade) and reading (fourth and eighth grade) in the four states included in the case study. Tables

TABLE 1. PERFORMANCE OF SELECTED STATES ON SURVEYS OF TEACHER PARTICIPATION IN PROFESSIONAL DEVELOPMENT

State	2008 Schools and Staffing Survey Teacher Questionnaire	2009 NAEP Teacher Questionnaire (Fourth Grade Elementary Teachers)
Colorado	Higher than average participation for teachers with respect to Induction (91%), Mentoring (86%), Seminars for Beginning Teachers (81%), Supportive Communication with Principal or Admin (87%), PD on Content (89%), Reading Instruction (69%), Teaching LEP Students (43%)	Higher than average participation for teachers in Language Arts PD (88%), Language Arts Curriculum (91%), Language Arts Curriculum Committee (52%), Language Arts Discussion/Study Group (63%)
Missouri	Higher than average participation for teachers with respect to Induction (82%), Mentoring (87%), Seminars for Beginning Teachers (84%), PD on Content (89%), Student Discipline/Classroom Management (60%)	Higher than average participation in Language Arts PD (80%), Content Standards-Reading (95%), Language Arts Curriculum (91%), Language Arts Curriculum Committee (55%), Language Arts Discussion/Study Group (55%)
New Jersey	Higher than average participation in PD on Content (90%); documentation in the literature of intensive professional development in a group of low-income, high-minority school districts that were part of a mandated court remedy in the Abbott decision	Higher than average participation in Language Arts PD (84%), Math PD (76%), Use of Calculators (69%), Use of Manipulatives (87%), Use of Computers/ Technology (80%), Co/Team-Teaching Language Arts (46%), Co/Team-Teaching Math (46%)
Vermont	Higher than average participation for teachers with respect to PD on Content (91%), the percentage of teachers receiving 33+ hours of PD on Content (42%), the percentage who found PD on Content and Reading Instruction “very useful” (32% and 33%, respectively)	Higher than average participation for teachers in Math PD (73%), work on the Science Content Standards (74%), supports for Science Inquiry-Tech Design (71%), and the opportunity to consult a Language Arts Specialist (55%) or a Math Specialist (58%)

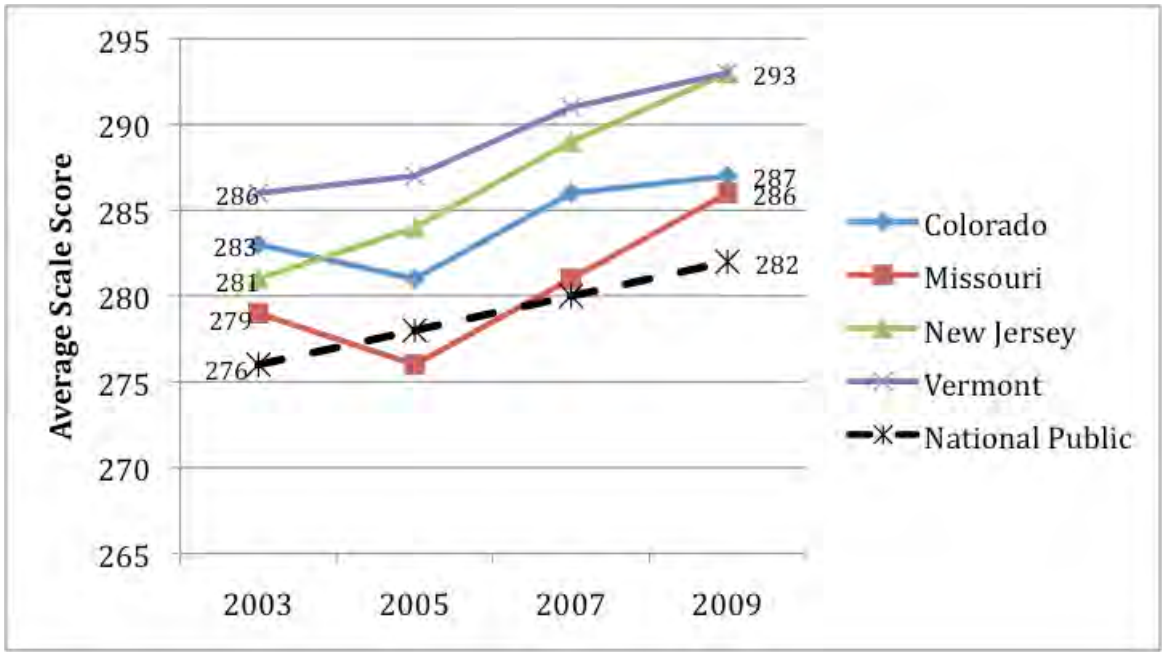
Note: Only the survey items on which a high percentage of teachers reported participation are included in this table. “Higher” participation rate indicates that the average teacher participation within a state is higher than the national average. In most cases, SASS data analyses indicate that these differences were statistically significant.

FIGURE 1: NAEP AVERAGE SCALE SCORES–4TH GRADE MATHEMATICS (2003–2009)



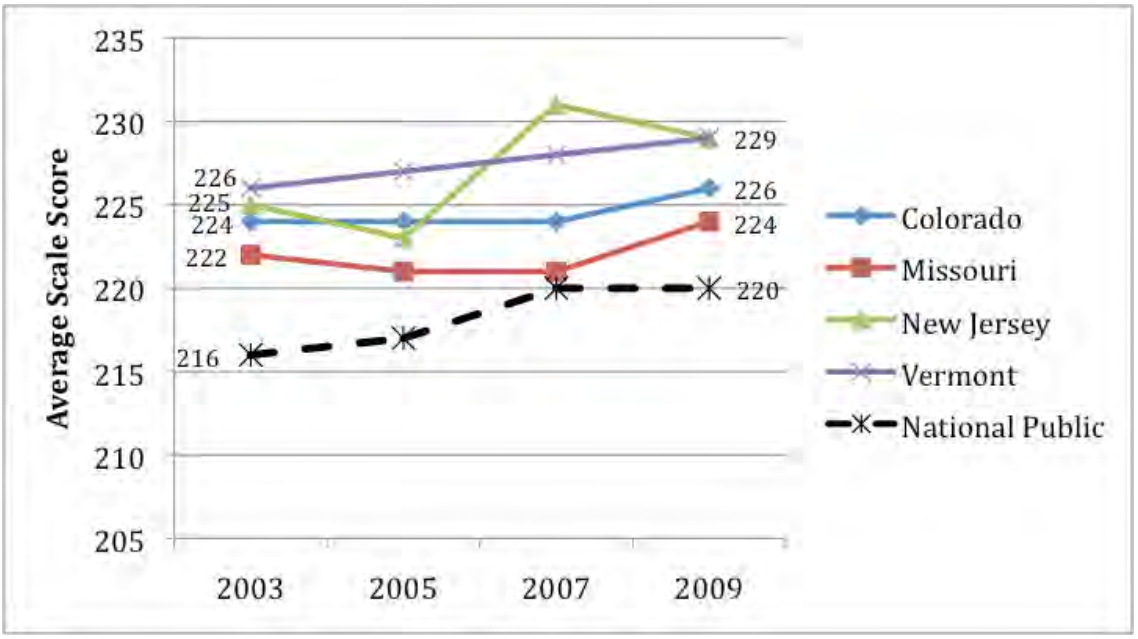
Source: National Center for Education Statistics, Institute for Education Sciences. National Assessment of Educational Progress. http://nces.ed.gov/nationsreportcard/states/.

FIGURE 2: NAEP AVERAGE SCALE SCORES–8TH GRADE MATHEMATICS (2003–2009)



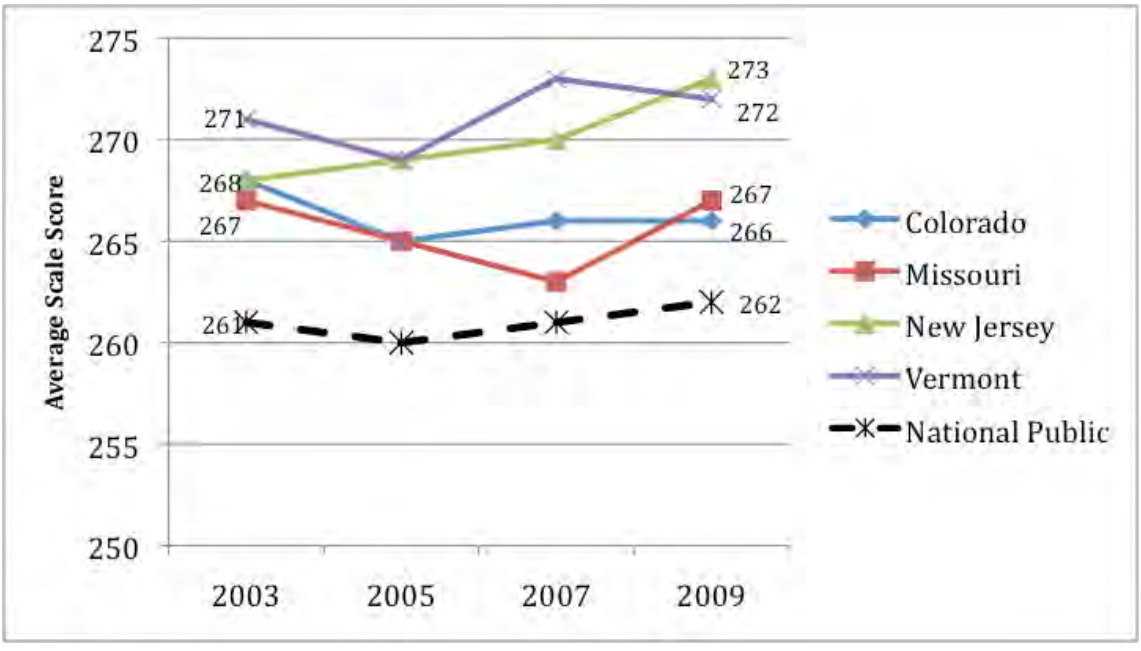
Source: National Center for Education Statistics, Institute for Education Sciences. National Assessment of Educational Progress. http://nces.ed.gov/nationsreportcard/states/.

FIGURE 3: NAEP AVERAGE SCALE SCORES–4TH GRADE READING (2003–2009)



Source: National Center for Education Statistics, Institute for Education Sciences. National Assessment of Educational Progress. http://nces.ed.gov/nationsreportcard/states/.

FIGURE 4: NAEP AVERAGE SCALE SCORES–8TH GRADE READING (2003–2009)



Source: National Center for Education Statistics, Institute for Education Sciences. National Assessment of Educational Progress. http://nces.ed.gov/nationsreportcard/states/.

A1 through A4 in Appendix A present the source data for these figures; and include additional data on achievement levels ("at or above basic," "at or above proficient," "at advanced").

Although all the case study states had NAEP score trends above the national average for public schools, the "achievement gap" persisted across all states between students who were economically disadvantaged and less disadvantaged, as did the gap between students with minority and nonminority status. However, some of these gaps did narrow in the states we studied. (See details within each case study.)

Data Collection

The data collection process for the case studies was comprised of:[3]

- Telephone or in-person interviews with state and district education agency staff responsible for professional development or other instructional improvement initiatives
- Document and report collection (state education laws and regulations, program descriptions, evaluation study reports)
- Visits to professional development events or centers sponsored by the state, district, or regional service centers to learn about their professional learning programs
- Telephone or in-person interviews of professional development providers
- Visits to districts or schools where exemplary or innovative professional development practices are in use, to observe or gather information on these practices (based on referrals from state and district agency personnel)
- Interviews with principals and teacher leaders in schools with exemplary professional development practices (based on referrals from state and district agency personnel)

In total, interviews with 151 individuals were conducted across the four case studies. A breakdown of the interviews and observations conducted for each case study state, as well as a description of the data collection and analysis strategies, are presented in Appendix B.

Case Study Organization

In the four case studies that follow, we report and organize the findings in this way: Each begins with an overview of the case—*"Why study State X"?* This section gives a brief overview of the findings from the case study and explains "What is this a case of?" It also summarizes results from the 2008 SASS Teacher Questionnaire. The second part of the case study presents the state's educational context, including student demographics, and basic information about the *state's educational system* and overall policy context vital to understanding the state's professional development policies. The third section describes the *state's professional development policy context* and includes information about the state statutes, regulations, and administrative rules

[3] *See Table B1 in Appendix B for detail on the number and types of interviews and observations conducted for each case.*

regarding professional development. In the fourth section, we outline and discuss the state's professional development landscape, e.g., major professional development initiatives, providers, programs, and how they are implemented in local practice. This section of the case study examines possible connections between the state education agency policies, strategies, and structures, and the observed local professional development practices.

The discussion of how state policies and agencies interact with other professional development initiatives and supports is the largest portion of each case and the most variable, because the story of the development and shape of each *state's professional development landscape* is unique. In some cases, the shape of the landscape is strongly connected to state education agency actions, while in others major actors are much more diverse and wide-ranging. This section focuses on the central or core polices, strategies, and structures that appear to be driving a high level of professional development activity or participation in research-based professional development in the state. The case study concludes with a discussion of the role of state education agency policies, strategies, and structures, other contextual factors that have shaped the professional development landscape.

COLORADO

A Case of Federal, State, and Local Convergence on Strategies for School Improvement

Case Study Overview: Why Study Colorado?

The Colorado Department of Education (CDE) has a well-articulated vision for school improvement, with a focus on whole-school, whole-staff involvement in needs assessments and data-driven decision making, with the goal of instructional improvement for all students. However, given that Colorado has a "local control" culture and state statutes delimit the role of state government, which also has very limited resources, how does the state meet the diverse professional development needs of districts in such a geographically vast state?

Results from this policy case study suggest that the CDE's professional development policies and strategies are evolving and have been shaped by (1) a history and climate of innovation allowing independent professional development providers to flourish, provide some of the infrastructure needed to meet the demand of schools and districts, and influence the instructional improvement approaches of the state department of education; (2) an increasingly regulatory environment in which federal and state mandates, supported by grant funding incentives as well as sanctions, are driving the kinds of professional development that local districts and professional development providers are expected to provide; and (3) a statewide (and national) cultural shift in an understanding of the goals and responsibilities of public schools and a moral imperative to improve student achievement and close achievement gaps.

The high level of participation in professional development among Colorado teachers focused on content and on reading instruction (as evidenced in the Schools and Staffing Survey (SASS) and National Assessment of Educational Progress (NAEP) Teacher Questionnaire data). When compared to the national average participation level, this suggests that federal policies aimed at improving student achievement (through the NCLB act) in combination with state initiatives for improving reading and math achievement, have in some measure been successful in prompting schools across the state to work on issues of instruction in reading and in mathematics (including schools that did not receive federal or state grants).

Colorado's professional development organizations (including "intermediary organizations" such as the regional Boards of Cooperative Educational Services (BOCES), and independent professional development providers) have come into line with the federal and state mandates for results-driven professional development aimed at improving achievement by improving instruction. This convergence in the goals and approaches to school and instructional

improvement is in large part a reflection of the demands being placed on schools and districts by federal and state mandates, as well as an overall cultural shift over the last two decades since the inception of standards-based systemic reform. However, this convergence in the approach to school and instructional improvement that the state and many local districts have embraced—whole-school involvement in a cycle of inquiry around local needs and involvement in decision making (i.e., professional learning communities, PLCs)—reflects the influence of a generation of innovative education professionals and leaders in the state.

High Level of Participation in Professional Development

Data from the 2007–08 SASS show that Colorado's first-year teachers had a rate of participation significantly higher than the national average in induction programs (91%) and mentorship (86%), high participation in professional development on content (89%), and significantly higher than national average participation in professional development on reading instruction (69%) and teaching limited-English-proficient students (43%). NAEP Teacher Questionnaire data for 2009 (fourth grade classes) also indicate a high level of engagement in professional development on language arts instruction. Although these survey results cannot tell us about the quality of professional development in the state, they give one indicator of a state context that is supportive of a high level of teacher participation in professional development.

Colorado's Educational Context

Colorado's Diverse K–12 Population. Colorado's public educational system serves more than 800,000 pre-K–12 students across 183 districts and 1,769 schools (EDFacts, 2009). In 2009–10, there were more than 50,000 teachers in the state. Colorado's districts vary widely in size, in terms of enrollment and geographic size. The five largest districts enroll between 40,000 (Adams 12) and 86,000 students (Jefferson County), while the smallest districts enroll fewer than 100 students. In Colorado, 50 of the state's districts have fewer than 300 students enrolled. The 15 districts in the Denver metropolitan area enroll 55% of all of the state's students, while the 86 districts in small towns and rural areas serve 13% of the student population (Center for Education Policy Analysis, 2006).

The demographic characteristics of K–12 students in Colorado, in comparison to national figures, are displayed in Table 2.

The 2009 NAEP assessment results show that Colorado students have made significant gains in mathematics scores since 2003 at both fourth grade and eighth grade levels. Fourth graders scoring proficient or above increased from 34% to 45% between 2003 and 2009. Eighth graders scoring proficient and above also increased, from 32% to 40%. Minority and low-socioeconomic student subgroups in Colorado also made progress on the fourth grade math NAEP. Despite these gains, achievement gaps between subgroups remain problematic in math and reading, a national pattern that has not appeared to improve much over the last decade of testing.

NAEP reading scores have remained relatively stable, though Colorado students continue to outperform the national average. The percentage of fourth graders scoring proficient or above in reading was 35% in 2003 and 36% in 2007, compared to the

TABLE 2. COLORADO'S K–12 PUBLIC SCHOOL STUDENTS: DEMOGRAPHIC CHARACTERISTICS

Student Enrollment	Number of Students (CO)	Percentage of State Total	Number of Students (National)	Percentage of National Total
All students	818,443		49,683,978	
Economically disadvantaged students	289,334	35.4	22,083,252	44.4
Limited-English-proficient students	88,907	10.9	4,492,068	9.0
Children with disabilities (IDEA)	83,577	10.2	6,599,856	13.3
White	498,713	60.9	26,734,729	53.8
Black, non-Hispanic	48,757	6.0	8,258,919	16.6
Hispanic	232,226	28.4	10,960,699	22.1
Asian/Pacific Islander	29,253	3.6	2,423,554	4.9
American Indian/ Alaskan Native	9,494	1.2	586,009	1.2

Source: EDFacts (2010). SY 2009-10. (http://www2.ed.gov/about/inits/ed/edfacts/state-profiles/colorado.pdf)

national average of 31%. There were similar patterns of performance at the eighth grade level.

Colorado has several advantages over other states on indicators of adult wealth and education. The 2005 American Community Survey found that Colorado was 12th in the nation for median family income and 36th for the number of people living below the poverty level. Colorado ranked second in the percentage of adults with a bachelor's degree (more than one-third), and 13th for the percentage of high school graduates (89%). These are indicators that are usually correlated with K–12 student achievement (Center for Education Policy Analysis, 2006).

However, Colorado also has some challenges:

Per-pupil spending. In 2010, the state had one of the lowest per pupil spending rates in the country, ranked 42nd by *Education Week* (2010) adjusting for regional cost differences, even though education spending comprised as much as 42% of the state's operating budget (Center for Education Policy Analysis, 2006). Colorado was also ranked 50th in teacher salaries (as a percentage of pay in comparable professions) (*Education Week*, 2010).

Although Colorado's students overall have made significant gains in NAEP math scores over the last decade, the achievement gap between economically disadvantaged and noneconomically disadvantaged students, as well as that between minority and nonminority groups, continues to persist. In addition, the percentage of economically disadvantaged and minority students continues to rise in the state. K–12 students eligible for free and reduced lunch increased from 31% in 2003 to 36% in 2008, while the percentage of Hispanic students increased from 25% in 2003 to 28% in 2008.

Local Control. As a vast state with substantial geographic and demographic diversity, ranging from large urban areas in the Front Range region of the state to mountainous, remote, and rural areas in the surrounding regions, the primacy of local needs and protectiveness of local decision making have been a long-held tradition in state politics and policies. In fact, protection of local control is embedded in state legislation.

This history of local control has meant that over the years opportunities for innovation and local initiative were bountiful, allowing the professional development efforts of districts (based on local needs) and independent organizations to flourish. Evidence of support for innovation can be found in the burgeoning number of charter schools in the state, pay-for-performance teacher compensation systems in Denver and Douglas County, as well as the Teacher Advancement Program in Eagle County. In the past, districts were given much more freedom to determine the particular needs of their schools and teachers, and strategies for school and instructional improvement. In that environment of local decision making and choice, a number of professional development organizations gained a strong foothold in the state as professional development providers. They include McREL (Mid-continent Research for Education and Learning), the Public Education and Business Coalition (PEBC), the Colorado Writing Project, the Colorado Council of Teachers of Mathematics, the Rocky Mountain Middle School Math and Science Project, the National Board for Professional Teaching Standards, the Colorado Council for Staff Development, and the Colorado Council for Learning Disabilities, among others. All of these organizations have a reputation for high-quality, effective approaches to professional development. Thus the array of high-quality professional development options available to Colorado districts is wide. This legacy of "local control" and choice has laid a strong foundation for ongoing provision of high-quality professional development in the state.

However, it has become increasingly clear that over the last two decades local control is more rhetoric than reality in the state's education system, given the increasing number of federal and state mandates that affect local school governance. These standards and rules govern new teacher induction, teacher licensing, license renewal, professional development, school improvement, and administration of special education funds. These mandates and their impact on professional development work in the state are discussed in detail in the section Professional Development Policy Context.

Education Policy and Reform Context. This trend toward more centralized education governance began in the late 1980s with the strong policy leadership of Democratic Governor Roy Romer (serving three terms from 1986 to 1999) and Commissioner Calvin Frazier (who served from 1973 to 1987), advocates for the state's

adoption of Model Content Standards and a school accountability system based on the state's standardized assessments. Under Commissioner Frazier, Colorado had also begun efforts to improve teacher education through professional standards, tightening of accountability for institutions of higher education providing teacher education programs and forming partnerships between universities and K–12 schools (based on the Professional Development Schools model of John Goodlad). Republican Governor Bill Owens (serving two terms from 1999 to 2007) seems to have loosened state control over education by supporting a liberal charter schools law (in 2009–10 there were 154 charter schools in Colorado) as well as the Public Schools of Choice option, which allows parents to enroll their children in any school in their district regardless of zoning rules. On the other hand, under Owens the Colorado Student Assessment Program was expanded to include math and science assessments and more grade levels (3-10), while also requiring all 11th graders to take the ACT (American College Test).

Colorado's Professional Development Policy Context

Given Colorado's tradition and past political culture of local control, there have been few attempts by the state to tightly control or regulate professional development. The Colorado Educator Licensing Act of 1991 (Colorado State Board of Education, n.d.-e), with a number of amendments made to the law over the years, has been the only legislation during the last two decades to set forth policy regarding teacher licensing and professional development. (Recently, in 2008 and 2010, additional statutes related to teacher quality were passed, but they have a marginal relationship to professional development. These are discussed below.) The Educator Licensing Act was wide ranging and established rules for a three-tier licensing system (Initial License, Professional License, and Master Teacher Certificate); approval of teacher preparation programs including alternate route programs; criteria for renewal of licenses and standards for endorsement in subject areas or other specializations; reciprocity for educators with out-of-state licenses; establishment of the requirement for districts to offer induction programs for beginning teachers; and other regulations regarding granting or revocation of licensure.

Among the regulations established by the Educator Licensing Act are two specific provisions that relate directly to professional development. First, local districts are required to give beginning educators (and all those new to the district) an induction program. Initial licenses for educators are valid only in districts that make available an approved induction program. There are two ways districts are held accountable for induction programs: through a program approval process, and through licensing requirements for individual educators. The act (section 13.01) also establishes criteria for approval and review of induction programs (which are conducted by the CDE). Each district (consortium of districts, or an authorized entity, such as a BOCES) is required to seek approval from the CDE for its induction program every five years. All teachers, principals, and special services educators with an Initial License must complete an induction program to qualify for the next level of licensure, the Professional License (although there are provisions for waivers in some circumstances). Despite the fact that there are no designated resources for induction in the CDE budget, the act is able to enforce wide-scale provision of

and participation in induction programs. This long history in the state of providing induction programs may explain the very high level of participation observed in the 2008 Schools and Staffing Survey in induction and mentoring. The SASS data also suggest that these induction services may be of higher quality than in other states, with a higher than average percentage of teachers reporting an array of supports, notably mentorships, courses or seminars for beginning teachers, reduced teaching load or release time, regular supportive communication with a principal or administrator, and common planning.

A recent statewide teacher working conditions survey ("TELL Colorado"—Teaching, Empowering, Leading, and Learning Initiative) queried beginning teachers about the induction and mentoring supports they received. Of the approximately 3,300 beginning teachers with three or fewer years of experience who responded to the survey, 80% reported being assigned a mentor, a figure slightly lower than the 86% who reported having a mentor in the 2008 SASS survey. Findings from the TELL survey indicate that new teachers who had access to a range of induction supports (such as orientation meetings, mentors, new teacher seminars, regular communication with principals or administrators, common planning time, access to PLCs, release time to observe other teachers, time to meet with their mentor during school hours, and a reduced workload) were significantly more likely to be committed to staying in their current teaching assignments, while new teachers who received no supports were three times more likely to plan to leave their schools. Although the quality and frequency of mentor supports such as classroom observations, reviewing lessons plans, and analyzing student work appeared to be infrequent, 64% of teachers receiving any induction supports reported that it improved their instructional practice, and 64% reported that it helped to influence student learning (Hirsch, Sioberg, & Germuth, 2009).

A second provision of the Educator License Act that relates directly to professional development established requirements for license renewal for all educators seeking to renew their Professional License. The act (Section 12.02) requires that every five years all educators must complete a minimum of 6 semester hours or 90 clock hours of professional development. In addition, the act defines rules regarding the types of professional development activities that qualify for license renewal, among them inservice education, college or university credit, educational travel, involvement in school reform, and internships, as well as the content of professional development. In recent years, the Colorado State Board of Education revised its professional development guidelines for license renewal and restricted the content of professional development to bring a stronger focus to professional development that improves educators' ability to work in their endorsement areas. The guidelines require that professional development activities for license renewal must be related to:

- Increasing the license holder's competence in his or her existing or potential endorsement content area; or,
- Increasing the licensee's skills and competence in delivering instruction in his or her existing or potential endorsement area; or,
- Increasing the licensee's skills and competence in teaching literacy or numeracy.

In addition, the SBE added as one focus of professional development:

- Effective use of assessments in planning for instructional delivery and in individualizing student instruction (CDE Professional Development Guidelines, n.d.).

Professional development is also a requirement for teachers seeking the voluntary Master Teacher Certificate and renewal of the certificate (every seven years). As part of the requirements for obtaining the Master Teacher Certificate, teachers must successfully complete either a National Board for Professional Teaching Standards (NBPTS) certification or a professional portfolio demonstrating that the teacher (1) has advanced competencies in teaching, defined as planning, instruction, diagnosis, assessment, leadership, and professionalism; and (2) has contributed to the education community through service as a mentor, teacher of teachers, writer, researcher, or member of a statewide or national board or commission (Colorado State Board of Education, n.d.-e, Section 3.08 of 1991 act).

The Colorado Educator Licensing Act of 1991 also established "Standards for the Approval of the Program Content of Professional Education and Professional Development of Teachers and Special Service Personnel" (Sections 5.01–5.08), also known as the Performance-Based Standards for Colorado Teachers. There is also a corresponding set of standards for Performance-Based Principal Licensure. The standards in Section 5 for teachers are described as "standards for the licensing of all teacher education candidates in Colorado and reflect the knowledge and skills required of beginning teachers" (preface to Section 5) and include eight standards: Knowledge of Literacy; Knowledge of Mathematics; Knowledge of Standards and Assessment; Knowledge of Content; Knowledge of Classroom and Instructional Management; Knowledge of Individualization of Instruction; Knowledge of Technology; and Democracy, Educational Governance, and Careers in Teaching. While these standards are described in the act as standards for program content and professional development, they are really a set of professional teaching standards rather than a set of standards for professional development.

Other than the CDE's Professional Development Guidelines for license renewal, the state does not have a formal set of standards for professional development that guide districts and professional development providers in their designing of professional learning opportunities for teachers. In addition, although the state has an Educator Standards Board that serves as an advisory board to the State Board of Education, it seems to have had a limited role in recent years.

More recent statutes related to teacher quality (but not dealing with professional development) include Senate Bill 07-140 (the "Quality Teachers Act"), passed in 2007, which established the Quality Teacher Commission to offer recommendations to the state legislature on developing a system that would provide unique teacher and principal identifiers, with the goal of improving the state's ability to track the "teacher gap" in the state (the gap in teacher qualifications in schools with low-income, minority students versus that in more affluent schools). Based on recommendations of the commission, House Bill 09-1065 was passed in 2009, directing the CDE in collaboration with the Quality Teacher Commission to establish an Educa-

tor Identifier System. A Statewide Longitudinal Data Systems Grant was also obtained in 2009 to link educator and student unique identifiers. The stated purposes of the Educator Identifier System are to:

- Identify what makes "great" educators and determine how to replicate those attributes or conditions
- Improve teaching and learning by linking student achievement data to the students' teacher(s)
- Improve educator preparation programs and professional development
- Enable users to recognize and reward educators
- Study educator mobility, recruitment, and retention issues
- Address inequities in the distribution between high and low poverty schools as well as schools with high or low minority populations" (CDE, "Educator Identifier System")

The CDE is currently designing and piloting the Educator Identifier System, which is expected to be operational in April 2011.

The latest legislation dealing with teacher evaluation and tenure was passed in May 2010 (motivated in part by the federal Race to the Top competition). Senate Bill 10-191 commissions the Governor's Council on Educator Effectiveness to make recommendations to devise a statewide annual teacher and principal evaluation system, at least 50% of which would be based on student growth (defined by Colorado's state assessment results). The bill also changes how teachers would qualify for and retain tenure. Tenure would be granted after three consecutive years of demonstrated effectiveness and could be revoked after two years of poor evaluations. Professional development is not detailed in the bill as being a component of the teacher evaluation system, but the bill includes professional development as one component of a remediation plan for teachers who do not meet the definition of an effective teacher. The details of the new evaluation system are left to be worked out by the council and will not go into effect until 2014–15.

One recent piece of legislation that does have a more direct bearing on professional development was Senate Bill 08-038 (2008), the Regional Service Areas Act, which expanded the state's eight existing Regional Service Areas[4] to 12 and broadened the entities represented in the RSAs to include school districts, BOCES, and other Administrative Units, early childhood councils, and higher education institutions, as well as representatives of business and industry. The act also appropriated $1 million for provision of an annual grant of up to $50,000 per RSA as well as additional proportional funding based on the number of students served within the RSA. Regional Service Councils, with representation from this wider array of entities, are responsible for developing, monitoring, and reporting

[4] *Note that the Regional Service Areas are a distinct organizational structure from the Boards of Cooperative Services and have a different set of legislative authorizations and governance structures. The RSAs are governed by the Regional Service Area Councils and fall under the organizational authority of the CDE and Colorado State Board of Education, while the BOCES, when originally established, were independent from the CDE and SBE and were accountable primarily to their local districts and Superintendents Advisory Councils. The 2008 Regional Service Areas Act, however, brought the BOCES (as the fiscal agent of the RSAs) into a closer relationship with the CDE and SBE.*

on a regional plan for the region and devising strategies to meet the educational needs in the region and that are aligned with CDE initiatives. The purpose of the legislation was to "increase the effectiveness and efficiencies in providing education services in the state" (Regional Service Areas Act) and also to bring the work of the RSAs into greater alignment with the state's priorities and initiatives, as well as allow the CDE to better coordinate its services, including professional development, within regions (CDE, Regional Service Areas FAQ). For one fiscal year (2009–10), the RSAs successfully applied for and received grant funding for their work. Interviews with nine BOCES directors (BOCES serve as fiscal agents for the RSAs) indicate that many of the RSAs used those funds to support regional professional development efforts. However, after one year of funding the RSA appropriations were discontinued because of the state's budget crisis. Some of the RSAs are continuing to spend out the funds from 2009–10, but with a lack of ongoing state appropriations the future of the RSAs is uncertain.

Funding for Professional Development. There are few state funds allocated for directly supporting professional development in Colorado. However, the state does support several state initiatives that offer professional development as one component of the program. For example, the state's recent Closing the Achievement Gap initiative, which awards grants to a limited number of districts to work on improving student achievement, indirectly funds professional development to improve instruction. In addition the state allocated $99 million in grants to schools over five years for its Read to Achieve initiative. Until late 2010, there was no specific unit within the CDE that coordinated professional development in the state, though many of the units across the CDE (Office of Teaching and Learning; Literacy Grants and Initiatives; Exceptional Student Leadership; Education, Technology and Innovation; Gifted and Talented; Online Learning; Language, Culture, and Equity; and Prevention Initiatives have provided limited opportunities for professional development around the state as well as technical assistance. (In late 2010, the new Office of Educator Effectiveness was created in consultation with the New Teacher Center and funded through a grant from the Rose Foundation, with plans for it to serve a coordinating role for all of the CDE's professional development initiatives.)

The state also administers a number of federal grants that support professional development work, including NCLB (Titles I, II, III), Individuals with Disabilities and Education (IDEA) funds, and Reading First, to name a few. Colorado receives approximately $13–14 million in Title IIA funding every year, most of which is distributed to local districts on the basis of district size and level of student poverty in schools. A small percentage is retained by the CDE for state programs and administrative costs. In the past, about $800,000 has been available for state-level activities, such as online coursework in the content areas (e.g., in mathematics content) and trainings for the SST (School Support Teams) and CADI (Comprehensive Appraisal of District Improvement) processes. The Colorado Department of Higher Education has also received a small amount of funding to run competitive grants available to institutions of higher education.

In the last year, some of these funds have been redirected to enable the state to conduct a biennial teaching and learning conditions survey (the TELL Colorado survey,

designed in consultation with Colorado professional organizations and the CDE, and administered by the New Teacher Center), which queries Colorado teachers and principals about their working conditions, access to resources, leadership, and access to mentorship and induction. The results of the survey are used to inform district and school improvement work and state-level policy, and to compare results within and across states. Some of the Title IIA state-level funds were combined with special education funds to conduct an evaluation of staffing, access to resources, leadership, and other factors to assess school and district improvement efforts. Lastly, a small percentage of the Title II funds are used to conduct research on recruitment and retention of teachers for special populations (teachers in Title I schools, teachers in rural schools, special education teachers).

The state also uses state-level Title IIA funds to support stakeholder groups such as the Quality Teachers Commission (advisory group on educator IDs and studying the teacher gap) and the Educator Effectiveness Council (SB 191, 2010). Evaluation of local use of Title IIA, IIB, and IID funding is currently under way, with a final report anticipated at the end of 2010. A CDE administrator noted that examination of funding trends from 1993 through 2008 indicates a shift in how districts are using Title IIA funding, away from efforts to get all teachers in the districts to meet the federal definitions of "high qualified" (since about 99% of teachers have met these definitions). Through CDE trainings, communication, and the application review process, the state has sought to encourage districts to move away from using Title II funding for class size reduction and meeting the highly-qualified definitions, toward use of funds for improving management of data, professional development, and hiring practices (recruitment and retention), as well as equitable distribution of teachers.

Colorado recently made a commitment to support teachers seeking National Board certification. In 2009, Governor Ritter established a $1,000 state scholarship to offset the $2,600 application fee (teachers must first apply for the federal scholarship of $1,000 to qualify). In addition, the CDE awards an annual $1,600 stipend to National Board Certified Teachers (NBCTs) who remain in the public schools, and a second $3,200 stipend to NBCTs who teach in schools listed as Low Performance or Unsatisfactory on the School Accountability Report. In 2009, the state directed $633,248 in stipends to NBCTs. Because of a state budget shortfall, federal American Recovery and Reinvestment Act (ARRA) stimulus funds were used to award these stipends (CDE, "National Board Certification"). The number of NBCTs in Colorado is relatively small—478 (with 75 new NBCTs in 2009)—in comparison with states such as North Carolina (which has nearly 16,000 NBCTs) that have been offering supports and incentives for National Board Certification for a much longer period. However, if the state continues to support candidates with application scholarships and stipends, it is foreseeable that the number of NBCTs will continue to rise.

Colorado's Professional Development Landscape

CDE's Vision and Strategies for Data-Driven School and Instructional Improvement

In June 2007, a new state commissioner, Dwight Jones, was appointed by a unanimous vote of the Colorado State Board of

Education. By September 2007, the Colorado Department of Education (CDE) and the the state board had released a strategic plan for education reform in the state, titled "Forward Thinking," with the goal of creating "a purpose-driven and dynamic system of educational leadership, service, and support that relentlessly focuses on the learning of ALL students" (CDE, 2007, p. 5). This strategic plan laid out a seven-point framework for improving educational services and student achievement in the state. Although this document is not embodied in state legislation or CDE regulations, it is instrumental in setting priorities for the work of the state board and CDE and has had a significant role in shaping the state's policies and organizing its work over the last several years.

The state's strategic plan includes a specific goal (Goal 2) to "enhance professional development involving best practices." Under this goal, there are several subgoals:

- Goal 2a: Design and implement a more consistent and comprehensive statewide system of support that helps schools and districts build the capacity needed to achieve ambitious student outcomes.

- Goal 2b: Restore the credibility of the department by enlisting top experts in the country who have unimpeachable credentials and no record of ideological bias to serve on the technical advisory panels which the department convenes for the purpose of studying the validity, reliability and/or adequacy of standards, assessments and practices.

- Goal 2c: Provide more and better support for content- and curriculum-based efforts through the acquisition and development of in-house expertise in math, reading, science, writing, arts (including music), social studies and languages.

- Goal 2d: Enhance support to smaller and more rural schools and districts through a partnership with the Boards of Cooperative Educational Services and do so in a way that makes it feasible for more BOCES to offer a full array of services [CDE, 2007, pp. 26–27].

Of particular note in this set of subgoals or strategies is a greater focus and attention on building the capacity of the CDE to supply content-specific expertise and curriculum services across the major content fields. Since the publication of "Forward Thinking," the state has hired five content specialists to support its academic initiatives and released revised standards in all 13 content areas.

The "comprehensive statewide system of support" cited in subgoal 2a has since been embodied in the Statewide System of Accountability and Support (Senate Bill 09-163, Educational Accountability Act of 2009), designed to build processes and structures that tighten the approach to school accountability through improved measures of student learning and growth ("Student Growth Model") as well as provide greater levels of support and services to schools that are identified as in "Need of Improvement."

The last subgoal (2d) was to forge a partnership with the regional BOCES to improve services to rural districts in the state. This is another notable and significant strategy that appears to relate directly

to the issue of access to and resources for providing professional development services across all districts in the state. As noted in the section above, in 2008 the Regional Service Areas Act was passed (with a $1 million appropriation) with the support of the Colorado BOCES Association to move from eight to 12 RSAs in the state, with the intention of broadening access to education services to rural and small districts, build connections across the P–20 school systems, and increase the cost efficiency of the RSAs. The law also tightened the relationship between the CDE and the RSAs, making the RSAs (as well as the BOCES within them) accountable to the State Board of Education and the CDE for meeting goals in their RSA plans.

The goals and strategies articulated in "Forward Thinking" were first released in 2007, but these goals and strategies certainly do not represent completely new thinking about educational progress in the CDE or in the state. The content standards revision work across all 13 content areas that was completed in 2009 was the culmination of a much longer effort in the state (beginning with revision of the state's mathematics content standards in 2005) to improve the clarity of learning targets for teachers and students and to support greater alignment of school and district math curriculum with the mathematics content standards. (See the accompanying box for detail on Colorado's mathematics initiatives, including the standards revision process.)

Strategy for School and Instructional Improvement Through Professional Development. The core school and instructional improvement strategy of the CDE, though not explicitly stated in "Forward Thinking," is to model and support a culture of inquiry in the state focused on collaborative examination of school data, assessment of needs, problem solving, implementation of research-based interventions, and looking at results, from the level of the individual student to the school, district, and even state level. A high-level CDE administrator noted:

> If you look at our big professional development initiatives [Colorado Reading First, Positive Behavioral Intervention and Support, Response to Intervention], they all have a similar set of structures. And that's the leadership team, the coach on site, observation protocols for ensuring that you get high-quality implementation, screening and progress monitoring of students, and then that feedback loop. . . . Professional learning communities are definitely part of what happens in the schoolwide approach. We have found that in places that get results in Colorado, there is collaboration of teachers focused on looking at student data and instructional practices, and making adjustments to practice. And that's not something that happens in isolation [interview, May 24, 2010].

Even though the CDE does not explicitly name or define "professional learning communities" as a component of its school improvement strategies, the way CDE administrators discussed PLCs and their role in the CDE's school improvement initiatives implies a definition of PLCs as described above. In the CDE publication *2008 Best Practices Guide—Closing the Achievement Gap* (published with support from the Colorado Legacy Foundation; the Donnell-Kay Foundation; Augenblick, Palaich, & Associates; and the Piton Foundation), professional learning communities are not

Colorado's Math Standards Revision and Math Professional Development

The content standards revision work across all 13 content areas that was completed by the CDE in 2009 was the culmination of a much longer effort in the state (beginning with revision of the state's mathematics content standards in 2005) to improve the clarity and content of learning targets for teachers and students and to support greater alignment of school and district math curriculum with the mathematics content standards. (The myriad activities that were conducted during the mathematics standards review are detailed in the CDE report "The State's Prime Numbers," 2005).

Over a nine-month process beginning in 2004, the CDE's Office of Learning and Results conducted a statewide review of its mathematics content standards, a review of the research on mathematics cognition and learning, and an evaluation of the current status of mathematics performance and instruction in the state. The review included interviews, presentations, and visits with some 820 individuals, ranging from policymakers, educators, and university staff to media representatives concerned with the state's mathematics achievement. During this review, feedback and input on the state's mathematics content standards were solicited and information about the current math achievement of the state's students as well as research on effective mathematics teaching practices were disseminated as part of a broad public awareness campaign. This strategy of building buy-in by including a range of stakeholders and educators across the state in this review was a critical piece of the CDE's approach in a local-control state, where local adoption of state content standards is optional. (Local districts have the option of either adopting the Colorado standards or developing their own, meeting or exceeding the Colorado standards.) A similar approach was later taken with a review of the science content standards and ELA content standards. (See CDE, 2006, "The State's Formula for Success"; and CDE, 2007, "The State's Look at Literacy.")

A current CDE administrator who worked at a Colorado district during this math review, reflected on the impact of the math review on local practice:

> So from that, there really was a renewed focus on math. Some of the things that we found were the differing levels of knowledge of the standards at the time from school to school, district to district, teacher to teacher. And I think it really did serve as that reflection process in the state to say, "How are we doing? And where do we need to reenergize and focus our energy?" Following that report, the state did work in different initiatives to support professional learning. But the state doesn't have the resources to go visit every district and support professional learning communities, and we don't have that mandate as a local-control state. However, the information that the state produced through the year of math review, and the continuous focus on looking at data, has really changed the culture in Colorado in terms of making sure that schools, teachers, and districts are aware of their data, understand what their data is telling them, and to use that data to inform decision making. So lots of districts, through encouragement from the state, really are becoming very data-based in their professional learning communities, looking at the results of the state assessments and using that to consider their math program.

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Following the review, the state launched several mathematics initiatives. One of them, the Elementary Math Trainer Development program, funded partially by federal Title II funds and partially by the state, was initiated in 2004 and sustained over two years, with the purpose of building math leadership capacity in the state. The focus of this training program was to support the content knowledge of elementary teachers and differentiation practices in math instruction. Through sustained and ongoing professional development, building in time for professional development, and building a PLC among participants, the program was able to produce 30 to 40 math trainers, many of whom are now math leaders in the state. A secondary math teacher program, the Intensive Math Planning Workshop, also funded partially by Title II funds and partially by the state, was initiated more recently and is completing its third and final year. The focus of this training program is to build capacity in local school teams to generate instructional strategies for secondary mathematics teachers to differentiate instruction for special needs and struggling learners. The first two years' cohorts had 30 participants and the final cohort has 45 participants, including school administrators, with recognition that administrators need to understand the new standards and support math classroom instructional practice that aligns with the new standards.

Critical to the state's math initiatives are collaborations with external professional organizations to co-plan and co-facilitate regional professional development offerings. For example, in the wake of the last round of standards revisions in 2009, the CDE has partnered with the Colorado Council of Teacher of Mathematics (CCTM) to conduct regional workshops for teachers, with the purpose of building teachers' understanding of the new math content standards, which incorporate 21st-century skills and workforce or college readiness skills, and how to translate that into daily instructional practice. Additionally, the Colorado Math Intervention Team—a joint project among CDE, the Colorado Council for Learning Disabilities, and the CCTM—has worked collaboratively as a professional learning community over the last five years to co-plan and co-sponsor regional workshops focused on supporting struggling learners in mathematics, particularly those with learning disabilities. The Colorado Math Intervention Team offered a series of workshops over the course of 2010 to address topics such as how assessment supports Response to Intervention (RtI) in math; instructional strategies for learners who struggle with math; and a weeklong math boot camp focused on supporting struggling learners in elementary and math concepts and integrating high-quality assessments with instruction. This partnership with external professional organizations with the same goals has been critical for the CDE's ability to reach beyond its limited resources and capacity to directly support the professional learning of teachers.

Other professional development opportunities for mathematics teachers, particularly in the Front Range region, include the yearlong courses offered by the Rocky Mountain Middle School Math and Science Partnership, a federally funded program based at the University of Colorado-Denver. Additional Mathematics and Science Partnerships programs have been funded by Title IIB of NCLB with more modest grants. More than 90 Colorado districts have been involved in these partnerships since the beginning of the grant program in 2004.

explicitly mentioned, but the kind of work that happens within PLCs is described as 2 out of 10 "best practices" in a study of 39 schools that had outperformed their peers:

- Active engagement of teachers in school leadership and decision-making.

- Teachers are leaders in every school visited. They are involved in key aspects of decision-making, such as hiring and training new staff members, reviewing data and designing intervention strategies, prioritizing professional development needs and taking responsibility for defining and carrying out the school's educational vision.

- Substantial time for collaborative planning and options for professional development.

- A strong commitment to ensuring that all teachers have time to work collaboratively to review data and to discuss curricular requirements and lesson planning strategies to ensure that performance objectives are met. To provide teachers common time to plan together, school leaders are willing to use whatever creative means that are at their disposal—from "early release Fridays" at South Park Elementary School to establishing "duty free" rules at Hotchkiss High School so that teachers can use time that might otherwise be spent monitoring the lunchroom to plan in teams [CDE, 2007, p. 9].

"Teacher collaboration focused on student outcomes" is also cited as one of five key school practices in "math-successful schools" (p. 15) in an earlier CDE publication, *The State's Prime Numbers* (2005). Similarly, in another CDE publication, *The State's Look at Literacy* (2007), one of the "10 essential reading and writing improvement recommendations" includes an explicit reference to PLCs: "7. Be clear that faculty meetings or Professional Learning Communities (PLCs) collaboratively own and regularly share literacy performance results" (p. 27). Both the explicit and implied references to professional learning communities in the rhetoric used to describe the CDE's school and instructional improvement initiative suggests that PLCs have arrived in the state and are embedded in the state's professional development approaches.

Closing the Achievement Gap: Commitment to Improving Achievement for All Students. One of the hallmark initiatives of the CDE since Commissioner Jones came into office is a state program called "Closing the Achievement Gap" (CTAG), a pilot project that began in 2008. Funded through a modest appropriation of $1.8 million in the state's general funds, the project was limited in its reach to six districts in the first three-year pilot phase and an additional 11 districts in its second pilot phase (with a $1.7 million appropriation in 2010, funding $150,000 grants to each of 11 districts). However, CTAG is a demonstration project that models and embodies the state's overall strategy for instructional improvement and educational progress. Though directed at schools that have agreed to work with the state agency to close achievement gaps, CDE administrators indicate that this strategy goes beyond this particular program and represents the CDE's approach to all of its school

and instructional improvement initiatives. The kinds of strategies that form the basis of the CTAG program replicate many of the same strategies that are foundational in the Response to Intervention model, which has a similar focus on whole-school reform and cycles of data-driven inquiry as the approach to improving educational services for children with disabilities and struggling students, as well as for districts that are working to improve school safety and school climate (Positive Behavioral Interventions and Supports initiative). (See the sections on PBIS and RtI that follow for details on these state initiatives.)

The Role of Mandates, Incentives, and Sanctions in Colorado's Instructional Improvement Strategy

As noted earlier, Colorado's political climate of local control has gradually been impinged by greater and greater levels of state and federal legislation.

Colorado was one of the first states to adopt model content standards in 1994; and even before NCLB came onto the scene the state had its own school accountability system that mandated testing in certain grades. The state legislature also passed the Colorado Basic Literacy Act (1997), which mandated progress monitoring of students' reading levels in grades K–3 to support local literacy improvement efforts in the grades that were not part of the state's accountability plan. More recently, as noted above, the state revised its school accountability system (Statewide System of Accountability and Support) through the 2009 Education Accountability Act (SB 09-163) to incorporate use of a new "student growth model" as the basis for identifying schools in need of improvement and state intervention, as well as to report Adequate Yearly Progress to the U.S. Department of Education.

Other legislation that has had a significant impact on school governance is the reauthorization of the Individuals with Disabilities and Education Act (2004) and a significant change in how specific learning disabilities are identified, leading the state to mandate the use of RtI as the means to identify specific learning disabilities and the design of interventions that are used to support students suspected of having a disability (passed in 2006, with a 2009 deadline for complete conversion). The two pieces of legislation cited in the previous section that established the Educator Identifier Project and that overhauled the teacher evaluation and tenure system are also emblematic of growing willingness on the part of state legislators to exert greater control over the educational system and process.

The power of many of these legislative actions lies in the leverage afforded by state (and mostly federal) funding. Given the widely acknowledged lack of state funding for education, the CDE has come to rely heavily on federal funds for incentivizing district compliance with state policies. Titles I, II, and III of NCLB promote the resource incentives that allow the state to enforce its state accountability measures in high-poverty, low-performing schools (in addition to sanctions such as the threat of removing state accreditation if the expected rate of progress is not met). Funding from special education (IDEA) also permits significant leverage for moving districts to adopt the newly mandated RtI model of identifying and addressing the needs of students with disabilities.

Positive Behavioral Interventions and Supports and Response to Intervention in Colorado

Positive Behavioral Interventions and Supports (PBIS) and Response to Intervention (RtI) are two state initiatives that have had a wide reach in Colorado. As noted elsewhere in this case, the approaches used in both initiatives are consistent with the whole-school reform strategy (cycles of data-driven inquiry and problem solving in school teams) that has been articulated by the CDE as its strategy for school and instructional improvement.

Positive Behavioral Interventions and Supports

The state's adoption of PBIS came on the heels of the 1999 Columbine High School shooting in Littleton, Colorado. In addition, there had been a disproportionately high rate of referrals for minorities to special education services as well as suspension and expulsion rates for minority and special education students. PBIS, a voluntary program with professional development and technical assistance support (funded by federal State Personnel Development Grants and partially by IDEA Part B funds), was initiated in the 2002–03 school year. The initiative began with 16 pilot sites in two districts. Since that time, 742 schools across 82 districts have received PBIS training. The mission of the Colorado PBIS initiative is "to establish and maintain effective school environments that maximize academic achievement and behavioral competence of all learners in Colorado" (CDE). PBIS has four essential components: systems that support staff behavior, data to support decision making, practices that support student behavior, and outcomes or measurable academic and behavioral targets that are valued and are the ultimate goals of PBIS. (For more information, see http://www.cde.state.co.us/pbs/index.htm.)

Districts that apply to be part of the state initiative are required to commit to supporting the initiative with a 0.5 FTE (full time equivalent) staff member at the district level to coordinate and coach the PBIS work, and as part of the application process are required to take their demonstration sites through an internal review process to build at least 80% staff buy-in in piloting schools. Selected districts are required to have a district leadership team, a school leadership team at each pilot site, and a school facilitator (an internal coach), all of whom are trained to lead the PBIS effort at each school. The school teams must have diverse representation, depending on the school community, but they may be composed of grade-level representatives at the elementary level, content specialists at the middle or high school level, special education teachers, school counselors, administrators, parents, and students. In some schools, these teams meet weekly, every two weeks, or every month, depending on the need.

What is remarkable about the level of engagement in the state's PBIS initiative is that selected districts and schools must invest quite a bit of staff resources and time without any additional funding from the state, other than the cost of supporting participation in the trainings. Rather than distributing grants to schools, the state funds professional development, training, and technical assistance directly to the implementing sites, and resources to defray the costs of school teams participating in these trainings. Since it began implementation, the CDE has

hosted school-based teams, district leadership teams, and district coaches at regional professional development events and an annual summer institute held in Denver (which was recently eliminated). New districts beginning PBIS participate in training sessions that span four days over the course of the year, with additional opportunities for coach trainings. For districts that have already participated for one or more years, additional training opportunities for more targeted and intensive-level needs are provided. In the last three years, the CDE has decided to move to a regional technical assistance model to conduct follow-up to training events and direct technical assistance to districts and schools. For the 2010–11 year, the state will provide 10 regional Technical Assistance Coordinators (TACs) who are assigned to work with each district at least once a month. Training is now offered regionally or in the district to ensure more participants attend while minimizing costs to districts. The intention of the regional TAC approach is to build more capacity at the local district and school levels to sustain the work. A CDE administrator working in the PBIS unit of CDE explained:

> For us, the key is to really sustain and build capacity at the local level, which is the only way that practice will change, and professional development is worthwhile. It is really around getting that technical assistance closer to the students . . . We're not going to just train and hope that it happens. We're going to really make sure that districts and buildings are getting the information they need, as well as the follow-up. And that's been the big push with our latest State Personnel Development Grant. We don't do any training without the planned follow-up as a piece of the model, in addition to the technical assistance that they get [interview, July 13, 2010].

Impacts of the PBIS initiative have not yet been formally evaluated in a way that allows causal inference. However, the state has seen improvements in rates of suspension and expulsion and in special education placements, a reduction in the dropout rate, and a difference in outcomes based on fidelity of implementation. In District 51, where 39 out of 44 schools have adopted PBIS, PBIS coordinator Cathy Haller explained how her district continued to support and sustain the PBIS initiative in the district despite district budget cuts:

> This is our sixth year doing PBIS, and for the vast majority of the schools this is just how they do business. We're not teaching anymore. We're maintaining and we're responding to data. We primarily do facilitators' training rather than whole school trainings to minimize sub costs . . . we rely on in-school and team coaching to do the majority of our staff development. We had one RtI facilitator, one PBS specialist (half-time), and we had another full-time (half RtI, half PBS) person, but we had to cut that person because the district had to cut $12 million. But [district] general fund dollars have continued to support it because we've seen huge, dramatic data responses from the time we got PBIS to now. Our discipline data is just so very much better since we have a system in place, and it is a system. And that's how our schools respond to it. So our district has not been willing to cut funding for that, because we know that we risk it go-

ing away if there's not the support [interview, July 14, 2010].

Response to Intervention

As noted earlier in the section on state mandates, in 2006 Colorado passed the Exceptional Children's Education Act, the state's rules for enacting IDEA, mandating all Administrative Units (AUs) receiving IDEA funds to adopt the RtI model to determine eligibility for special education in the area of specific learning disabilities. Following the state mandate, many districts began to familiarize themselves with RtI, resulting in a flurry of professional development activity. In addition, the state conducted a symposium of school sites that had already been implementing RtI successfully as well as a statewide review to solicit input for building the state's model of RtI and to educate district leaders on the RtI approach. Although some districts had already begun to adopt the RtI approach, the state began to direct supports and resources for schools and districts about RtI and released its own guidelines for the Colorado RtI Model in 2008.

The Colorado RtI Model is "a framework that promotes a well-integrated system connecting general, compensatory, gifted, and special education in providing high-quality standards-based instruction and intervention that is matched to students' academic, social-emotional, and behavior needs" (CDE). RtI shares a common set of principles with PBIS in that it is an approach aimed at building multitiered systems of support that involve school teams in problem solving around the needs of students. Problem solving occurs at the universal level as well as the individual student level, with a focus on using evidence to assess the needs of students, designing and implementing differentiated instruction and interventions, and, if needed, learning plans for every student that monitor the success of the interventions and supports. In essence, the two initiatives are "sister approaches," as Pamela Dean, RtI coordinator for District 51, put it. In fact, PBIS is one component of the Colorado RtI model, which includes as essential components leadership, problem solving, curriculum and instruction, assessment and progress monitoring, positive school climate and culture, and family-community partnership. (For more information, see http://www.cde.state.co.us/rti/.)

To design its professional development approach, the CDE has gathered data in a continuous improvement monitoring process through the regional cadres to inform professional development needs. These needs are organized around the six components of RtI, and then the venue is determined—either face-to-face or online, or a combination). In 2005, initial activities were focused on collaboratively defining the state's RtI model with stakeholders and producing guidelines and online resources for districts. In 2006, RtI leadership training was conducted across the state. In 2007, the department began to identify and convene regional cadres of district RtI contacts to solicit local input on how the CDE could support districts so that RtI can be scaled up. These cadres continue to meet for the purpose of shared learning and as a conduit of information for the CDE. Stakeholders at these meetings give feedback on the guidance the CDE has supplied, and they share their perspective on what next steps are needed from the state. For the last two years, the CDE has also conducted monthly cross-unit meetings within the state agency to collaboratively develop and implement model fidelity

tools and a common message regarding RtI implementation. Since the fall of 2009, the CDE has also offered numerous online professional development courses aligned with the six identified components as well as on implementation of the new Specific Learning Disability criteria.

One of the major challenges of implementing RtI, cited by a CDE administrator, has been disassociating the initiative from special education due to the source of the initiative's funding, and overcoming the "silo" culture within the CDE, in districts and in schools, where RtI may be perceived as a special education initiative. Colorado's RtI approach requires that CDE units work together and that school and district staff across departments work together to address the needs of all students.

Montina Romero, RtI/PBIS coordinator and director of exceptional student services for the Fountain-Fort Carson District 8, designed and initiated her district's RtI strategy more than five years ago. She reported that one of the major impacts of RtI was that more teachers were taking greater collective responsibility for the learning and well-being of all students:

> There's been a significant change in the understanding that a student belongs to all of us, that when a student has a learning need it doesn't become somebody else's problem. We all have to work together to support that student's learning needs. We don't think of an intervention as a place anymore; interventions that happen in the general ed environment are much more effective than these fragmented interventions. We're more thoughtful about support, and we're much more aware at all levels, appreciating the expertise that everybody brings. We all bring something different to the table, and we're much stronger together than we are apart. . . . I think initially, the first two years, we saw some push back: "This isn't my responsibility. This isn't what I'm supposed to do." But I would say at this point, with at least eight out of our 11 schools, [there is] very much an understanding that we all have a responsibility and a very willing attitude [interview, July 12, 2010].

Romero also noted that in her district the expectation for teachers to work together and to dedicate 2.5 hours a month to RtI meetings is not hindered by teacher contracts. This is a critical advantage, given that a major part of RtI work is the requirement for RtI teams to work collaboratively to make evidence-based decisions, problem solve, plan, and evaluate the success of the instruction and intervention. Again, this highlights the critical nature of building in dedicated collaboration time in teachers' schedules in order to implement instructional reform efforts such as PBIS and RtI, and it underscores a common challenge in many school contexts where teachers do not have built-in time for collaboration and contractual restrictions on allowable work hours.

The CDE also administers a number of state and federal grant programs that allow it to implement its instructional improvement strategies for selected districts and schools, particularly those that have been identified as being in need of improvement under the state's accountability system. Federal School and District Improvement Grants allow the CDE to offer the lowest-performing schools and districts funding

and support to improve instruction and student achievement on the CSAP (Colorado Student Assessment Program) tests. Colorado Reading First, PBIS, and RtI also have associated federally funded grants that support the CDE's agenda to improve literacy instruction, school climate, and student achievement. The Closing the Achievement Gap initiative cited earlier in the report is one of the few state-funded incentives offered to selected districts for working with the state department and its prescribed approach to school improvement.

Thus, through a combination of state and federal mandates, grant incentives, and possible sanctions, the CDE has increased its sphere of influence and effectively gained a foothold in some of the highest-need schools and districts to advance its vision and approach to instructional improvement, which was outlined earlier.

There has been a clear impact of these policies on the focus and nature of professional development work undertaken by the schools and districts that are the recipients of federal funds and grants. (These impacts are described in the accompanying boxes on Reading First and mathematics initiatives and in the section above on PBIS/RtI.) However, there has also been an impact on the content and nature of the professional development that is in demand and made available to schools and districts that are *not* heavily dependent on those funds. Almost all of the many small-town and rural districts in the state rely on regional BOCES to serve as the special education AU for their district because of state and federal regulation regarding the minimum size of AUs. Interviews with a sample of nine of 21 BOCES executive directors around the state indicate that a large percentage of BOCES funds comes through the title programs of NCLB and special education funds (both federal and state sources). One BOCES director reported that up to 75% of the BOCES budget was made up of state and federal grant funds, and this situation does not appear to be uncommon among the BOCES.

The 1965 state legislation that established the BOCES had built-in language to ensure that they are governed, supported, and accountable to their member districts (through their boards and Superintendent Advisory Councils, which meet at least six times a year) so that BOCES must respond to the local needs and professional development demands of their members. This would suggest a certain measure of independence and local control. But if one digs deeper, it is clear that when a large portion of funds allocated to BOCES and districts comes from federal and state sources, the types of services that end up being provided must meet the demands of districts striving to comply with the mandates associated with the funds as well as the federal and state regulations that govern use of these funds. Increasingly, this means that the focus of many professional development efforts in the state has been on efforts to improve instruction and student achievement. Thus, even though the BOCES are technically independent of the state agency in terms of governance, they are held directly accountable to state and federal policies through their sources of revenue as well as indirectly by the constituents they serve: the districts that are held directly accountable. In this way, they become intermediary organizations beholden by the source of their funding streams to the school reform agendas of the federal and state education agencies, as well as to their local districts, which also contribute monetary resources to and govern the content and focus of educational services offered by the BOCES.

TABLE 3. A SAMPLING OF STATE AND FEDERAL LITERACY DOLLARS

$99,000,000	Five-year total award of Colorado Read to Achieve grants
$62,000,000	Six-year total grant award for Reading First Schools
$57,000,000	Average annual Title I and II schools and district consolidated reading resources
$2,584,846	Family Literacy grants and Migrant Title III literacy grants
$500,000	More than one-third of McREL services annually for Professional Development and research
$328,000	Average annual grants for literacy teacher professional growth and student writing development from state and university partnerships
$315,000	State and regional IDEA "set aside" reading initiatives

Source: CDE (2007a, p. 17).

The high level of teacher participation in content-focused professional development evidenced in the 2008 Schools and Staffing Survey (89% of surveyed teachers) and on reading instruction (69%; both are higher than the national average) seem to lend support for widespread investment in districts and schools in professional development focused on improving student achievement. (See the accompanying box for Colorado Reading First for an example of how grant funding to pilot schools led to dissemination of CRF literacy professional development and practice across schools within districts.)

The state has also signaled its commitment to literacy-related instructional improvement through funding support. In a state review on its ELA and literacy standards (CDE, 2007), a sample of federal and state cumulative funding sources for literacy work was published (Table 3).

This high level of expenditure in Colorado for state and federal literacy initiatives reinforces the idea that the CDE was investing its organizational time and energy as well as significant resources to support improvements in literacy instruction across the state. This commitment may be associated with the higher than average participation in professional development on reading instruction reported by teachers on the 2008 Schools and Staffing Survey and the 2009 NAEP Teacher Questionnaire.

The Role of Professional Development Intermediaries and Other Professional Development Providers

Although state and federal mandates have served to advance the state's instructional improvement agenda, there is wide recognition that the state has limited capacity to support professional development services across 183 districts, including many small rural districts located in remote areas far from the state capital. It relies, therefore, on

Colorado Reading First

Colorado has invested significant monetary resources in its state literacy initiatives. From 2002 to 2009 the state also received significant federal grants to support its Colorado Reading First (CRF) pilot project. Through this grant program, the state has been able to support two cohorts of schools—85 schools across 54 districts, covering approximately 10,000 students—all of them eligible by way of Title I status. All CRF schools were required to offer teacher professional development on the selected reading interventions, which must be based on "scientifically based reading research"—a set of criteria established by the federal Reading First grant program. Schools could select from a range of external professional development providers to train teachers and reading coaches in the selected reading program. The reading coaches were required to complete a two-day intensive training, and then meet regularly on a regional level to network and discuss common problems of practice, walk through and observe classes where CRF is being implemented, discuss what they saw, and develop next steps for action. At the school level, these coaches led formal professional development sessions with teachers once a month, and more informal coaching sessions. Another layer of support came from regional consultants employed by the CDE to make regular visits to CRF schools and offer monitoring, training, and support for implementing the CRF strategies and interventions with fidelity.

Evaluation reports have yet to show the impact of CRF on student achievement on the state CSAP scores in reading, and NAEP scores do not seem to have improved between 2003 and 2009. Nevertheless, CDE administrators and local district leaders believe the program had long-lasting impact not only on the schools that were funded by the program but also on other non-CRF schools in the districts, as well as higher grades and other content areas in the schools that were funded.

Shirley Stevens, the Colorado Reading First coordinator in District 11 (Colorado Springs), which invested in sending additional reading coaches to external training events for coaches and is currently using stimulus funds from ARRA to sustain the work, reported that in one of the three original CRF schools, which were all Title I schools, 100% of students achieved the "proficient" level on the CSAP, prompting other schools in the district to seek to replicate the CRF practices. Stevens also reported that the Reading First strategies were extended up to the fourth and fifth grades and disseminated by district leaders to other schools such that nearly all of the 21 principals in her district are using CRF strategies in their schools. She described the impact of CRF in her district:

> I think the broader impact can be compared to throwing a stone in a pond and the ripples it creates. The ripples get bigger as you go further out, though the strength of the ripple is not as strong on the outside as it is on the inside. For us, it's a beginning. I've been here 10 years, and when I came here, there wasn't the kind of understanding that there is about reading instruction, and these collegial discussions weren't going on . . . but everyone is impacted by [participation in literacy training] because they're having professional learning communities and they're having dialogues about what works best, data meetings to discuss the data—"How did you get what you got?" and "Why didn't you do better?" and

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> "How can you improve?" and "What's the feedback?" So that involves the whole school, it's not just a grade-level approach. . . . The other thing that happened at the same time was that Response to Intervention was established in Colorado through a change in the federal government's requirements for how kids are identified as being qualified for special ed. So some of our work with PLCs, Response to Intervention, and Colorado Reading First kind of dovetailed altogether. We had a little bit of experience with PLCs, but I think what's happened is we've been given the time and resources with the grant to make that work really bloom. And we still use that model—it's especially effective. It's a way of empowering leadership in teachers, I think. And the other thing that I liked about PLCs and that I've seen schools do successfully is to look at those kids that are at risk, why they are at risk, and what we can do about it [interview, June 11, 2010].

Stevens also emphasized the value of the coaching approach and the importance of collegial, nonevaluative coaching that is nonthreatening to teachers to support teaching and learning. She also noted that the approach to designing literacy interventions initiated by Colorado Reading First had ripple effects in other grade levels, including the middle and high school levels.

In another school, which participated in the second cohort of Colorado Reading First over four years, the principal reported significant gains in reading scores. On the basis of this success, teachers in this CRF school were asked to offer model lessons for teachers in other district schools, modeling small-group instruction and five strategies for teaching reading. In this way, all elementary schools in the district, as well as teachers at higher grades in the Reading First schools, had some exposure to Colorado Reading First in some way. The principal of this school also emphasized the importance of the literacy coaches in sustaining fidelity of implementation, having seen a slip in reading achievement when fidelity was not emphasized. After the CRF pilot formally ended, the district was able to continue to support a half-time literacy coach with district funds. This principal also reported extending the strategies from Colorado Reading First to the school's math improvement program, using parallel strategies and school funds to hire a part-time math coach:

> We totally redid our entire math block into a 90-minute math block, and it models the Reading First model. We have small group instruction, whole group instruction, and then we'll go into targeted group instruction, and math interventions that are specific to the kids' needs, just like Reading First. . . . I just saw how those Reading First strategies—it was just phenomenal, the growth that these kids made when we adhered to allow that research-based type of instruction, and I just didn't see why it wouldn't work in math. . . . So, similar to how we did a book study on how the brain learns to read, we did a book study on how the brain learns math. We even progress-monitor just like we learned with our Reading First . . . we're going to continue on because it's just good stuff [interview, June 24, 2010].

Last, this principal emphasized the importance of time for teacher collaboration, both within grade levels and vertically across grades, to work on issues of reading, math, writing, and data collection, and for professional development. The district allows two weekly occasions (early start or early release), totaling 1.5 hours per week, for teachers to meet to work on literacy and math issues, drawing from other nonteaching days in the teacher contracts, to allow teachers time to collaborate.

intermediary organizations to implement strategies for school reform. In the state's strategic plan "Forward Thinking," the CDE acknowledges its limitations and seeks to partner with external entities with existing infrastructure to support its strategies in the field:

> The mission of providing more and better service to the field can be an enormous undertaking. While CDE may not be prepared to do it all, the department can help bring it all together through more effective partnering with entities that already have the necessary infrastructure. More specifically, the department envisions supporting: (1) the expansion of BOCES [RSA] operations from 8 to 12 providers; (2) the provision of professional development, especially that which is geared to preparing teachers for hard-to-staff positions; and (3) the training that is needed to help Response to Intervention (RtI) gain traction [CDE, 2007, p. 15].

In Colorado, intermediary organizations (BOCES, RSAs) were created purposefully by the state legislature to build the infrastructure needed to support instructional improvement efforts across the state, particularly in remote and rural areas, while other professional development providers emerged on their own in a climate of innovation and local initiative. Each serves its own kind of role, depending on its position within the education infrastructure, but both kinds of professional development organizations are also influenced heavily by the federal and state mandates that shape the service demands of local districts.

BOCES. The BOCES were created by state law in 1965 to offer a means for two or more local school districts to cooperate in providing services when the districts by themselves cannot afford the service, or find it economically advantageous to share costs and programs. Colorado now has a regional network of 21 BOCES, but this number fluctuates as they consolidate, and district membership is fluid. Many of the BOCES serve as Administrative Units to administer federal special education funding for small districts and pool the resources of member districts to share professional development resources and opportunities within and even across the BOCES. For example, information about upcoming professional development events across districts in a region is collected and disseminated by the BOCES so that when one district offers a professional development event in which an outside expert is invited to lead, other districts in the same BOCES or even across BOCES will be invited to participate in the event. In this way, rural districts that would otherwise have few resources for professional development are still able to access the services and opportunities delivered and shared by the larger BOCES and districts in its region.

As noted above, even though the BOCES are by law accountable to their member districts and governed by local boards and Superintendent Advisory Committees, their independence is limited by their responsibility to administer federal and state programs according to the rules. It was apparent from interviews with nine BOCES directors across the state that there is also a normative expectation to cooperate with and support the state's school reform initiatives. One BOCES executive director indicated that there has been a shift in recent years in the thinking of the BOCES about its relationship with the CDE:

> We've got a new commissioner—I shouldn't say "new" since he's going into his fourth year—who's really

changed the face of the Colorado Department of Education. He was a local superintendent. And it's really changed the whole culture of where we're at as a BOCES association, and what we're trying to do from the standpoint of partnering with CDE. . . . Some of our BOCES members are still distrustful of the Colorado Department of Ed. They don't like the oversight around implementing regulatory kinds of things. They're not comfortable with that. They feel that they best serve their member districts with working with what those districts need, as opposed to what the CDE tells them they need. What I'm seeing with the new guard coming into the BOCES association (myself included) is that it's anything but that. I see the new guard saying, "Come on in, CDE, let's work together around improving student achievement, and not only that, help us fund it, too. . . ." What we're seeing is that we can't be separate empires, in silos, trying to do our own thing. . . . The commissioner has given us a vision and a direction to go, and it's around reducing that achievement gap, and it's really around improving schools. And I think he's got pretty broad-based support around the state. And as a service agency, we get pulled into that by—that's where our districts want to go and we need to help them get there [interview, July 21, 2010].

Results from interviews with BOCES directors, other professional development organization directors, and district administrators also suggest that in recent years local district leaders have been more likely to buy into the state's reform agenda, particularly under the leadership of the current state education commissioner, who has sought to reinvent the image of the CDE as a service organization that not only holds schools accountable but is also responsive to local district needs. Interviews with BOCES directors also suggest that there may be a difference in attitude toward state leadership between the old guard and the new guard, with the latter (especially those being hired from outside Colorado) more likely to buy into state control and expectations. Many local school districts still struggle to comply with federal and state mandates, and there is lingering distrust of the CDE, particularly as one gets further away from the state capital, but there appears to be a growing sense of responsibility among BOCES directors and school leaders across the state that a focus on improving student achievement, even with imperfect assessment measures, is the right thing to do for children.

The Role of Professional Development Organizations. The BOCES and RSAs were established by the state legislature to offer a basic infrastructure to serve the needs of local districts. A second, equally important, component of the professional development infrastructure in Colorado comprises regional education laboratories such as the Mid-continent Research for Education and Learning (McREL), which disseminates education research and supplies research-based professional development; WestEd, providing technical assistance to the state as the Southwest Comprehensive Center (SWCC), including support for standards and assessment adoption and implementation; and the Mountain Plains Regional Resource Center (MPRRC), providing technical assistance for state special education services. These organizations work directly with districts and schools and can be con-

sidered professional development intermediaries because the CDE contracts directly with them to support and implement their school improvement agendas. Other professional development intermediaries are Cambium Learning Group's Sopris West division (making expertise available for the state's RtI and Reading First initiative), for-profit professional development providers such as Pearson, and several universities such as Western State and Jones International University that have offered online professional development options to teachers, supporting the state's Colorado Online professional development opportunities.

There are a number of other professional organizations that can also be considered professional development intermediaries in that they work together with the CDE to support CDE initiatives. Local affiliates of national professional organizations (e.g., the Colorado Council of Teachers of Mathematics, the Colorado Language Arts Society), as well as local professional organizations such as the Colorado Council for Learning Disabilities, Colorado Staff Development Council, Colorado School Board Association, and Colorado Association of School Executives, have collaborated with the CDE and with one another to offer professional development.

The Role of Independent Professional Development Providers. Another equally important component of the professional development infrastructure in Colorado is the multitude of well-established independent professional development providers that grew out of Colorado's previously more liberal environment of innovation associated with local-control politics. Although local control is less of a reality now than it was in the past, a foundation for establishment of highly innovative and high-quality approaches to school improvement, instructional improvement, and professional development was laid during that previous era. Independent local providers such as the Public Education and Business Council; the Rocky Mountain Middle School Math and Science Partnership; the Center for Transforming Learning and Teaching (CTLT), based out of University of Colorado-Denver; and Doug Reeves (advisor to the CDE on the Closing the Achievement Gap initiative) and his Denver-based Leadership and Learning Center (data-driven decision making and leadership) are prominent professional development providers known for the quality of their approaches.

There have also been a number of educators working in Colorado who later became national leaders in professional development in association with the National Staff Development Council, notably Jim Metzdorf, early scholars of the Concerns-Based Adoption Model (Gene Hall, Susan Loucks-Hordsley, Shirley Hord, and William Rutherford), Susan Schiff, Richard Sharkey, Kay Shaw, and Joellen Killion. These individuals had perhaps a greater national influence, but their presence in Colorado may be another indicator of how the profession and professional organizations have made their mark to advance innovative notions of professional development in the state.

Another source of innovation in professional development that should be noted is the university-based Professional Development School (PDS) models, which were pioneered at the University of Colorado at Denver and Boulder and have since taken root in a number of teacher preparation institutions across the state, including the University of Colorado at Colorado Springs, University of Northern Colorado, and Colorado

State University. Of particular note is the 23-year-old Partners in Education (PIE) PDS initiative between UC-Boulder and five Front Range school districts. The PDS model focuses on building a reciprocal and mutually beneficial relationship between local school districts in which student teachers are placed and the university teacher training program. School and university resources and expertise are shared such that student teachers benefit from learning in environments that are more congruent with professional expectations of the university, and local schools benefit from the resources and expertise provided by university staff, particularly with regard to professional development of school staff, including administrators, inservice teachers, and new teachers completing induction programs.

The current approaches to professional development and instructional improvement embraced by the CDE (in terms of its vision for engaging schools in cycles of collaborative inquiry into student outcomes, needs assessments, progress monitoring, implementation, and tracking results as feedback) seem to mirror the approaches that these independent professional development providers have taken, and that leading local scholars and practitioners have popularized on a national level (Robert Marzano's formative assessment research, Doug Reeves's systems of data-driven decision making, and emphasis on building professional learning communities in other professional organizations' approaches to professional development). The fact that professional development providers are for-profit or independent from the state education agency does not preclude the possibility of an engagement with and influence on state policies. However, causal inferences cannot necessarily be made that these innovators *influenced* state policies and approaches. This observation of consistency between state approaches and the approaches of professional development partners and providers might then be characterized as a "convergence" of thinking about best practices in professional development and instructional improvement that has emerged in the state, and to some degree in the nation.

On the flip side, even though professional development providers are independent from and lie outside of state control and accountability, like the BOCES they are subject to the demands of the districts and schools they serve, and thus to the mandates of the state and federal governments. In some organizations that receive federal funding directly, the connection between the professional development work they carry out and the federal education agendas they serve are more obvious (e.g., the Center for Transforming Learning and Teaching, which received federal funding to work on data-driven decision making as a means to support whole school reform efforts; and the Rocky Mountain Middle School Math and Science Partnership, which received National Science Foundation funding). However, even in organizations not funded directly by federal or state funds, the impetus for districts seeking professional development expertise from these organizations increasingly reflects their need to address state and federal mandates. Suzanne Plaut, vice president of education for the PEBC, noted that client districts approaching her organization for services increasingly seek their expertise with the goal of improving instruction and student achievement scores:

> Almost always now, in the first conversation I have with clients, in sort of an intake process, when I ask them, "How did you find us? What are you hoping to do?" scores will always

> come up, as opposed to "We want our students to be brilliant," or "We want them to be thinkers," or "We want to honor our teachers as professionals." It's like, "Well, last year we didn't make AYP," or "Last year we were on watch," or "Last year we were low-growth." It's some sort of accountability data that they're so much more aware of than they used to be. Or it's things like "We need to figure out how to implement the new state standards that are coming out. Can you help us make sense of them?" or "They didn't used to test science on the state test, but now they do, so we'd really love some professional development in science. Do you do that?" So I think it's very driven by both state or federal mandates, contexts, pressures [interview, July 28, 2010].

Plaut also noted that one of the organization's major funders required it to conduct an evaluation to assess the effectiveness of its programs in relation to gains in student achievement, suggesting that this trend toward outcomes-based evaluation is part of a larger cultural shift. Plaut did not bemoan this trend or think that it downgraded the quality of her organization's professional development offerings, and she suggested that perhaps this focus on student outcomes has supported an appropriate focus on the ultimate ends of professional development and instructional improvement.

Discussion and Conclusion

The Role of State Policy in Colorado's Professional Development Landscape

Results from this policy case study suggest that the Colorado professional development landscape has been shaped by several factors. The approaches to instructional improvement and professional development observed in the state reflect the roles of (1) innovative professionals and independent professional development organizations that laid the foundation for a wide-reaching professional development infrastructure and contributed to broadly adopted ideas about "best practice" in school and instructional improvement; (2) a more regulatory environment, with federal and state mandates (along with grant funding and sanctions as incentives for compliance) driving the focus of instructional improvement efforts in schools and districts, and driving the demand for particular types of professional development; and (3) a cultural shift in local (and national) education leaders' understandings of the "right thing to do" and a moral imperative to improve student achievement and close achievement gaps.

Results from this case study also suggest that even in a local-control state, standards-based systemic reform (as envisioned by Smith and O'Day, 1991) may have worked over the last two decades to gradually change the culture of educational institutions in Colorado, leading to a convergence of thinking among federal, state, and local education leaders about the priorities for education reform and strategies for instructional improvement. Even independent providers of professional development have followed suit to meet the demands of districts trying to comply with federal and state mandates. This convergence of thinking about the best approaches to school and instructional improvement may be what is driving the high participation in professional development focused on content, reading instruction, and the teaching of English learners observed in the SASS 2008 dataset.

However, there are clearly challenges in implementing mandates. Results from this case affirm the well-known reality that

mandates alone are insufficient to support schools and districts in acting in desired and productive ways, particularly because the mandates themselves cannot build capacity in the schools and districts to implement the reform. In federal and state initiatives that *are* well funded (literacy initiatives, PBIS, RtI, School and District Improvement, and Closing the Achievement Gap grants) and that make other resources and supports available to districts and schools to build capacity (e.g., professional development, technical assistance, regional consultants), school leaders and staff are more likely not only to buy into the strategies, rules, and regulations imposed on them but also to implement the strategies thoughtfully and consistently with the expectations of the reform; they are also more likely to sustain the reforms even after funding has run out because of the capacity built up within the school organization. (See the box on the CDE's Reading First, and the section on PBIS, and RtI initiatives for evidence that supports this observation.)

This has implications for Colorado's accountability policies, such as the statewide SSAS and federal NCLB accountability policies. In 2009–10, only 56% of Colorado's approximately 1,700 schools met Adequate Yearly Progress targets under NCLB, and 27% of Title I schools (164 schools in 2009) in the state were identified as being in "need of improvement" at some level (EDFacts, 2009). A small percentage of schools and districts receive funding through the federal School and District Improvement Grants, and an even smaller percentage receive state funding through the Closing the Achievement Gap grants; but the majority of schools identified as being in need of improvement under NCLB or as being "turnaround schools" under the SSAS do not receive either additional funds or technical assistance to support their whole-school reform efforts. Rather, they are left on their own to leverage their existing Title I, II, and III resources (if they receive them) to purchase services from external providers or devise their own strategies for improving instruction and student achievement. The accountability policy assumes that in these schools there is local capacity to devise an approach to school turnaround, or that there are external resources such as the BOCES or other providers to lend sufficient support. The executive director of the Colorado BOCES Association acknowledged that there is a gap in BOCES capacity and resourcing to meet the needs of these turnaround schools, and that it is quite a challenge to deliver services to these schools, particularly when the BOCES receive no additional funding from the state to provide these services.

A last important note is that it is not the state or federal strategies alone that have led to this convergence in statewide adoption of research-based professional development and school improvement approaches such as PLCs, data-driven decision making, and progress monitoring. A longer history of local control, innovation, and "Western frontier" spirit aided the flourishing and establishment of independent professional development providers, whose innovations (data driven decision-making, use of formative assessment, progress monitoring) have become deeply embedded in the thinking and culture of school leaders locally and nationally. Without this prior hands-off approach to governance, it is doubtful that Colorado would have developed a sufficient professional development infrastructure that can disseminate and carry forward the state's school reform agenda. It is clear, though, that the CDE by itself, underfunded and understaffed, and the

BOCES, with no fiscal support from the state, would lack the capacity to serve the needs of all districts in the state with their diverse populations and needs. Also critical to the state's education reform efforts are the PLCs and collaborative efforts across the state's professional organizations. The CDE did well to seek out, build common understanding, and collaborate with organizations with similar agendas to share the resources and expertise needed to achieve common goals. State education leaders would do well to continue to build these partnerships and foster a hospitable environment in which professional development intermediaries and independent professional development providers can continue to innovate and experiment with new approaches to instructional improvement and professional development.

Independent Providers of Professional Development in Colorado

PEBC (Public Education and Business Coalition)

The PEBC is an independent organization that was founded 27 years ago by the Public Education Coalition (a local education fund supported by the Ford Foundation) and the Colorado Business Alliance for Youth. The PEBC has three lines of work: professional development, the Boettcher Teachers Program (an urban residency program), and information and analysis (EdNewsColorado.org). PEBC is supported by foundations and corporate funders, as well as client districts and schools that contract with them for professional development services. Nationally, PEBC has worked with more than 17,000 principals and teachers across 1,000 schools and one million students. Currently, PEBC works with school organizations in nine states, and within Colorado it offers professional development services to eight districts in the Denver metropolitan area as well as a few private schools. Districts or schools typically contract with PEBC for 20 to 40 days of professional development over a year, usually funded by district budgets as well as substantial grants and subsidies from corporations and foundations.

PEBC is most well known for its Comprehensive Literacy and Instruction Program. However, PEBC's model is not a one-size-fits-all approach. Its staff developers collaborate with teachers and school leaders to create comprehensive, needs-based professional development offerings that support the schools' particular improvement goals. PEBC works through leadership teams to build capacity in order to sustain long-term change efforts. It uses a variety of professional development strategies to support job-embedded professional learning and instructional improvement, by way of study groups, lesson study, lab classroom experiences, curriculum design and planning, and teacher collaboration. PEBC offers schools a range of individual "à la carte" services. PEBC's approach to professional development is at the whole-school level, rather than an individual-teacher level, in order to support professional learning communities. One of the hallmarks of PEBC's approach is its "national expert labs," as well as "peer learning labs" (onsite peer observation), using structured protocols as a vehicle to focus teachers and as a way to break down isolation and support collaboration.

A 2009 external evaluation of PEBC's professional development, conducted by the University of Colorado-Denver (Connors, Challender, Proctor, Robinson, & Walters, 2009)

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found that students in all 11 of the literacy target schools in the sample showed statistically significant improvement in reading comprehension from fall to spring on school-selected reading tests. On the CSAP reading assessments, 10 of 11 literacy target schools showed either high growth or high achievement, although all remained stable in the percentage of students scoring at or above proficiency between 2007 and 2009. Surveys of leadership team members found that nearly three-quarters of respondents rated their team's effectiveness highly, and many participants reported that the PEBC professional development contributed significantly to development of effective school leaders and leadership teams.

PEBC does some work with schools that have been identified as being on watch or low-performing on the Statewide System of Accountability and Support. Although PEBC does not market itself as an "intervention," about a quarter of schools approach PEBC because they are struggling or have been identified by the state as being in need of improvement.

Suzanne Plaut, vice president of education for PEBC, noted a shift over the last few years in the needs reported by districts and schools that seek out the PEBC for their services. When asked if she thought schools were resentful of the state's accountability policies, or whether they were taking ownership of addressing achievement gaps and low student achievement, she responded:

> What I hear is as very much "We need to be on this." That's the way they're talking now, in a way they didn't talk five years ago, and it's because the state has pushed them to that awareness. And we talk that way now too. We used to talk about impacting teachers, and now we talk about impacting student achievement. That shift is in the entire field . . . my sense is that every principal feels responsible for that, and almost all teachers see that that's actually their responsibility. . . . The conversation is about "how do we get there," as opposed to "why do we need to do this?" [interview, July 28, 2010].

(Learn more about the Public Education and Business Coalition at http://www.pebc.org/.)

The Rocky Mountain Middle School Math and Science Partnership

he Rocky Mountain Middle School Math and Science Partnership (RM MSMSP) was founded in 2004 through a substantial National Science Foundation grant. The primary applicant was the University of Colorado Denver, which was joined by four other universities (University of Denver, Metropolitan State College, Colorado State University, and Fort Lewis College) as well as the Front Range Board of Cooperative Educational Services and seven school districts. The RM MSMSP has served more than 600 middle-level teachers (primarily grades five to nine) over the first six years of the partnership, for the most part offering content-area courses in mathematics and science during summer institutes and over the academic year, as well as structured pedagogical follow-up courses during the academic year. Partner districts give input on the courses to be offered on the basis of lo-

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cal needs, and the course content, based on state standards, is shaped by a "triad" of course instructors (university science, technology, engineering, and matmatics (STEM) faculty, school of education faculty, and practicing teachers or district content administrators).

The principle investigators and co-directors, Doris Kimbrough and Carole Basile, indicate that in many cases middle-level teachers of mathematics and science are often teaching "out of field," meaning they did not major in the subjects they teach, and many had gaps in their content knowledge. Thus they report that the courses offered are primarily content-focused (80%), related to the curriculum that teachers are expected to teach (based on the Colorado State Content Standards), and to a lesser degree on pedagogical strategies for teaching the content (20%). However, the structured follow-up (SFU) courses taken during the school year following a summer academy course are primarily focused on best pedagogical practices for implementing the content at the middle-level grades. The SFU courses meet four times on Saturdays (about seven hours each day), and during the course teachers are expected to conduct an action-research project in their classrooms by trying out an instructional innovation (e.g., making lessons more inquiry-oriented, or using strategies for supporting English learners). The format of a few of the SFU courses (e.g., those offered by the Jefferson County Public Schools, which also benefited from the state's Math Science Partnership grant) are in the form of lesson study, a professional learning protocol originating in Japan, in which teachers collaboratively reflect on how a lesson may be designed and delivered, implement the lesson, and assess the results in terms of student engagement and learning. The RM MSMSP faculty almost universally agreed that "teachers 'don't get the content until they have to use it in the Structured Follow-Up assignments.' The instructors also observed that content is reinforced through the questions and responses provided as teacher learners worked through the development of demonstration lessons" (RM MSMSP, 2005, p. 2).

The RM MSMSP science and mathematics courses are designed to create a tiered learning experience in which teachers are exposed to more and more advanced content in their content courses (introductory, intermediate, and advanced). Teachers who have taken three or four content courses through the program are also given an opportunity to participate in a Research Experience for Teachers (RET), which partners them with STEM faculty at the university to conduct independent research projects in science or engage in an in-depth study on a number of advanced mathematics topics.

All teachers in partner districts who participate in the RM MSMSP are eligible for a stipend for each course taken (above and beyond the tuition cost of the course), which are funded by the NSF grant. These stipends range from $1,200 to $3,000 per course. Kimbrough and Basile suggest that most participants are initially motivated to take courses by these stipends, as well as the opportunity to earn graduate credits and continuing education units that can be applied toward the next salary step, or for license renewal purposes. Once they have participated in the program, however, many teachers see the value of the courses as a means to support their instruction and the achievement of their students. Mathematics teachers at one participating middle

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school reported: "I am more willing to take risks in using the graphing calculator and help my students take the 'error' out of computation. I have more confidence in allowing kids to try richer problems. This is a stretch to get beyond the drill and practice"; "I tutor better because I have a better idea of the students' frustration. When the students do 'get it,' it is exciting" (RM MSMSP, n.d.).

An evaluation study is currently under way to assess the effectiveness of the project, in terms of both teachers' content knowledge and impact on student achievement. Kimbrough and Basile reflected on some of the major challenges encountered in doing research on the effectiveness of the project. First, because science is not assessed systematically from year to year on the CSAP, there is little comparison data to assess student growth in science. Second, despite the best efforts of the program to retain teachers in the project, there was high mobility among teachers (teachers changing grade levels or subjects taught, or moving out of the school and district), making it difficult to measure impact on teachers and students over the long run. The directors report that of the 600 teachers served by the program, only 30–40 math teachers had actually remained in the program long enough to measure the impact of the program on their students' achievement. This mobility issue also has repercussions on the ability of the program to improve the quality of math and science teaching in a school as a whole. Efforts to stimulate school renewal and reform are severely thwarted by the inability to sustain the social networks in schools long enough to effect real change.

Nonetheless, Kimbrough and Basile cite other successes, in particular the professional learning communities that arose from the collaboration of university STEM faculty, school or education faculty, and practicing educators. This collaboration had benefits for the quality of the courses that were offered, and it also led to improvements in the pedagogical practices of university STEM faculty. Other benefits cited by Kimbrough and Basile that arose from the partnership were changes in student motivation and attitude in summer camp programs, improved odds of students scoring proficient on the CSAP as a result of increased course taking by their teachers, and a rise in teacher self-efficacy.

MISSOURI

Building a Statewide Infrastructure to Support Professional Learning: A Coherent System within Reach

Case Study Overview: Why Study Missouri?

Missouri represents a case where the state government has steadily invested in the professional learning of teachers. Progressive state legislation and a steady investment of money over the past two decades have helped build a statewide infrastructure for professional development. The strengths of Missouri's professional development policy originated in several significant pieces of legislation: the Excellence in Education Act of 1985 and the Outstanding Schools Act of 1993.[5] Through enactment of this legislation, the state broadcast a commitment to improve education and signaled its belief in investing in the learning of professionals as the vehicle for school improvement. These policies invested in establishing a statewide regional network of professional learning through the Regional Professional Development Centers (RPDC; see Figure 6).

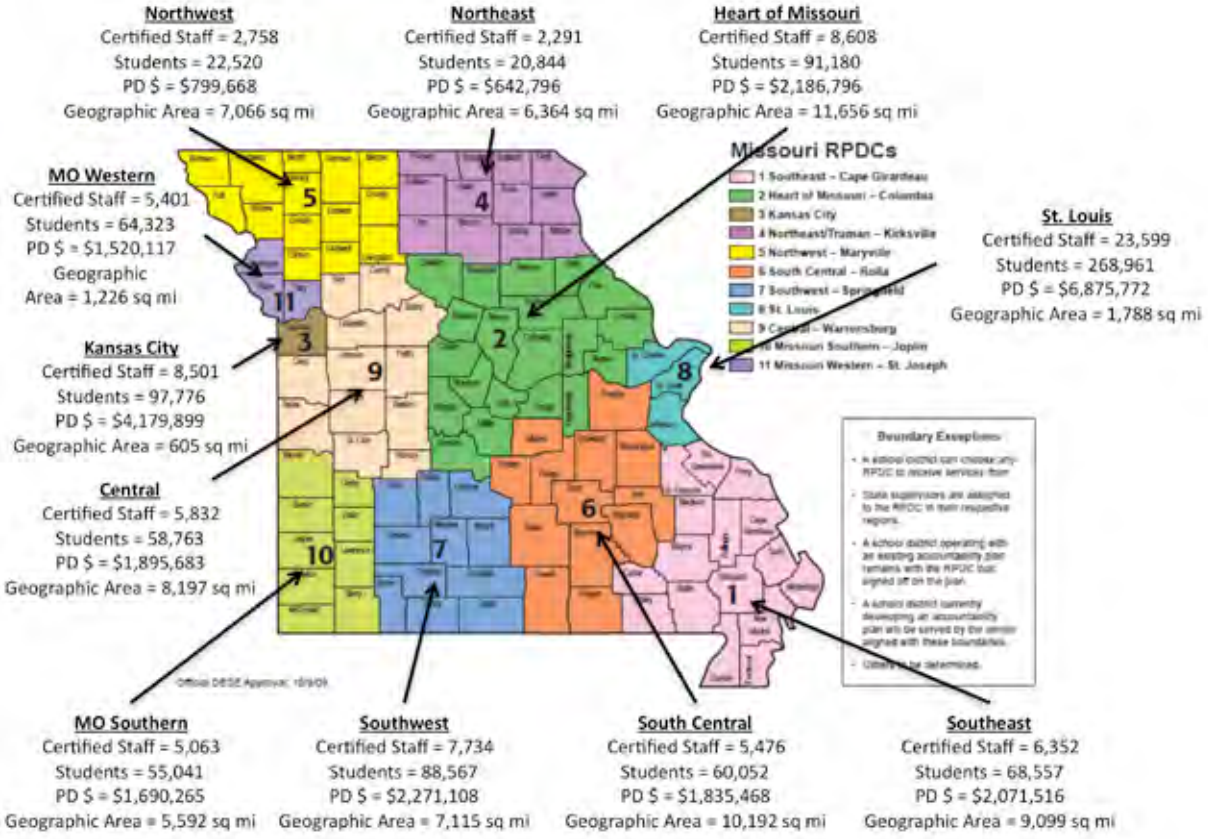
To ensure equitable access to professional learning opportunities for all educators, legislators connected the RPDC network to the state system of higher education and located the centers strategically across the state by positioning them within a two-hour drive of every school in Missouri.[6] Legislation also established school-based Professional Development Committees (PDCs), made up of teachers, as the decision-making body that decides how to spend earmarked professional development dollars. In so doing, legislators put control of professional learning into the hands of teachers. In these ways, the Outstanding Schools Act signaled the importance of paying attention to teacher learning needs and made explicit and attainable the expectation that all teachers and schools invest continuously in their own professional learning.

Missouri's professional development efforts as a state are noteworthy for a far-sighted approach to professional learning, significant investment of resources to support K–12 education, and the enduring support of state policymakers over the past several decades. The steady supply of professional development resources in Missouri provides a unique opportunity to examine (1) how government can construct a statewide infrastructure that links policy initiatives to local actors in a way that is conducive to improving practice, (2) how government can develop mechanisms that are responsive to teaching and learning needs that arise from the field, and (3) how government can enact

[5] *See "Excellence in Education Act" (1985) and "Outstanding Schools Act" (1993) for more information about this legislation.*

[6] *See Figure 5.*

FIGURE 5



policies to hold schools accountable for making steady learning gains while remaining responsive to educators' needs.

Missouri has invested steadily in teachers' professional learning and developed a comprehensive statewide infrastructure and system of professional supports to local schools. According to recent surveys of teacher participation rates, Missouri teachers are participating in professional development at higher than the national average rate: 89% participate in content-focused professional development (according to the 2008 School and Staffing Survey) and according to the 2009 NAEP survey of fourth grade teachers participation was 88% for language arts professional development and 91% for language arts curriculum.

Missouri's Educational Context

On average, the student demographics in Missouri resemble those in many other states in the nation. Missouri's public education system serves more than 900,000 students, across 554 districts in 2,300 schools (EDFacts, 2009). In Missouri, 4 out of 10 students come from economically disadvantaged households (see Table 4). In addition, data from the 2009 American Community Survey (U.S. Census Bureau, 2009) indicate that the median income in Missouri is below the national average ($31,539, compared to $34,483), and the proportion of adults with a bachelor's degree (24.5%) also lags behind the national average (27.4%). These are two indicators

TABLE 4. MISSOURI'S K–12 PUBLIC SCHOOL STUDENTS: DEMOGRAPHIC CHARACTERISTICS

Student Enrollment	Number of Students (MO)	Percentage of State Total	Number of Students (National)	Percentage of National Total
All students	920,037		51,455,471	
Economically disadvantaged students	374,142	40.7	22,686,136	44.1
Limited-English-proficient students	16,338	1.8	4,539,740	8.8
Children with disabilities (IDEA)	132,946	14.5	6,894,814	13.4
White	699,262	76.0	28,036,802	54.5
Black, non-Hispanic	163,988	17.8	8,539,805	16.6
Hispanic	35,582	3.9	11,094,577	21.6
Asian/Pacific Islander	17,131	1.9	2,475,281	4.8
American Indian/ Alaskan Native	4,074	0.4	588,938	1.1

Source: EDFacts (2010). SY 2008-09 (http://www2.ed.gov/about/inits/ed/edfacts/state-profiles/missouri.pdf).

typically shown to correlate with K–12 student achievement.

Missouri's per student expenditure is $9,532, which is just below the current national average of $10,297 (EDFacts, 2009). In addition, Missouri's school districts vary considerably in terms of enrollment size and demographics. For instance, the state has large urban school districts (e.g. St. Louis City, which enrolls 27,421 students), replete with the challenges of violence, drugs, and high incidence of teacher turnover that are common in large urban districts nationwide. Missouri also has many small schools in rural areas (such as Lesterville, which has one K–12 school with 286 students). Many of Missouri's rural districts are also located in high-poverty regions within the state. Consequently, educators across all levels of the system acknowledge that the needs of teachers and students in Missouri vary with the educational context.

The overall achievement of Missouri's students on national achievement tests such as the NAEP does not stand out. The new commissioner of education, Chris Nicastro, described the overall academic performance of students in the state of Missouri as average: "We're in the middle; our performance matches our geography" (interview, June 28, 2010). NAEP scores confirm that Missouri's students score

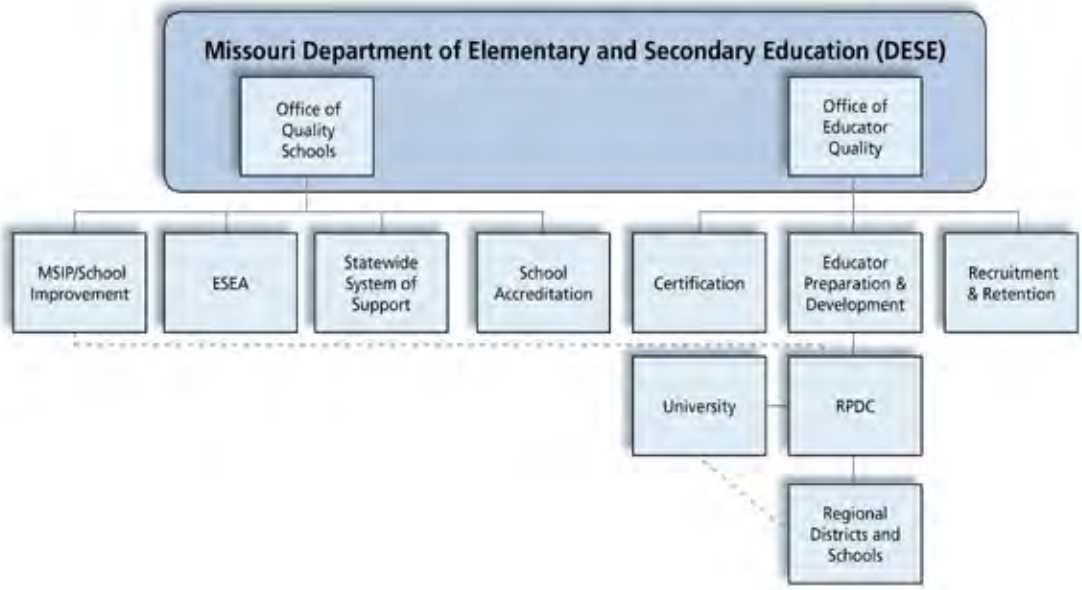
just above the national average in math and reading. However, score trends on the NAEP (comparing data from 2005 to 2009) indicate that students' scores in mathematics are slowly and steadily increasing. Over the past four years, Missouri's eighth grade math scores on the NAEP test outpace the achievement gains made by all but three states. Meanwhile, Missouri's reading scores have held constant. Although a causal relationship cannot be established, it is noteworthy that the recent upward achievement trends in Missouri coincide with the state's tightening of accountability measures for schools and districts to meet high performance standards and with the state's increasing control over the RPDCs.

Missouri's Professional Development Policy Context

For the past 17 years, Missouri has steadily invested money in the professional development of educators and built a statewide infrastructure to support the ongoing learning of teachers and educational leaders. Only recently, however, has the state Department of Elementary and Secondary Education (DESE) sought to exert more influence over the professional development infrastructure it has built. The RPDCs' position in relation to DESE is located in between the Office of Educator Quality and the regional districts that each RPDC serves. As the map (depicted on page 46) shows, the RPDC is positioned between DESE offices (Educator Quality and Quality Schools) and the regional school districts.[7] (See discussion of how the RPDC adds value to the system as an intermediary in the section "Missouri's Professional Development Landscape" below.)

The particular and cumulative legislative investments that Missouri has made in the professional development of teachers and school leaders has produced two substantial dividends: local systemic capacity to provide consistent and effective supports to low-performing schools across the state, and creation of a robust network of resource-rich professional development

FIGURE 6: POSITION OF THE RPDCS IN RELATION TO STATE EDUCATIONAL AGENCY



[7] *DESE was undergoing an internal reorganization of personnel and offices at the time of data collection during the spring of 2010; this diagram represents the reconfigured departments within the department (DESE, 2010a)*

centers that share a common vision for supporting high-quality teaching.

For instance, in 1993 the Outstanding Schools Act was passed, which established that in order to be eligible for state aid a district must allocate 1% of monies received to the PDC for spending on the professional development of certified staff. In addition, another 1% of the state budget is dedicated to statewide professional development efforts. The act also stipulated that three-fourths of the budget allocation at both the state and the district levels must be spent in the year in which it was received. This way, investment in professional learning for teachers remained steady.

The act also designated the school PDC, in conjunction with the local school board, as the decision-making body that would decide how earmarked funds will be spent, and it stipulated that professional development funds be used to meet the district's Comprehensive School Improvement Plan goals. All schools are furnished with state Professional Development Guidelines, which were developed by a State Advisory Committee comprising teachers, administrators, professional associations, and personnel from DESE ("Missouri Professional Development Guidelines for Student Success," 2010).[8] In addition to supplying steady professional development resources, the state also gave teachers the authority to make decisions about how best to use their professional development money through establishment of school-based PDCs rather than trying to centralize the decision-making process about the sort of professional learning that educators should engage in. The school-based PDC is made up entirely of teachers, and the purpose is explicit:

> To identify instructional concerns and remedies; assist beginning teachers with the implementation of their professional development plan; serve as consultant at a personal teacher's request; arrange training programs for mentors; assess faculty needs; develop in-service opportunities for school staff; and provide district administration with suggestions, ideas and recommendations concerning instruction. ["Missouri Professional Development Guidelines for Student Success," 2010, p. 110].

As stated, these committees are expected to work with school administrators and are encouraged to call on their Regional Professional Development Centers for assistance if needed. PDCs often invite RPDC directors to attend their meetings and/or seek out their advice. Oversight of the committee's professional development expenditures occurs through the Missouri School Improvement Program (MSIP) process and is most closely scrutinized in districts that are identified as low-performing.

Given the resources and mandate to invest in professional learning, spending on professional development increased over the years. With the provision of real dollars to purchase professional development services and with the requirement that three-fourths of the available monies be spent, RPDC directors, DESE officials, and institutes of higher education faculty reported that educators' participation in professional learning opportunities increased. According to these sources, ongoing participation in professional development programs became an expectation in Missouri, with the aim of increasing learning in the profession.

[8] *The Professional Development Guidelines are frequently updated*

Recent Changes in State Policy

The State Assumes More Control. Over the past decade, as the national education policy landscape changed (e.g., through NCLB legislation), Missouri has slowly begun to assert more control over the state's educational governance. For instance, DESE has increasingly held districts and schools more accountable for their performance. In 1990, the process of classifying and accrediting school districts took on greater significance when the State Board of Education adopted new classification standards, to be implemented through the MSIP. The goal of the MSIP process is to promote school improvement within each district and statewide. The MSIP process identifies resource standards, process standards, and performance standards (DESE, 2006b). Resource standards identify the basic requirements that all districts must meet, such as offering regular instruction in reading, language arts, mathematics, science, and social studies to all students. Process standards address the instructional and administrative processes used in schools, such as implementation of written curricula in all subject areas, administration of state-required tests, and establishment of a positive climate for learning with a focus on academic achievement. Performance standards include multiple measures of student performance.

The standards against which all school districts will be assessed include academic achievement, reading achievement, ACT achievement, career preparation, and educational persistence. DESE annually collects and analyzes data for those standards as part of the evaluation process (DESE, 2006b, p. 4).

In the first two five-year review cycles (from 1990 to 2000), the MSIP review primarily focused on monitoring the resource and process standards. Increased accountability for student performance occurred when MSIP entered its third review cycle in 2001, which required closer monitoring of school data to ensure that students met the performance standards. In 2006, as MSIP began its fourth review cycle, it became impossible for schools and districts to receive accreditation without meeting these performance standards. Meeting the resource and process standards was also necessary, though insufficient for accreditation. Once schools realized that meeting these performance standards was a requirement for accreditation, in the eyes of one RPDC director this meant that the "role of the RPDC shifted from professional development being seen as something extra to where professional development became an integral part of school improvement" (RPDC interview, September 2010). The changes in the MSIP review process coincided with gradual reduction of available educational resources in the state and a desire on the part of DESE to focus its limited resources on the lowest-performing schools as well as identify schools that were trending in the wrong direction.

Establishment of State and Local Mentoring and Induction Policies

One high-leverage way—suggested by DESE's experience with the MSIP—to focus attention on schools and districts that are low-performing is for policymakers to pay more attention to improving school and district leadership. To that end, DESE initiated the Missouri State Action for Education Leadership Consortium (SAELP). This consortium helped mobilize support for

state and local mentoring and induction policies. For instance, through this consortium a Higher Education Evaluation Committee (HEEC) was formed in July 2005. The HEEC comprised representatives from all 17 higher education institutions in Missouri and was chaired by representatives from Missouri Professors of Educational Administration (MPEA), with the goal of evaluating and improving the educational preparatory programs in the state. During this period, a statewide mentoring policy was passed that required (1) beginning school administrators to participate in two years of mentoring support and (2) beginning superintendents to engage in one year of mentoring (HB 1711). Out of this policy, the Missouri Administrator Mentoring Program (AMP) was formed (Friend, Watson, & Waddle, 2006).

Additional legislation (SB 722) created an alternative route for administrative certification of teachers with a master's degree and five years of teaching experience. These state policies spawned local professional development programs, to support beginning professionals and attract newcomers to the field, especially to jobs in hard-to-fill districts. In addition, the SAELP consortium aided in writing the Mentoring Program Standards (DESE, 2010b), which were adopted by the Missouri Code of State Regulations (2010). Missouri's statewide mentoring policy is tied to the mentoring standards and enforced through the MSIP. For example, the mentoring standards recommend (1) provisions for selecting appropriate mentors, (2) developing individualized plans for beginning teachers that align with the district's goals and needs, and (3) allocating sufficient time for mentors to observe beginning educators and for the beginning educators in turn to observe master educators. Oversight of the mentoring program is included in the broader professional development program evaluation that is conducted locally and as part of the MSIP review process.

The SAELP consortium has also developed and promoted a series of leadership initiatives to enhance teacher quality and urban education in particular. For instance, the SAELP established eight collaborative demonstration sites, each which features model leadership programs within the state, such as a principal mentoring program and a superintendent support program ("Missouri Leadership Initiatives," 2010). One of these demonstration sites is the Evolving Leadership Induction Program, located in the Springfield Public Schools. This program, according to Associate Superintendent Anita Kissinger, offers a "a systemic framework for leadership development that is research-based and highly structured, yet flexible enough to allow leadership facilitators and mentors to address the unique needs of each evolving leader" (Missouri Leadership Initiatives, 2010).

As Missouri focused more attention on the induction of teachers, through the SAELP and the work of the HEEC individual school districts have increasingly developed their own teacher induction programs. In conjunction with its leadership induction program, Springfield has an exemplar teacher induction program. Springfield is the second largest school district in Missouri, with approximately 25,000 students, half of whom receive free or reduced lunch. Its induction program, STEP UP, gets its name from *S*upporting *T*eachers, *E*xamining *P*ractices, and *U*ncovering *P*otential (Lee, Kissinger, Crawford, & Hankins, 2010). The mission of this program is "to provide an exemplary teacher for every student" (Lee et al., 2010) in the district. The

program aims to replace random acts of improvement with systemic ones. To that end, STEP UP has developed a systemic model of teacher induction organized around a continuous improvement model: plan, do, study, act. The systemic process that the Springfield School District has designed to support the professional growth of teachers focuses on six critical questions:

1. What are key student performance needs in our district?

2. What does the research or benchmarking say about the content or processes to address needs?

3. How might we conduct a gap analysis between needs and current practices?

4. What knowledge and skills might teachers need to address the gap?

5. How might we design professional learning to close the gap?

6. How will we deploy and monitor for effectiveness? [(Lee et al., 2010]

Springfield's approach to teacher induction instantiates the state mentoring policy in district practices by connecting state and local policy to school needs. The district identifies professional development as a mechanism for school improvement, and it provides the necessary local supports, in the form of qualified mentors and an ongoing professional development program, to ensure that quality mentoring occurs and school needs are met.

The leaders of the STEP UP induction system steadily monitor the progress of this program. One way in which they monitor the success of the program is by collecting teacher retention data, which show that in the first year of the STEP UP program beginning teacher attrition was reduced in the district from 70% to 30%. Since the inception of the STEP UP program, attrition for beginning teachers has steadily declined. In 2008–09, 94% of first-year teachers remained in the district. The district's growing ability to retain teachers is helping to build a stronger local teaching force in Springfield, while at the same time saving the district money because of the additional costs associated with first-year teachers. In conjunction with its induction system, the Springfield School District has also developed a corollary staff development program, which links its teacher and administrator induction programs.

All of these programs are planned, implemented, and monitored by the District Professional Development Committee, an oversight structure that is required by Senate Bill 380 and the MSIP standards. The District PDC is responsible for regularly evaluating program effectiveness through annual reviews of student performance data, district goals, needs assessment survey results, MSIP requirements, and teacher reflections. In Springfield, school-based PDCs are expected to ensure that their site improvement plans align to these explicit district goals. In this way, the MSIP process acts as a check on this alignment. The Springfield example shows "professional policy" in action and demonstrates that district leadership, capacity, and will have everything to do with whether or not, and how, a state-level policy is taken up locally. What the Springfield practitioners are actually doing to adopt, interpret, and make sense of the state mentoring and induction policies to fit their local needs affects how policy is enacted in classrooms, schools, and the district. District leaders in Spring-

field demonstrate that when local practitioners have the ability and inclination to implement a particular policy, the outcome of that policy can transform practice and deliver results. Because Springfield is a large urban district, it receives sufficient resources to design and operate the STEP UP induction program. As Associate Superintendent Anita Kissinger and RPDC staff point out, in smaller (often rural) districts across the state such professional development mentoring and induction programs are not possible without the assistance of the RPDC.

State Policy Focuses on the Lowest-Performing Schools

Missouri, like many states, recognizes that local capacity and will are often missing or severely depleted in the schools and districts within the state that are the lowest performing. Therefore, policymakers in Missouri are developing policy (such as the Areas of Critical Need legislation passed in 2006) to focus attention and use of limited resources on the lowest-performing schools.

State policy reflects the findings by DESE from the first three cycles of the MSIP that overall it is easier to improve student performance if DESE can "catch a school in the early stages of slipping performance" (DESE staff interview, June 2010). The legislation that established the 13 areas of critical need in education, for example, linked the state's professional learning resources, including the RPDC network, to Missouri's accountability program (MSIP) and focused state attention on the lowest-performing (5%) schools, most of which are located in larger urban areas. With this legislation, the state identified "priority uses" for DESE funds and mandated that "all programs/projects utilizing state funds must be tied to the 13 areas of Critical Need." Areas that were identified for priority funding focused on the most underperforming schools: (1) funding the operation of state management teams in districts with academically deficient schools and providing needed resources to these districts, and (2) funding for grants to districts that are failing to achieve assessment standards (DESE, 2006a).

The state also designated 10% of the statewide money allocated to professional development for spending on a grant program to disseminate, exchange, and recognize best teaching practices throughout the state, as well as to establish a system to review the efficacy of statewide professional development expenditures. Although Missouri had invested heavily in professional development for many years, the state did relatively little to examine how these resources were used and to what effect. The RPDC infrastructure, like the investment of other professional development resources, went largely unchecked by the state. Recently, and coinciding with limits on state funds, DESE has attempted to pay more attention to the implementation and efficacy of its investments in professional development. To this end, DESE partnered with Doug Reeves's Leadership and Learning Center to conduct an implementation audit of DESE's professional development programs, which was completed in May 2010. The audit considers three essential questions. First, what initiatives are in place in Missouri schools and districts, and which ones are priorities? Second, what is the range of implementation for prioritized initiatives? Third, what is the relationship between each initiative and student achievement? The purpose of this study is to offer practical information to policymakers in the Missouri Department of Education so they can

identify and capitalize on their strengths, and directly confront their greatest challenges (*Missouri Department of Education Implementation Audit, 2010*).

The audit examined 18 instructional initiatives at the district and school levels. Findings from this audit showed that "there is a wide range of implementation for almost every instructional initiative"; that "the supervision and monitoring of initiatives can be improved"; and that the depth of implementation most clearly related to gains in student achievement came from four programs ("Professional Learning Communities, Missouri Preschool Program, the Missouri Reading Initiative, and the School-wide Positive Behavior Support"; *Missouri Department of Education Implementation Audit*, p. 1). Thirteen of the initiatives that were examined were identified on the Leadership for Learning metric as "high implementation, low impact." The analysis concluded that for these programs, another metric for measuring impact on student performance is needed to determine whether it is worth continuing to support a program. In an era of increasing accountability—as the audit exemplifies—Missouri has begun to assert more oversight over its instructional initiatives and is looking for ways to measure the relationship between investments in professional development and school improvement. In so doing, the state has also given more direction and less latitude to the RPDC.

DESE has directed the work of the RPDC by strengthening its formal ties to the RPDC network. Over the last decade, there has been a gradual increase of federal funds to support the RPDCs, and with these

TABLE 5: RPDC STAFF COMPOSITION IN 2009–10 AT ONE RPDC

Role	Reports to:	Number of Staff
Director	RPDC director	1
Assistant director	RPDC director	1
Missouri Assessment Program	DESE	3
Migrant education/English Language Learning Program	DESE	3
Curriculum and Instruction Project	RPDC director	1
Reading First specialist	DESE	3
Special education and PBS consultants	DESE	5
State supervisor of instruction	DESE	1
Professional learning communities	DESE	3

funds have come additional federally funded DESE staff (PLC program coordinators, schoolwide positive behavior coaches) who operate out of the RPDCs. As federal funds increase and state funds decrease, the personnel in the RPDC are increasingly made up of state employees rather than RPDC consultants. For example, by 2009 approximately 60% of the RPDC operating budget was funded through federal programs such as Positive Behavior Support or Special Education Grants. With elimination of the state funds to the RPDC in June 2010, the RPDC budgets are now almost entirely funded with federal dollars. In real terms, this means that most of the staff housed in the RPDC now work for DESE and not for the center, and most of the available professional development offerings are state initiatives rather than RPDC-designed programs. A 2010 staffing chart from one RPDC (Table 5), which is typical, demonstrates that the majority of personnel in the RPDC now report to DESE rather than to the center's director.

The change in the composition of RPDC staff over the past five years, from RPDC consultants to federally funded instructional program coordinators who report to DESE, has also significantly changed the RPDC relationship to DESE. At the time of this writing, RPDC directors are still navigating this new relationship with DESE. Some signs are emerging, however, that DESE recognizes the strength of the statewide infrastructure it has built in the RPDC network and views the centers as a useful mechanism for spreading instructional programs across the state. For instance, DESE appears to want to leverage the strong relationships that the RPDC directors and their staff have developed with local educators and leaders as a way to instantiate state policy on the ground in schools and classrooms. In the summer of 2010, DESE re-aligned its state supervisors of the accountability process (MSIP) with the RPDCs to more efficiently align improvement efforts in districts. In so doing, DESE capitalized on the critical role that the RPDC infrastructure can play in providing school improvement services and supporting implementation of programs onsite. As one RPDC director stated, there has been a "shift in thinking" at the RPDCs: "The only way to make a difference is to provide onsite support to schools," for which reason centers now offer 50–75% of their professional development support services onsite, during the school day.

Another way DESE has sought to align the RPDC to state policy initiatives is by adopting Reeves's data teams and data-driven decision-making approach and ensuring that each RPDC has certified data team members on staff who can certify district people in the data team approach. The goal of the approach is to give participants "the tools to differentiate between unnecessary student data and the relevant data that they should use to drive instruction" (www.leadandlearn.com, September 2010). The increased alignment and stronger ties between DESE and the RPDC network have made it possible for the network to become a mechanism through which the state is able to target and customize support to schools in the form of high quality and job-embedded professional development.

Mechanisms Established for State Accountability. As Missouri established accountability mechanisms for its local school districts, DESE tapped the RPDC to play a role in helping to improve these struggling schools. The State Board of Education established high standards for student achievement through the Missouri Assess-

ment Program (MAP). The state board, in conjunction with DESE staff, developed and implemented a framework for instruction and assessment based on the six MAP performance standards, which are one of the multiple measures of the 14 MSIP performance standards. Common state assessments were developed to track student achievement disaggregated by district, school, and demographic data. Districts with schools that are not meeting (or are at risk of not meeting) their MAP goals are placed on a state accountability list and are required to develop accountability plans. As of the fall of 2010, 65 districts (12% of Missouri's public school districts) were on state-mandated accountability plans. One state department official commented that the function of the accountability plan is really to trigger "an early intervention" so that districts with struggling schools can receive the resources and support they need before they become unaccredited.

The accountability plans are part of the MSIP, which, as described earlier, offers standards and indicators of excellence for schools and districts in the areas of resources, processes, and performance. The process of accreditation DESE uses incorporates guidance and support for districts. The review process for schools that are not meeting their MSIP goals is labor-intensive; thus the RPDC is central to this state system of support. One element of this support system is a series of school observations, known as the site review. This review is conducted by a state management team comprising a state supervisor, who is the state accountability representative, and the RPDC director, along with other DESE program consultants, such as a PLC consultant or a special education consultant, often housed at the local RPDC. The site reviews might be a general review or "targeted" to a particular area, depending on a school's achievement data. After the review, the management team presents the district superintendent and school principal with findings for areas they deem in need of improvement. In underperforming schools, instructional quality and level of student engagement, for example, are often areas that show up as findings. Districts are then left to their own devices to develop a plan for improvement. Plans are expected to incorporate site review recommendations, but the quality of the plans and their enactment often hinges on the quality of the district leadership and the relationship that exists between the district leaders and the RPDC director.

Although districts develop improvement plans on their own, the RPDC director is required to sign off on the district plan. According to the RPDC directors, the sign-off requirement is critical for getting the RPDC a seat at the table with the superintendent so that the RPDC can offer its assistance to the district. At the time of this writing, an RPDC is involved with districts and schools on accountability plans "by invitation only." As one director put it, this can place the RPDC in a challenging role because "a school district in trouble may lack understanding" about the sort of support it needs. On the other hand, when support is mandated, a different quality of relationship is created between the struggling district and the support provider. For this reason, the RPDC has preferred to assume the role of critical friend and let the state be the compliance enforcer.[9]

[9] *The relationship among the underperforming district, the RPDC, and the state is presumably strengthened with the re-alignment of the state supervisors to the RPDCs. What this will actually mean for the RPDC relationship to the district is unfolding at present.*

With the re-alignment of state supervisors to the RPDC regions, which has occurred during the writing of this case study, it is possible that the RPDC relationship to schools on accountability plans may undergo changes. Consequently, it is worth noting RPDC staff members believe that the nature of their "critical friend" relationship with struggling schools enables the RPDC to be more influential and helpful to struggling schools. One RPDC director described the value of this relationship as "similar to the role of an instructional coach; it is easier to build trusting relationships if the role is not supervisory." Superintendents in "accountability districts" concur. One reported that the RPDC "helped us to understand what kind of a plan to submit to the state." She also commented that when the RPDC conducted a site visit, it found "a lot of good things in place but that we needed to make some of our professional development plans more effective. [We were asked:] 'Are teachers using the professional development you are providing? Do teachers understand how to use it?'" For this superintendent, the personal relationship that existed between the RPDC staff and educators in the district helped the district strengthen its professional development efforts. Thoughtful feedback was given that valued the district's knowledge and efforts. Another superintendent whose district was helped off its accountability plan with the assistance of the local RPDC described how candid and helpful the feedback was from the RPDC staff. She said, "We were told that many teachers were not teaching for 'depth of knowledge' and the RPDC offered practical suggestions and recommendations. . . . The RPDC kept coming back and told us what we needed." Those districts with struggling schools that seek out or engage assistance from the RPDC report receiving the ongoing and customized support they need.

These accounts suggest the RPDC plays an important role in improvement of accountability districts by mediating between the expectations of the state and the needs of the district. The number of districts that are released from accountability plan status every year (5-6 districts each year, totaling 15 districts through 2009), as well as the steady improvement that these districts make on their MSIP goals, suggests that in many instances this delicately navigated relationship is working. (See discussion on how the RPDC gives *customized support* within this accountability context in the section "Missouri's Professional Development Landscape" on page 59.)

State Policy Shifts the Role of the RPDC. As described, the RPDC has recently undergone a shift in its relationship to the state. All eleven RPDC directors say that DESE is assuming a "different" and "more directive relationship" with the RPDCs. Directors describe an altered role for the RPDC as "helping to do the state's work" (see Table 5). For example, DESE has given the RPDC a more direct role in supporting schools that are not meeting AYPs. To this point, one director noted that the RPDC is "more guided by DESE to work with struggling schools." This state directive to support struggling schools shifts the way the RPDC works. When the school accountability process (the third and fourth cycle MSIP review) began to hold schools accountable for meeting student performance standards in order to receive accreditation, many schools began to turn to their RPDCs for help. As a result, the RPDCs moved away from offering regional workshops and began to offer onsite support, custom-fitted to the needs of struggling schools over a sustained period of time. (See discussion of how *RPDC spreads ideas and practices* in the section

"Missouri's Professional Development Landscape," page 59.)

With increased federal dollars available to fund programs that can help the nation's failing schools, DESE has begun to use federally funded programs as a way to offer professional development to local school districts, especially to those with underperforming schools. DESE uses these federal dollars to fund and disperse national professional development programs, through formal state school improvement initiatives, such as RtI, Schoolwide Positive Behavior Support, and PLCs. To disseminate these programs, DESE placed state professional development program consultants for these particular programs in the RPDCs (see Table 4). Located in the centers, these state-funded professional developers have desks adjacent to RPDC-funded staff. They work with the same set of schools in the region as well. However, the state-funded program consultants do not work for the RPDC but rather for the state. Consequently, each RPDC director must manage a complex set of organizational and professional relationships. This particular arrangement prompted one director to reflect that the role of the RPDC really is to figure out "how to make regulations and [state] programs fit school needs." Another director seemed to hold a similar view; he asserted that a goal of his RPDC is "to improve the efficiency of the state department." To the extent that the RPDC is able to figure out how to make state programs fit school needs, the RPDC has the potential to become an all-inclusive systemic support mechanism to improve schools.

Increasingly, the RPDC is becoming an extension of DESE. In many respects, the RPDCs are well positioned to assist Missouri's struggling schools by effectively translating state-level policies into meaningful practices on the ground in the state's 554 school districts and charters. Because the educational contexts across Missouri's school districts are geographically and demographically diverse, the role of translating state policy into meaningful action is not an insignificant undertaking. This is particularly true in districts that are low-performing, as the state commissioner recognized: "Too often, the schools and districts that struggle to meet the needs of their children are characterized by dysfunctional governing bodies, competing community politics, and a lack of coordination between and among

TABLE 6. DISTRICTS RECEIVING RPDC SERVICES, OCTOBER 2009–JANUARY 2010

Measurement Period	Total Number of Districts Served	Districts as Percentage of Total Number of Districts in the State
October 2009	493	94%
November 2009	485	93%
December 2009	465	87%
January 2010	469	90%

Source: Regional Professional Development Centers Monthly Dashboard Data Template, February 2010.

agencies serving children." (Nicastro, C., September 16, 2009. Remarks to the Joint Committee on Education, p. 2)

Precisely for the reason that local contexts vary and because, in the words of one director, "schools are all about relationships," the RPDC leaders argue that it is important for the centers to maintain some autonomy and independence from the state. The state needs to strike a fine balance between asserting control over the RPDC programs and giving the centers enough degrees of freedom to act flexibly so that they are able to respond to the particular needs of the schools they serve. It is in the role of an intermediary organization, mediating between state policy and local needs, where the RPDCs are able to add the greatest value.

Missouri's Professional Development Landscape

Not all professional development opportunities in Missouri are created by DESE or the RPDCs. For instance, the National Writing Project has had five sites in Missouri with 812 teacher consultants statewide, forming a cadre of teacher leaders who offer instructional leadership to schools. The Writing Project also has a long-standing presence in Missouri; for example, the University of Missouri Writing Project has held an institute every summer since 1977. The Missouri Association for Supervision and Curriculum Development (MASCD), which is an affiliate of the national ASCD organization, has more than 4,000 members and also conducts professional development programs within the state. Other associations, such as the Missouri Association of Secondary School Principals (MASSP) and the Missouri Association of Elementary School Principals (MAESP) are also providers of professional development. As specific needs arise, new organizations are sought out to supply professional development services within the state. Recently, for example, the University of Virginia Turnaround Program began working with 13 districts in Missouri, including 30 schools. Typically, professional development organizations in Missouri will work in partnership with RPDC staff. In a local-control state, school districts are free to choose what sort of professional development programs to use; some contract with professional development vendor organizations instead of, or in addition to, relying on their local RPDC.

Nonetheless, over the years the RPDCs have become a dominant professional development actor in the state. As Table 5 shows, the RPDCs regularly serve almost all of the 554 school districts in the state. The RPDCs represent a core policy, strategy, and structural feature of Missouri's professional development landscape.

The RPDC Role in Building Statewide Capacity for Professional Learning

Organizational Design of the RPDC Generates System Capacity. As Missouri began to develop policies to support professional learning, DESE had the foresight to envision the RPDCs as partnering with institutions of higher education and local professional associations. DESE connected the RPDCs to local universities, which perform the licensing function for teachers and principals across the state, by making institutions of higher education fiscal agents for the RPDCs. By establishing a formal relationship between the RPDC and the univer-

sity, a mutually beneficial relationship was both acknowledged and brokered.

Most RPDCs are actually housed on university campuses. In practice, the quality of the relationship between the university and its RPDC varies. However, a symbiotic relationship between the RPDC and its host university exists in many regions where the value of the relationship is recognized and nurtured by school of education deans and RPDC directors. For example, several university professors actively participate in the Satellite Academy Program (SAP), more commonly called the Leadership Academy,[10] as regional facilitators. Indeed, cross-organizational teams of facilitators made up of RPDC staff, practitioners (usually principals), and university faculty are intentionally formed to lead this yearlong leadership academy. This triadic relationship of professional developer, teacher-educator, and practitioner undergirds much of the work in RPDCs. There is a strong belief within the RPDC network and the educator-quality arm of DESE that this triadic structure supports educators' learning by fostering "interdependence" within the broad educational system, by "creating common vocabulary across multiple settings" and by "building relationships and trust between professional development providers, teacher educators, and practitioners" (SAP facilitator focus group interview, June 14, 2010).

On several university campuses, teacher education programs work closely with the local RPDC to share knowledge, resources, and expertise. At many universities, the RPDC relationship is actively supported. The dean of the school of education at one university encouraged faculty to attend a yearlong RPDC program, the Teachers Academy. The academy, which is a sister program to the SAP, is a professional development program that features action research for experienced local educators. At Central Missouri, which has the largest teacher credential program in the state, the university views its relationship to its local RPDC as "extremely worthwhile." Education professors value their connection to the RPDC and its programs because the center constitutes an avenue into learning about the struggles teachers face. One professor said that connections with "practitioners keep us grounded in what's happening in the field." A professor at another university also reported that her connection with the RPDC was important because it gave her an authentic connection to practicing teachers and leaders, which informed her own teaching and research at the university.

RPDC Programs Develop Knowledge and Relationships. Since inception, the RPDC has conducted a particular type of professional development that focuses on learning-by-doing over time and in collaboration with colleagues. Another prevalent feature of the RPDC core programs, such as the Satellite Academy Program and the Teachers Academy, is a focus on leadership and engaging participants in authentic learning opportunities. Each RPDC offers a variety of professional development programs to fit the particular needs of the schools and districts in the region. Several RPDCs that serve primarily rural areas are partnering with a university site to experiment with distance learning opportunities. Another RPDC has developed a support for parents called the "warm line," which makes professionals available by phone to help with parenting issues. Several centers that serve primarily urban areas have developed a "coaches academy" with the aim of developing instructional coaches to help build

[10] *The SAP is a flagship program of the RPDC network*

teaching expertise in schools. The need for this program grew out of the realization on the part of several RPDC directors and staff that the skills and abilities of great coaches are distinct from the knowledge and skills of excellent teachers, and that coaching skills need to be taught and nurtured.

In addition to professional development programs specific to particular centers, the RPDC network also offers some professional development programs in common. The SAP and Teachers Academy are two examples of such shared programs. The SAP is a yearlong leadership program that features four statewide meetings coupled with monthly regional cohort meetings. Approximately 150 educational leaders enroll in the program every year. The SAP program is one of the 13 instructional initiatives that the implementation audit identified as "high implementation, low impact" (Implementation Audit, 2010, pp. 3, 42), which means that the RPDC will need to find ways to connect the SAP school leadership work to improvement of student learning if the program is to receive continued support from DESE. The RPDC network is actively engaged in the challenge of trying to connect participants' learning from SAP to improved student performance. How to do this so as to account for changes to school culture and leadership behavior as well as improvements to student performance presents a real challenge.

The Teacher Academy is another flagship program of the RPDC. Participants, most of whom have five years of teaching experience or more, say they appreciate the ongoing nature of the professional development, and the opportunity to experiment with new practices and receive feedback on these experiments. Teachers in this program meet monthly to examine instructional practices and conduct action research in their classrooms. The aim of the program is to "improve student learning through professional development" (as the mission statement declares). Many Teacher Academy participants find that their involvement in the academy offers important intellectual sustenance and collegial relationships in what can otherwise often be a lonely profession. Exploring the role of leadership is a central element of these core programs. The RPDC commitment to developing the leadership capacity of educators in a variety of roles and to stimulating educators' desire to be learners is helping to build collective capacity in schools and districts across the state. Through the SAP and Teachers Academy, the RPDC has had a wide reach across the state. Now the RPDC network needs to find credible ways to document how the knowledge, as well as the collegial relationships, they are developing are helping to improve the quality of learning in schools.

Relationship Builder. Another important way in which the RPDC builds systemwide capacity for learning is by developing relationships across and within levels of the educational system. Relationships are developed across the regional RPDCs because of formal communication channels, such as monthly director and program meetings, and because of the longevity of directors who have become friends and colleagues over many years of working together to lead common RPDC programs. Relationships are also built between program coordinators at DESE and the local RPDC directors. Of course, because of the formal partnership with and proximity of the centers to universities, relationships between higher education faculty and the RPDC staff are also formed. These relationships spawn a variety of programmatic collaborations between schools of education and the

RPDC. The design of most RPDC programs is to build communities of colleagues. For instance, both the SAP and the Teachers Academy meet regularly during a school year and facilitate development of strong collegial relationships. Finally, the RPDC staff also builds strong relationships with practitioners in local schools and districts and with local school board members. Having trusting relationships with practitioners is critical to the work of the RPDC. As one RPDC director said, "I know every superintendent and every building principal in my region, and that's worth a lot!"

Among the benefits of building strong relationships across levels of the system is that educators come to recognize they are all working toward a shared goal: to educate all children in Missouri to a high standard. For one participant, who built these cross-role and across-system relationships in his SAP cohort, this realization was profound: "I got a bigger view. . . . In the past, I always wanted to fight for *my building*; it was not about improving *our district*." He went on to say that the relationships he developed helped him appreciate what he had and bolster what he didn't. Teachers, school principals, and university faculty who participate in these ongoing RPDC programs report developing a sense of shared responsibility for improving the education of all students across a school, a district, a region, and the state. In the terminology of systems change theorists, through participation in RPDC programs "collective capacity" for systemwide change is built (Fullan, 2010, p. 4). It is this collective capacity for statewide systemic improvement that DESE has begun to leverage in recent years as it strengthens its formal ties to the RPDC network.

A Vision for Professional Learning Takes Root in the State. Policies that have invested in professional learning efforts lead to a more strategic and purposeful approach to professional development that has become the norm in schools across the state of Missouri and represents a significant shift from 15 years ago. RPDC directors partially attribute this shift in educators' professional development savvy to their experiences with high-quality, job-embedded professional development, of the sort that their centers are increasingly providing.[11] More educators in the state now have experience attending onsite professional development that is tied to school-identified learning needs and built-in opportunities to practice using professional development knowledge and tools in the context of educators' own classrooms or schools. Teachers and school leaders experience and observe the difference in uptake of professional development when it is structured as onsite and job-embedded. Consequently, educators demand more professional learning experiences of this type. According to one director, "Districts are interested in having us come in to do job-embedded professional development and to model high-quality professional development." Most RPDC directors reported that about half of their professional development services are structured as ongoing, onsite, and job-embedded programs, compared to the regional workshops they used to lead, which were of the more typical one-shot variety. This is still the most prevalent form of professional development in the United States (Wei, Darling-Hammond, & Adamson, 2010).

The RPDC Acts as an Intermediary Organization. A common function of

[11] *All RPDC directors reported that 50–75 percent of the center's professional development programs in 2009 were provided onsite in schools.*

intermediaries is to be "capacity-building organizations [that operate] to increase the capability of individuals, organizations or systems" (Jaquith & McLaughlin, 2010, p. 86). In addition to building the capacity of individuals, organizations, and systems, intermediaries are also distinguished by their position. By definition, intermediaries exist partially within and outside of the formal system. Intermediary organizations are described as living "at the boundaries . . . neither of the system nor wholly outside it" (McDonald, McLaughlin, & Corcoran, 2002, p. 6). This capacity building function and positional aspect of intermediaries describes the RPDCs. Until quite recently, they resided at the borders of the formal educational system in Missouri, having little interaction with the state agency. Today, the centers function in many respects as intermediaries between the Office of Educator Quality at DESE and regional schools and districts. RPDCs can also mediate between a district and school, or a university and a local district. Because of their in-between position, at least historically RPDCs were able to respond more nimbly to the needs of individuals and organizations within the system. Their position makes the RPDC network a valuable asset to the Missouri educational system that can be instrumental in helping the state achieve its educational vision. In the words of Education Commissioner Nicastro, the state vision is to educate all students to a high standard:

> I believe we all want to produce citizens who are ready for school, ready to graduate, ready for higher education, ready for work . . . and who will compete internationally. The purpose of public education is to prepare our children for a future filled with options. All of these options require that our children—every one of them—be guaranteed a program that meets high standards and offers no excuses (Remarks to the Joint Committee on Education, 2009 p. 1.).

Regional professional development centers also promulgate this vision. They build capacity by articulating and championing a vision of professional learning and educational leadership, by developing the knowledge and expertise of local actors, by helping to develop organizational structures to facilitate ongoing learning and continuous instructional improvement, and by spreading ideas and best practices across the state. Like most intermediaries, the RPDC network helps other system actors be more effective. Typically intermediaries "add value to the world mostly through what they enable *other* players to do (or do better)" (Briggs, 2003, p. 3). For example, in its intermediary capacity the RPDC is instrumental in aiding DESE in carrying out school improvement policies. As DESE strengthens its ties to the RPDC network, DESE has the potential to perform a reciprocal function for the RPDC: to make the RPDC more effective by insisting that the organization demonstrate its value to the educational system.

Championing a State Vision of Learning. Over the years, RPDCs also assumed the role of regional professional development visionary, teaching local superintendents and school leaders about the characteristics of effective professional development. One RPDC director commented that in his region, which has 63 school districts that are primarily rural and relatively poor, he has watched schools "that don't give a lot of purposeful thought to the way they do professional development" evolve to make planning professional development

a priority. He saw these schools increase their understanding of "what effective staff development looks like." Another RPDC director said, "As a state, we have increased our understanding of what high-quality professional development is, and schools have become much more critical consumers" of professional development resources. A third RPDC director made a similar point, saying that PDCs are "wiser." As evidence, this same director cited the way many PDCs now allocate professional development money to fund targeted "school improvement" efforts instead of dividing up the money in a hodgepodge manner to pay for individual teachers to "go to a conference" or buy curriculum materials for "pet projects." State policy that tied professional development spending to school improvement plans also aided the purposeful use of professional development dollars. Highlighting this shift in how districts and schools think about high-quality professional development, another RPDC director said she no longer gets calls from school leaders saying, "Two weeks from Friday is an early dismissal day; is there someone from your RPDC who can come and do something for us?" According to interviews with all 11 RPDC directors, it appears that most district and school leaders now engage in long-term and strategic planning of professional development.

By helping to spread a common vision of learning and by making this common vision synonymous with the state's vision, the RPDC adds coherence to the educational system by defining and modeling a particular approach to instructional excellence. On some measures, the RPDC network is becoming the epicenter of professional learning across the state.[12]

Playing the Role of Broker. Intermediary organizations typically act as brokers, bringing together a diverse set of actors to solve particular problems. The vast relational network of the RPDCs in Missouri makes them well equipped to broker all sorts of relationships to assist statewide and local educational endeavors. In recent years, as RPDCs increasingly operated between the state policy environment and the needs of local school districts, RPDC directors acted as a go-between by translating the needs of one environment to the other. For example, several RPDC directors commented that within DESE the school improvement initiatives (Professional Learning Community program, Response to Intervention, and Positive Behavior Support) tend to work in isolation from one another. One director said there is "no unified approach" to school improvement within DESE. RPDC directors do not see their role as merely carrying out DESE policies but rather as assisting the state agency to be more effective in providing the array of services that truly meet the needs of a particular district. For instance, the RPDC can help connect the federally funded state professional development programs to one another on the ground as the RPDC works with district superintendents and principals to meet their particular needs.

The relationships that RPDC directors develop with the state-funded professional development program consultants who operate out of their local centers offer a good example of the sort of brokering role that the RPDC can play. In many of the RPDCs, especially where the leadership is well established and strong, the director figures out how to blend the federally funded programs with the RPDC's staple of

[12] *For example, more than half of the initiatives examined in the implementation audit are supported by the RPDC network.*

professional development services.[13] These federally funded initiatives supported by the state—Positive Behavior Support, the state PLC program, or RtI—are in the words of one DESE official "carefully selected to support districts . . . [and] based on research and perceived need. They are available to districts at a reduced cost—districts are not required to participate."

For instance, the state PLC program began in 2003, and since then nearly 300 schools have participated. School interest in the project expanded in 2007, resulting in a doubling of state regional staff assigned to work on the project. As part of the project, schools receive onsite assistance and mentoring visits throughout the year. Additional professional development is made available to participants by regional PLC and RPDC staff, who often work together. Many directors view state program consultants who work out of their centers as having important talents and knowledge—beyond helping schools implement a particular state professional development initiative with fidelity—to contribute to the RPDC enterprise. These directors see the state program consultants as resources for their regional districts and report building relationships with these consultants, using their knowledge to strengthen the center's programs and collaborating with them to identify ways to connect various state professional development initiatives with the particular needs of a struggling school or district. As one director pointed out, giving a struggling school the organizational resource of professional learning communities may be necessary, but it is not sufficient to help that school develop an engaging and challenging educational program for all its students. Other supports are needed too. A blended approach of combining a state professional development initiative with RPDC programs often has the advantage of strengthening the effectiveness of individual federal programs, which on their own can be insufficient. By combining various professional development initiatives—such as those focused on student behavior, high-quality instructional strategies, and development of a professional learning community within schools—the particular needs of many low-performing schools are better met. Mediating between the federally funded state initiatives and the needs of the local school, the RPDC helps design a comprehensive and customized system of professional development support that can better meet a particular school's needs. In such instances, the broker role that the RPDC plays can also facilitate bottom-up change and promote a two-way relationship between practice and policy.

Commissioner Nicastro recognizes the value of organizations that can adapt and combine expertise. She commented that a "flexible, nimble, and responsive system" is needed, and she described her vision of developing a system of "braided services" that have mental health organizations, for instance, partnering with the educational system. The intermediary form of the RPDC can model a structure for the braided services the commissioner envisions. The centers also have the potential to facilitate the statewide system's ability to act more flexibly and responsively.

[13] *In 2010–11, with the loss of all state funding, the RPDC has had to drastically cut back on its own professional development programs.*

How the RPDC Adds Value to the System as an Intermediary

The positional aspect of the RPDC organization, living between DESE and local school districts, as well as between educational credentialing institutions and districts, affords the RPDC unique opportunities to add value to the educational system. The RPDC network can do so by strengthening the state's approach to instructional improvement, by facilitating enactment of policies on the ground and in practice, and by helping practitioners make effective and meaningful use of resources.

By being connected to, but not wholly responsible for or reliant on, the state educational system, RPDCs can adapt more quickly to a dynamic local environment, better identify needs and challenges that are unique to a particular place, scan the broad educational landscape for alternative approaches to a problem, and develop innovative solutions. Of course, carrying out these roles effectively requires knowledgeable and visionary leadership at the helm of every RPDC. State actors generally tend to be slower to adapt, respond to particular needs, and innovate.[14]

The value of the intermediary role that the RPDC network can play (and to some degree already has played) for the state argues for formalizing its intermediary organizational form and cautions against bringing the RPDC infrastructure completely under the control of DESE. Stronger ties to DESE and its instructional improvement policies seem to have strengthened the operation of the RPDC Network. However, the RPDC's traditional autonomy from state control also enables the RPDC to strengthen DESE initiatives (the MSIP) and allows the RPDC to innovate (see "learning walks" discussion below) and respond to local needs (development of the Teacher Academy, and the "coaches academy").

Customized Support That Facilitates Enactment of Policies on the Ground. Because of some freedom historically to operate independently from DESE, the RPDC builds or customizes professional development programs to provide the ongoing support to schools and districts that they need to actually implement an "expert" idea. For example, the RPDC lent critical support over several years to one small, rural school district that was demonstrating minimal progress on its annual MSIP review. After several years on an accountability plan, the school PDC recruited the local RPDC to help them improve the overall quality of instruction at their school. The services of the local RPDC were initially recruited by this district's PDC to conduct a book study of Robert Marzano's *Classroom Instruction That Works* (2001). By the following year, the RPDC had helped the district to recognize that it needed to focus on specific disciplinary instructional strategies, such as writing. The RPDC also helped the district leaders understand that professional development needs to be ongoing and job-embedded (as opposed to studying research-based instructional practices from a book). Ongoing and job-embedded professional learning enables teachers to try out instructional strategies and receive feedback on their use of these strategies.

[14] *Many schools of education in Missouri also recognize the capabilities of the RPDC and believe that a close relationship with the RPDC can help their programs remain more responsive to the needs of practitioners in the field and develop educational programs that are on the cutting edge.*

With the help of the RPDC, the district developed some organizational structures to enable ongoing, action-oriented professional learning that had a cycle for feedback built in. In the second year that the RPDC worked with the district, the RPDC led a four-part, site-based introduction to the Six-Trait Writing program. Professional development sessions were held on "late start professional development days," a structural innovation that the RPDC helped the district institute to permit more focused learning opportunities for teachers. After each professional development writing session, teachers were asked to tryout at least one strategy during a classroom lesson and bring student work samples from this experiment back to the next professional development session, where they learned how to score each writing trait using a common scoring guide. In this way, the RPDC helped the district put organizational routines in place that supported development of teachers' instructional knowledge, which in turn began to build the overall capacity of the school system. Within two years, this school district had met all 14 performance standards of the MSIP and was reaccredited by the state.[15]

RPDC Spreads Ideas and Practices. The RPDCs leverage professional development resources across the state and foster the spread of professional development technologies as well as a high-quality, job-embedded approach to professional learning. Not only does the RPDC spread a common understanding of what "good" and "effective" professional learning-on-the-job looks like; the RPDC also models and coaches school leaders on how to enact it. For example, when St. Louis RPDC director Dennis Dorsey works with school principals who are in charge of some of the lowest-performing schools in the state, he tells them that their school environment needs "to provide a readiness to learn" so that teachers "have an opportunity to teach." Principals agree that one indicator of an environment where learning is occurring is having students who are actually engaged in learning. Dorsey regularly sits down with these leaders so that together they can develop an understanding of what "engaged learning" looks like. Dorsey then creates a customized tool of "student engagement look-fors" for these school leaders that includes specific descriptors of students' behaviors (such as "students invest energy in listening and doing," "students promptly start learning tasks," "students display intense concentration on the task," and "students ask questions and ask for help"). Once the tool is created, Dorsey takes principals and teachers on a "learning walk" in their school and coaches them in using the "student engagement look-for" tool. After the learning walk, he asks questions of the participants:

- This was a "learning walk." So how would you describe the student learning?
- What did you see the students doing that reflect engaging behaviors?
- What did you learn from your conversations with students?

[15] *Data collection about this district included an interview with the district superintendent, interviews with the RPDC director and staff who supported the school over two years, document review of district case study following fourth cycle MSIP review prepared by DESE staff, professional development materials prepared by RPDC, and principal-prepared materials for SAP 2010 Poster Exhibition.*

- What are some of the ways that you saw the "classroom" (the physical setting) supporting learning?[16]

Through such practices, which are typical of how the RPDCs operate, a deep understanding of what effective professional learning looks and feels like is generated. Organizational routines that contribute to effective practices are modeled and established. In this way, the capability of individuals and of the system is increased.

The RPDC organizations again are seen to act as brokers, connecting districts, schools, and local educators to one another as well as to professional development resources and programs. RPDCs not only connect people and organizations but also broker ideas and practices. One mechanism for brokering ideas is the common practice among RPDC staff members to attend national professional development programs. In recent years, RPDC members have participated in professional development workshops on cognitive coaching, use of data to improve school performance, and the role of walkthroughs.

Typically, RPDC staff experiment with adapting and applying this professional knowledge to their own workplace context. Formal and informal mechanisms within the statewide RPDC network facilitate sharing of strategies and adapted ideas. For example, at a monthly RPDC network meeting, Dorsey shared his idea of learning walks and how he uses them.

A colleague of Dorsey's, Darl Davis, who directs an RPDC on the other side of the state, was interested in Dorsey's adaptation of the walkthrough and invited Dorsey to his center to teach regional leaders about using learning walks. Davis viewed the walk as a particularly useful tool for principals and teachers because it focuses attention on two important questions: "Are the children learning?" and "What are the children doing?" Like Dorsey, Davis thought it important for teachers and principals to go on learning walks together in order to develop a shared understanding of what learning looks like. Through the use of such practices and tools, schools can build their collective capacity for creating an environment for meaningful learning. As this example demonstrates, the RPDC network facilitates invention of tools as well as frequent (and often rapid) spreading of ideas.

RPDC Leverages Scarce Resources. As a broker with a wide relational network across the state, the RPDC also serves to leverage scarce resources across the system. This function of the RPDC has become particularly important in Missouri during the current economic downturn. There are many examples of scarce state resources being leveraged. The accountability system is one example of the state using the RPDC network to expand the state's influence. Developing RPDC staff as certified data teams may become another example. The reach of the state is expanded when the state joins its policies to the already-established RPDC network.

[16] *Excerpted from "hallway debriefing" tool, created by Dennis Dorsey.*

Discussion and Conclusion:

The Role of State Policy in Missouri's Professional Development Landscape

The case of Missouri demonstrates that state policy has the potential to make critical resources available to the education field, build a statewide systemic approach to education and, over a long period of time with sustained provision of resources, shape the way educational professionals in the state view their role and practice their profession. The case of Missouri also suggests that resources are likely to be used more effectively if they are tied to a common purpose, such as improvement of student performance in underperforming schools and when statewide processes (such as the MSIP review cycle) exist to guide use of these resources. Strategic use of policy can be helpful in this way. Missouri also demonstrates the value and importance of holding actors accountable for effective and purposeful use of these resources. For example, the positive changes in practice that occurred in schools and districts and in the operations of the RPDC network when DESE raised the accountability stakes in its school improvement plan (MSIP fourth cycle) demonstrate that accountability mechanisms can be valuable.

The case of Missouri also highlights the delicate balance that policymakers must strike between holding actors accountable for achieving results and supplying the necessary supports to make attaining desired outcomes possible. Policymakers must also strike the right balance between promoting a common approach through policies and mandates and allowing sufficient room for local actors to customize and fit a common approach to meet their own idiosyncratic contexts and circumstances. Finding this right balance is difficult and time-consuming. One DESE staff member summed up Missouri's attempt to find the right balance in its approach to state accountability this way:

> With the first cycle of the MSIP review, the state tried to do school improvement to the schools; in the second cycle, the state tried to improve the schools for educators (which we learned does not build capacity); and in the third and fourth cycles, we are trying to do school improvement with the schools [interview, June 2010].

Finding the right balance takes time. Missouri began its school accountability work in earnest in 1990. Having the statewide systemic capacity to actually support school districts in a state to improve instructional practices—which often involves changing school cultures, establishing different sorts of school-based relationships and approaches to leadership, developing beliefs about the nature of learning, and providing diverse organizational resources and structures—requires having a significant capacity-building infrastructure in the state. In Missouri, the RPDCs are the statewide capacity-building infrastructure. In the case of Missouri, the RPDC offers one model of what such a statewide systemic support system can look like, how policy initiatives developed the infrastructure over time, and what some of the promises and pitfalls are of having such a capacity-building infrastructure.

The Missouri case suggests that development of a statewide infrastructure that can operate in an intermediary capacity, rather than merely acting as an extension of the state department of education, may be a

more powerful lever for effective implementation of policy on the ground. However, there are also political and practical tensions in maintaining a statewide infrastructure in the form of an intermediary that is designed to instantiate policy in practice. For example, in Missouri tensions arise for DESE as to how much control to exert over the operations of the RPDC, how to monitor the effectiveness of the RPDC programs, how best to fund the RPDC network, and how to facilitate two-way communication with the network so that the centers are empowered to provide DESE with constructive feedback about whether or not policies are working in the field as intended.

Challenges of the Intermediary Role

The challenges of maintaining an intermediary role that operates between state policymakers and schools and districts are also manifest in the RPDC network. Although the intermediary role that the RPDC plays is valuable to the educational system in Missouri, DESE may not always fully recognize the value of its intermediary form. Therefore, the RPDC network needs to maintain its legitimacy as an institution and develop credibility in the state's eyes as a value-adding organization because its position allows it to operate between DESE and school districts. Because the nature of the work that the RPDC does is often about relationship building, helping to facilitate access to or acceptance of programs, and supporting practitioners' capacity to sustain use of knowledge or practices that were introduced elsewhere, the valuable work of the RPDC can remain somewhat invisible and go undetected. A challenge for the RPDC network is to make its positive effects visible and known. Linking its effectiveness to student achievement gains may not always be possible or a reasonable thing to do.

Another challenge is that the centers operate in a dynamic environment. Needs are changing continuously in the multiple environments that RPDCs mediate between. Because the needs of schools and districts and teachers change quickly and constantly, effective RPDCs need to know "what is needed when and [to be] able to scan the environment and adapt well" (Briggs, 2003, p. 9). Changes in one environment, particularly at the policy level, can also have ripple effects or unanticipated but influential consequences in other arenas. A job of the intermediary is to anticipate and recognize the interplay of these dynamics in a timely manner that will enable the intermediary to respond effectively, all the while keeping a focus on the overall educational vision.

Knowing how to respond effectively is often a challenge for the intermediary as well, because by design it serves two masters. In the case of the RPDC, it serves two or more masters at a given time. The RPDCs have ties to the state system, through an association to DESE and state or federally funded programs, and the centers have strong ties to local educators. When the needs of the two conflict, as they often do in a high-stakes accountability environment, the RPDCs must walk a fine line between exercising important functions that are regulated by DESE and remaining a non-systems actor. Like other intermediaries, the RPDCs "enjoy multiple connections and complex relationships that permit them to act across institutional domains" (Jaquith & McLaughlin, 2010, p. 86).

Safeguarding Against Threats. Several safeguards can protect the RPDC from the

known threats to its organizational form as an intermediary. One is for the RPDCs to be better at making their value demonstrable. At the moment, the RPDC primarily relies on weak methods of showing its institutional value. For instance, RPDCs keep track of the volume of professional development services that they provide and the percentage of districts in their region that they serve. They conduct surveys to measure the level of satisfaction program participants self-report. However, RPDCs need to develop better ways to measure their success, and to supply evidence of how their interactions with schools and districts translate into improved student learning.

Because the RPDC's interactions with schools and districts are complex and multifaceted, the centers need to develop an approach to documenting these interactions and assessing their efficacy in a way that is valid, reliable, and educative for RPDC staff and for district leaders and teachers. In schools or districts where RPDCs conduct ongoing, site-based work, the centers should strive to develop assessments that can make their support—embodied in the range of instructional practice, leadership moves, and associated thinking—visible and that are able to encompass a teacher's (or leader's) development over time. Such assessments should also give the RPDC and DESE a clear indication of where a teacher's instruction (or a principal's or superintendent's leadership) sits in relation to teaching and leadership standards. Evidence should be gathered from multiple sources (artifacts from practice such as classroom assessments, student work, and principal feedback to teachers, as well as observation data collected overtime). Evidence should be linked to RPDC practices and mentoring, and it should demonstrate not only how professional standards (NSDC Standards for Staff Development or Missouri Teaching Standards) are supported organizationally but also how particular standards are enacted in schools and classrooms and to what effect. A "process-portfolio" approach like that used by the National Board Certification might serve as a model for developing such an assessment system that the RPDC could use for its own continuous improvement and to demonstrate its value to DESE.

Another safeguard is to establish multiple sources of funding so that the RPDCs are able to maintain their viability during periods of economic downturn as well as maintain their independence from the state system. The need for independent funding became important last year when funds were substantially reduced to the centers. The need for alternative sources of funding became essential in June 2010, when all state funds for RPDCs were suspended. As of today, all nine of the original centers, which receive some federal funds to support the state professional development programs, have been able to find sufficient alternative funding sources to remain viable, through fees that regional school districts will pay for services and through their university partnerships. Alternative sources of funding can be a particular challenge for centers that serve primarily rural, high-poverty schools performing better than the failing schools in the state. Adequate performance means these schools are not the recipients of much attention or resources, and consequently this may make them vulnerable to becoming low-performing.

The RPDC network needs to actively manage this longtime tension in the state between urban and rural. Fifty of the 52 lowest-performing schools in the state

are located in urban areas, so laserlike attention is focused on the urban setting. Yet attention must still be paid to all those small, rural districts, many of which are also located in the poorest regions in the state. How can the RPDC and the state continue to meet the needs of these districts that have paltry budgets and even more meager professional development budgets, especially if the state is unable to provide funding to the RPDCs? Important state-level policy questions linger about what sorts of support are needed to develop and support effective teachers and leaders in these varied contexts. What can (and must) the roles of the state and the RPDC be in supplying these supports—especially when the state is not able to balance its budget?

Given these difficult questions of leadership and organizational purpose, the final safeguard to ensure the continued viability and success of the RPDC network may be to cultivate its own strong leaders within the network. Now more than ever, RPDC leaders need to be forward-thinking and help the network remain flexible and adaptive. For instance, if flagship programs of the RPDC cease to meet the needs of educators across the state, the RPDCs must be able to recognize this problem and remain flexible enough to adapt their own programs to meet shifting and evolving needs, just as the RPDC must help state programs adapt to the realities in schools. In this way, the RPDC leadership needs to anticipate how the system must change and envision which capacity needs to develop, in order to support the necessary changes. In other words, the RPDCs need visionary leadership and the ability to steer a steady course to achieve the vision. If the RPDC network remains able to adapt its programs to fit the changing needs in various contexts, then the RPDCs not only are likely to survive and thrive but may emerge as a critical component of a state-level, systemwide improvement effort. Indeed, in so doing the RPDC network will perform its valuable intermediary role effectively by helping DESE to see that the RPDC organizational form is an essential component in the educational policy landscape in Missouri.

NEW JERSEY

Creating the Platform for Professional Development Reform

Case Study Overview: Why Study New Jersey?

Twelve years ago, New Jersey did not have a professional development requirement for teachers or a cohesive plan for schools and districts to focus their efforts. In 1998, the commissioner of education, in concert with the New Jersey Education Association (NJEA), created the Professional Teaching Standards Board (PTSB). Comprising a majority of teachers along with a diverse group of other educators and community members, this group met with national experts (notably Michael Fullan, Dennis Sparks, Stephanie Hirsh, and Joellen Killion), reviewed research, and shared their own expertise in order to create governance structures, standards, and planning and approval tools to guide professional development work at all levels in the state.

Today, New Jersey code requires that school-level committees follow state professional development standards (based on the National Staff Development Council guidelines) and state content standards to create school professional development plans. These plans are collected by district-level committees and evaluated by a county board, keeping the work local and the responsibility on the schools to identify needs and develop action plans.

To do this work, schools are encouraged (though not mandated) to develop professional learning communities (PLCs). Knowing that this is a significant undertaking, the PTSB and other organizations have worked to prepare schools by creating a common language around PLCs, supplying training materials, and offering coaching support; and a range of providers from university-based networks to private professional organizations support professional learning needs as well.

In addition to these efforts, there has been significant work done as a result of the fifth ruling in the *Abbott* v. *Burke* case in 1997, which declared that the poorest 31 districts in the state should be funded at a level equal to the richest.[17] As part of the redistribution of funding, the court decision mandated, among other things, universal high-quality early childhood education (ECE). Development of a research-based ECE program and the extensive professional development needed to establish and maintain the system have had significant implications for how young children are educated and how older kids should be taught, and for thinking about ways to attack the achievement gap.

[17] *Recently, under Governor Jon Corzine, the Abbott decision umbrella has been widened to include districts beyond the original 31, which may affect the level of funding available to the larger group, but funding for early childhood education and other programs continues. The Abbott ruling is discussed in more detail in this report.*

Although New Jersey has made some great strides in supporting and implementing this work, there are still considerable challenges. To be done well, reflective and collaborative professional development takes capacity, time, and patience. All of these factors are challenged by serious budget issues, which have led to deep cuts in education spending.

New Jersey's story exemplifies a state's efforts to use a grassroots team to create policy that requires real changes in how professional development is done and a support network to build the capacity needed to do such work. This ambitious goal is supported by research (Louis, Marks, & Kruse, 1996) but faces real challenges on a statewide level, especially in such difficult economic times.

Promoting Wide-Scale Participation in Professional Development Still a Challenge

There has been intensive state supported and locally implemented professional development in the former *Abbott* districts around literacy development and the teaching of English language learners. In addition, New Jersey has done significant work around academic standards across the state, but statewide the level of professional development was not high, as reported in the 2008 Schools and Staffing Survey (SASS).

Those unremarkable numbers may be partially due to undersampling in urban districts, where much of the recent effort in professional development has been focused, and partially to the fact that until recently New Jersey had no state professional development plan. In the last 12 years, the state has worked to develop a thoughtful system for requiring and supporting professional development, one that encourages all schools to monitor needs and set goals for improvement, specifically through collaborative work.

New Jersey's Educational Context

A State of Extremes. New Jersey is a state of startling contrasts, with some of the wealthiest suburbs in America as well as some of the most struggling urban areas and isolated rural areas. The state has nearly 1.4 million students in 2,500 schools in more than 600 districts (NJDOE, 2010a). Racially, New Jersey is close to the national average, with 54% white, 17% black, 20% Latino, and a higher than average 8.5% Asian (see Table 6). With such a representative sample, one would expect a similarly typical income range, but New Jersey faces interesting issues around extremes in resource allocation. According to a 2008 New Jersey Policy Perspective report, "the top 5% in New Jersey makes 14.1 times the bottom fifth—the fifth highest ratio in the U.S." (*Pulling Apart*, 2008). The *Abbott* ruling of 1997, which declared New Jersey's funding system to be unconstitutional, partially remedied the situation by giving the 31 poorest districts funding equal to that of the richest districts. Recently, under Governor Jon Corzine, the *Abbott* decision umbrella was widened to include districts beyond the original 31, but unequal funding remains among the 605 districts in the state.

Some of these economic realities are reflected in New Jersey's NAEP scores. Overall, scores at the fourth and eighth grade levels are very high (among the top five states) for reading and math, and they have shown statistically significant growth in eighth grade math in the period from 2003 to 2009. More impressively, on the

2007 NAEP writing test New Jersey had the highest scores in the country overall and for low-SES students. The scores for low-income students in reading and math, however, are lower in comparison to those of similar students in other states, lagging by a sizable margin from the scores of the students who are not eligible for free or reduced-price lunch. Although this gap is troubling, New Jersey's low-income students have shown strong growth from 2003 to 2009 in reading at both the fourth and eighth grade levels and in math at the eighth grade level. A study by the Education Trust called Gauging the Gap reveals New Jersey to be one of nine states that, between 2003 and 2007, showed significant improvement in reducing the achievement gap across all age groups in reading and math NAEP exams (Rowan, Hall, & Haycock, 2010).

New Jersey's Professional Development Policy Context

Setting up a System for Regulating and Promoting Coherent and Collaborative Professional Development

In 1998, Commissioner Leo Klagholz met with members of the NJEA to map out first steps in creating a coherent professional development system for New Jersey. The two main ideas that came out of that meeting, which were then written up by the

TABLE 7. NEW JERSEY'S K–12 PUBLIC SCHOOL STUDENTS: DEMOGRAPHIC CHARACTERISTICS

Student Enrollment	Number of Students (NJ)	Percentage of State Total	Number of Students (National)	Percentage of National Total
All students	1,380,968		51,455,471	
Economically disadvantaged students	414,582	30.0	22,686,136	44.1
Limited-English-proficient students	54,154	3.9	4,539,740	8.8
Children with disabilities (IDEA)	223,910	16.2	6,894,814	13.4
White	746,134	54.0	28,036,802	54.5
Black, non-Hispanic	236,587	17.1	8,539,805	16.6
Hispanic	275,405	19.9	11,094,577	21.6
Asian/Pacific Islander	116,970	8.5	2,475,281	4.8
American Indian/ Alaskan Native	2,199	0.2	588,938	1.1

Source: Summer 2010 EdFacts (2010). SY 2008-09. http://www2.ed.gov/about/inits/ed/edfacts/state-profiles/newjersey.pdf

Department of Education with stakeholder input and made into state regulation, were the requirement of 100 hours of approved professional development for teachers over a five-year period and creation of state, county, and district boards to oversee the professional development process. Creation of these groups was the key to generating what Victoria Duff, a state DOE teacher quality coordinator and professional development leader, calls the "grassroots involvement" they desired, which involved numerous stakeholders at every level.

The most powerful of the boards was the Professional Teaching Standards Board, consisting of 19 members appointed by the State Board of Education—each of whom was nominated by his or her professional organization—including 10 teachers, two principals, one superintendent, two college representatives, two school board members, and two members of the public. Although the board was set up as an advisory group working with guidance from what was then known as the NJDOE's Office of Standards and Professional Development[18] to make recommendations to the commissioner of education, they have had a strong influence on the professional development policies enacted in the state over the past 12 years (NJDOE, 2001). The group's first order of business was to meet with national experts (among them Stephanie Hirsh, Dennis Sparks, and Michael Fullan), review research on professional development, and look at models for professional development standards used by other states and written by NSDC/Learning Forward in 2001 in order to develop New Jersey's first professional development standards in 2000.

Coupled with the work of developing the initial standards was the effort to examine how all this would be put into practice. Using their research and their own firsthand expertise, the board discussed conditions that support and restrict quality professional learning in order to develop governance structures, guidance materials, and resources for planning at the local level and an approval process focused on growth at the county level. A key component of the early system was that school districts were required to develop their own professional development plans. According to the department of education, New Jersey's goals were "to assure that teachers participate in professional development tied to the teachers' learning needs as identified in their yearly evaluation; and to ensure high-quality district and school-based professional development opportunities (formerly known as 'inservice') through effective district and school planning and professional development opportunities by teachers and administrators" (NJDOE, 2010c).

Furthermore, a series of regulations for professional development for teachers were passed, which embedded the required 100 hours of professional learning into teachers' annual professional development plans (PDP), mandated mentoring and induction programs for beginning teachers, and further defined the governance structures to involve educators in the professional development process at the state, county, and district levels. Thus began the process of making teachers more active and responsible for their professional learning and embedding that work within schools.

This work was then followed by a similar effort to create professional practice standards for teachers and leaders using models such as the Interstate New Teacher Assess-

[18] *The current name of this unit is the Office of Professional Standards, Licensing and Higher Education Collaboration.*

ment and Support Consortium (INTASC) standards, and in 2003 the State Board of Education officially adopted the regulations for Professional Standards for Teachers and School Leaders designed by the Professional Teaching Standards Board. The document covers 11 standards for teacher practice, including instruction and planning, assessment, special needs, and professional development; and six standards for leaders, including managing a school to ensure effective learning, collaborating with community members, and "sustaining a school culture and instructional program conducive to student learning" (New Jersey Professional Standards, 2004).

At the same time, focus on professional development for school leaders increased as a result of New Jersey's State Action for Educational Leadership Project (SAELP), funded by the Wallace Foundation. In that program, policymakers and school leaders came together to assess the state of school leadership. As a result, they made a series of recommendations, in part establishing a professional development requirement and adopting Interstate School Leader Licensure Consortium (ISLLC) standards for training and accreditation for school leaders. The following year, the Professional Development Advisory Committee (PDAC) was created to orchestrate implementation of the SAELP recommendation (NJDOE, 2010b).

Since 2003, this system has made a strategic push for greater focus on data-driven local ownership of the professional development process and less focus on seat time for educators. In 2005 the PTSB partnered with NSDC, now Learning Forward, working with Joellen Killion to develop a *Tool Kit for Collaborative Professional Learning* to give schools and teachers the resources they needed to start identifying issues and tailoring their professional development needs to their specific contexts. The toolkit was piloted in the former Abbott districts, which led to revisions of the Tool Kit and then state adoption of the revised New Jersey Professional Development Standards based on the NSDC/Learning Forward model in 2007.

Influenced by continued work with NSDC/Learning Forward, the shift to embedding professional learning in schools gained momentum in 2007 and 2008 when some important changes were made, bringing the plan up to its current form. A school-based planning process with a focus on student learning, as well as school-based committees, each comprising three teachers and an administrator, were introduced in new state regulation. With new materials created to support collaborative professional learning, the state piloted the new professional development planning and review documents in the Cherry Hill School District, which agreed to fully commit to the planning and learning process in order to model that work. On a broader level, sessions led by Doug Reeves, Steve Barkley, and Richard and Rebecca DuFour helped build understanding of collaborative work and enthusiasm to take on that challenge.

The Current System for Schools: School-Focused and Self-Reflective. In the current iteration of the state professional development system, rolled out statewide in 2009, all schools have School Professional Development Committees (SPDC), made up of three teachers and an administrator, which create professional development plans, making the work more local and putting more responsibility on the schools themselves to identify needs and develop action plans. The schoolwide plans are expected to use a backward-planning process to examine student achievement data as the basis for

identifying their professional development needs, encouraging (though not mandating) development of school professional learning communities. As NJDOE Manager of Professional Standards Eileen Aviss-Spedding notes, this shift in focus "requires districts to really think systemically about student learning needs in the schools and identify what teachers need to know and be able to do to meet those goals, as opposed to having us go in and say, 'You have to have X amount of PD in content or pedagogy.'" All of the schools use state-supplied forms and templates as well as state content standards to write up their plans, and then they send those plans to their district committees or Local Professional Development Committees (LPDC).

Each district committee reviews and consolidates the school plans into one district plan, and then a County Professional Development Board (CPDB) comprised of 15 teachers, two college representatives, two district administrators, two school board members, and two members of the public uses an NSDC/Learning Forward standards-based rubric to review the district plans to approve them or offer feedback for necessary revisions.

Besides creating a democratic structure for the professional development work, this approach is meant to increase ownership of the work. Duff of the NJDOE observed, "You begin to see an impact in leadership and the depth of teacher conversation. Once this becomes a routine, you begin to see a change in teacher practices. So we're really talking about: How do we get teachers to go in, observe, get descriptive feedback? How do we get administrators to be doing the same thing so the teacher can grow in their practice based on what they're learning in their teams?" The process outlined by the PTSB creates an accountability system, but more important, it also leads to teachers reflecting on and adjusting their practices.

Similarly, a *Toolkit for Mentoring*, created in 2003 by the New Jersey Mentoring Task Force with support from the NSDC/Learning Forward's Linda Munger, gives the district committees guidance to develop their own district mentoring plans (required under N.J.A.C. 6A:9-8.4), which would then go to the county superintendent for approval. In that system, officially adopted in 2003, the state requirements call for new teachers to develop a professional development plan within 60 days of beginning their assignment. Their professional development plan is part of their induction and mentoring program, which is required in obtaining a standard teaching license. Mentoring must be conducted for 30 weeks for traditionally prepared teachers or 34 weeks for teachers prepared through alternative routes. Teachers who serve as mentors as well as novice teachers participating in mentoring can use those hours toward the 100 hours of professional development required every five years.

The minimum of 100 hours for teachers has stayed the same, but how those hours are fulfilled has changed. In the past the focus of professional development work was outside the school, now the goal is for many of those hours to be done in embedded professional learning activities within schools and for teachers to go out of the school building only to get knowledge addressing specific areas of personal or school need that can't be found within the school walls. According to state guidelines, the hours should be aligned with each teacher's annual professional development plan; they are not part of license renewal (New Jersey does not have a recertification requirement). The

teachers' professional development plans are based on a combination of the teachers' interests and needs as seen in student data; similarly, the plans should be connected to the teachers' district and school professional development plans. Furthermore, the professional development plans and activities should be aligned with the state professional development standards (adopted from those of the NSDC/Learning Forward), the Professional Standards for Teachers, and the state curriculum standards. All of this professional development planning is overseen through the teachers' annual evaluation process, and districts are responsible for monitoring compliance.

School leaders are also required to develop individual professional growth plans. Over the course of three years, leaders assess themselves using ISLLC standards, assemble a collaborative advisory team to give them feedback on their plan, and then implement their plans. Monitoring is done by their supervisors, or in the case of superintendents through their professional association.

Although much of the state's professional development work (especially the work done by the PTSB) has been under the auspices of what is now called the Office of Professional Standards, Licensing, and Higher Education Collaboration, nearly every division of the NJDOE has some element of professional development support, with important initiatives coming from outside of the professional standards office.

The work of the Office of Academic Standards, which in 2009 overhauled the curriculum standards by adopting new Core Curriculum Content Standards spanning preschool teaching and learning standards through K–12, has been particularly important to the workings of all schools in the state. With widespread stakeholder and professional input, that office created new standards for visual and performing arts, comprehensive health and physical education, science, social studies, world languages, technology, and 21st-century life and careers. It has also worked to integrate the Common Core State Standards for mathematics and English language arts and literacy. This effort has spawned a significant surge in professional development activity, both from the department itself and from various participating professional organizations.

Also affecting the whole state, the Division of Field Services' New Jersey Quality Single Accountability Continuum (NJQSAC) was created in 2006 under state regulation, covering evaluation of the performance of school districts as a means of monitoring and evaluating the instruction and program, personnel, fiscal management, operations, and governance of public school districts. The QSAC provides districts with detailed rubrics to self-assess their schools and then report to their county superintendent for a verification review and possible follow-up interventions. Although there are sections on the instructional program and personnel that cover professional development specifically, the whole system ideally acts as a professional learning tool for school teams and leaders to identify needs. The QSAC professional development rubrics highlight the state professional development system of school-level planning with district and county oversight, and the rubrics also focus on the SEA's push for linking the professional development work to curriculum standards and data-driven analysis targeting students' learning needs. The QSAC's efforts in those areas add an important level of accountability to the state's professional development efforts.

Finally, the Collaborative Assessment for Planning and Achievement (CAPA) program, started in 2004, gives schools and teams of observers review protocols to assess the quality of the schools' improvement efforts. With seven standards and corresponding rubrics—similar to those of the QSAC—covering such topics as curriculum and instruction, leadership and NCLB School Improvement Committee, and professional development, CAPA observers score schools on the basis of data, including artifacts supplied by school teams; walkthroughs; interviews with students, teachers, and administrators; and school climate surveys, to give schools feedback on where they stand on the various standards. Recommendations are then given and action plans created. The feedback is meant to both present the school with an opportunity to reflect on the quality of professional learning at the school and inspire professional learning based on identified needs, with the overall goal being to promote sustained change as opposed to mere disciplinary action.

The professional development efforts of these offices are coordinated and purposefully complementary in some areas, and there has been an effort to increase that articulation. But a number of DOE officials say that more work could be done to coordinate the various efforts.

Despite the ambitious scope of NJDOE's professional development efforts, funding for the work is tight. Beyond Title I and Title II funds and some state money for salaries for DOE staff, there is little for other state programs. Over the course of 12 years, however, with the help of the PTSB and multiple offices of the DOE, the Office of Professional Standards has designed a system that engages local schools and teachers in thoughtful professional development planning. This system is undergirded by a set of state regulations and mechanisms to ensure that the work does happen, while also allowing local agency so that the work is meaningful for schools engaged in it, and not just another state requirement.

New Jersey's Professional Development Landscape

Creating the Culture, Tools, and Capacity to Support Collaborative Practice

Consultant Steve Barkley, who has been involved in many facets of professional development work in the state, likes to use the term "modeling the model" when he talks about helping schools develop a system for professional collaboration. In his workshops, he does not spend a lot of time lecturing the participants about where they should be at each step of the process; rather, he gives them space to work together to figure out next steps on the basis of their needs as a school. According to Barkley, professional development should help teachers grasp "where they should be in the classroom."

This process is similar to the way in which Barkley facilitates monthly meetings of the New Jersey Professional Teaching Standards Board (PTSB), to chart the direction of professional development work in New Jersey and specifically to plan the progress of its ambitious effort to encourage use of professional learning communities (PLCs) in schools across the state. Creating PLCs is not required by state regulation, but the PTSB sees them as an excellent way for schools to meet the professional development requirements and focus on improving classroom practices across all classrooms.

As stated in various DOE materials, one of the main goals for the professional development system overall is to lead to a cultural shift in how teachers and administrators see professional learning. With the push to have more professional development embedded in the constant activities of school, meeting the required 100 hours has become a more natural part of the school process. On this topic, Barkley says: "Fewer people asking me if they've gotten hours for a workshop will be a sign that there's a whole shift occurring and how people are processing it in their heads. Then the next step is a change in teacher practice. And then the next is a change in student practice." (Interview, April 27, 2010).

Knowing that this type of work is complicated and that confusion could derail the DOE's efforts, a group called the New Jersey Professional Development Partnership brought together the New Jersey Association for Supervision and Curriculum Development (NJASCD), Kean State University, the New Jersey Principals and Supervisors Association, the New Jersey Education Association, and representatives of the NJDOE to create a document called *A Common Language for Professional Learning Communities* (2008). The group uses Dufour's definition of a PLC as being "educators committed to working together using processes of inquiry, problem solving and reflection upon their practice" (DuFour, DuFour, Eaker, and Many, 2006). The partnership also shares what they call "critical questions" of collaborative learning:

- What is essential for students to know?
- How will we know when they have learned it?
- What interventions will we put in place when they don't learn it?
- What do teachers need to know and be able to do to support student learning?
- What professional learning must the team engage in for student learning?

(*A Common Language*, 2008, p. 4).

These questions give direction to the kinds of areas on which PLCs can focus. They are then followed by a list of the activities PLCs can do, with collaborative teacher teams engaging in collective inquiry into their practice by:

- Examining data on student progress
- Analyzing student work
- Determining effective strategies to facilitate learning
- Designing and critiquing powerful lessons
- Developing classroom-based common assessments to measure progress

(*A Common Language*, 2008, p. 4).

The document goes on to talk about the need for different types of leadership and the changes in culture necessary for PLCs to function effectively. The guidelines do not create a list of requirements; rather, as the title implies, they explain the common terms so they can be understood and used efficiently within schools and across the state to support teaching and learning.

Reflecting on the process of creating common ground on the topic of PLCs, Barkley says:

> Part of what really impressed me in New Jersey was the ability for the partnership to create that common document defining PLCs, and then to get all these training groups together. It's kind of neat to know that the teachers can go to an NJEA function and find that the same handout on definitions for PLCs is being handed out at their association meeting that was handed out back at their school by their principal. (Interview, April 27, 2010)

In this quote, Barkley names two key elements to the New Jersey plan. Beyond gaining broad buy-in for the program though the PTSB, the state made sure there were various forms of broad support for schools to work collaboratively, and specifically for schools looking to implement PLCs and do other collaborative work.

Information Sessions Support Understanding and Implementation of Collaborative Work. Building on the effort to create a common language, the state set up a series of inspirational and informational sessions over the course of the 2009–10 school year for all stakeholders in the education system. Doug Reeves made a kickoff presentation for superintendents, called "Celebrating Our Strengths and Confronting Our Challenges: Transforming Our Schools Through Collaborative Professional Learning" on leading professional learning at the district level. He covered such issues as overcoming immunity to change, gaining critical mass, and creating hope. Steve Barkley then conducted two series of presentations in three locations for all interested stakeholders. The first was about how PLCs connect to achievement, and the second was focused on how to facilitate the collaborative work at schools. In addition the NJDOE presented six webinars, which covered topics ranging from changes in the professional development requirements and ways to build a collaborative culture to planning and implementation strategies.

Concurrently, the state promoted the online *Tool Kit* they had created with the help of the NSDC/Learning Forward. The first line of the entire document (more fully titled *Collaborative Professional Learning in School and Beyond: A Tool Kit for New Jersey Educators*) lays out the thinking behind the NJDOE's professional development initiative overall:

> Today's professional development requires a shift from its more traditional form of adult pull-out programs or after-school and summer learning to a form that brings learning into the forefront of what teachers experience each day in school. If teacher learning continues to be separate from the work teachers do each day, most will continue to view it as irrelevant, dissatisfying, and disconnected from what they do in their classrooms. Moving professional development to the school means teachers can lead their own learning and use external learning opportunities to expand and extend their learning (Killion, 2006, p. 13).

What follows are 300 pages of information and resource materials broken into 13 chapters, with topics ranging from universal issues such as "Facilitating Collaborative Teams" and "Using Data" to more specific sections such as one on New Jersey's standards and another on the role of the central office. Each

chapter contains introductory text and a series of tools, which include activities and articles. For instance, Chapter 7, "Making Time," has an article on time and school culture with accompanying discussion questions, forms for analyzing how time is used in a given school, and examples of schools that have found creative ways to make time to collaborate. With a vast number of handouts and answers to frequently asked questions, the *Tool Kit* acts as a resource for schools to prepare for and anticipate challenges with the collaborative learning process. Like a much more expansive version of the document *A Common Language for Professional Learning Communities*, the *Tool Kit* also creates a common language for the details of collaborative professional learning. Jerry Woehr, a coach for PLC work around the state, says the *Tool Kit* is a "wonderful document. If your teams are fighting, here's what you do. If your team doesn't have a good goal or doesn't know how to evaluate their goal, the *Tool Kit* can get you on track. I've said to districts, 'If you really had somebody who took this thing, read it, and internalized it, that person could be your facilitator. You wouldn't need me.'"

So the vision, on the state level, involved modeling the model by bringing together diverse stakeholders in the process and offering differentiated scaffolding to support the learning needs of various districts. To spread the word about the various events, the NJDOE sent broadcast emails to all district and county leaders, made announcements at leadership meetings, gave presentations at county board meetings, and created a dedicated web page; other major professional organizations made announcements as well. Although the support presentations and use of the *Tool Kit* are voluntary, their connection to the planning process creates incentives to access them, but the NJDOE also hopes that their high quality and word of the program's success will inspire districts and schools to get involved.

New Jersey's regulations and system requirements support these efforts. Every school and district must develop professional development plans, which should be based on meeting their particular local needs, and they must meet schools' quality and improvement goals, so there is a built-in incentive to make the work toward those goals meaningful. The professional development standards should drive professional development planning, which pushes districts to develop focused collaborative structures based on student learning needs. There is no requirement to form PLCs, but there are supports to do that work and other types of collaborative work well, along with examples of places that have made significant changes as a result of such work.

Support and Models in the Field: The State Creates a Supported Network for Schools Attempting to Establish PLCs. With the policies and tools in place for districts and schools to take on the challenge of focusing on standards-based professional development, the NJDOE looked to supply models and support for actual practice. Believing that supported success would lead to more success, the state used Title II funds to offer the opportunity for schools with little PLC experience to apply to be part of a program called the PLC Lab Schools Project.

After considering a spectrum of geographical regions and socioeconomic compositions, 33 schools (out of the nearly 75 that applied) were selected to participate in a series of professional development ses-

sions and ongoing support overseen by the NJDOE and a services provider, the Educational Information and Resource Center (EIRC). Jerry Woehr, a former principal and superintendent in New Jersey who successfully turned his district around using a PLC framework, directed the EIRC oversight. Once the schools were chosen, Woehr set up kickoff summer meetings for superintendents and facilitators and then had five themed informational meetings over the course of the year.

Barkley cofacilitated three of the sessions on initiating and maintaining a PLC, and there was a session on data analysis. In between meetings, schools were given readings, and where possible Woehr and members of the NJDOE's professional standards unit visited sites to give more personal feedback. Woehr used the *Tool Kit* in his training, and by having Barkley as a resource there was consistency with state goals and objectives. Schools were also given two administrations of the NSDC/Learning Forward Standards Assessment Inventory (SAI) survey, which examines the fidelity of schools' professional development to the standards. According to Woehr, many schools used the data from the initial administration to make their district and school professional development plans.

In keeping with the idea of modeling the model, these sessions and activities were meant to give school leaders the tools to do this work on their own. For some leaders, this came as a surprise. As Woehr explains, "Some school leaders said, 'What we want is for you to be our facilitator. We want you to be here on site,' but we said, 'No, no, no. We're helping you create it. We're not doing it.'" The goal was to give school leaders the tools to help them and their staff members take ownership of the reflective process, as opposed to having outside facilitators come in and implement a program.

Having gone through a year of working together with the 33 schools, Woehr finds, "The success really is very dependent upon the principal having knowledge and talking the talk and walking the walk."

The work on the PLC Lab Schools Project was chronicled by Rowan University's Tom Monahan, who analyzed the two administrations of the SAI survey and did in-depth qualitative studies of three of the participating schools. Monahan's final report examines the degree of program change reported in the SAI, the participants' attitudes about the PLC lab schools training workshops, and the level of the schools' PLC development as shown in his school observations and in the collected artifacts. Monahan finds that overall the participants were "very positive" about the workshops; they showed some constructive changes in PLC-related areas of the SAI such as using data to drive instruction and the degree of collaboration (although he is careful not to make a causal claim about a link to the PLC Lab Schools Project for that change). But he also finds that implementation levels and styles varied greatly as a result of leadership, experience, and capacity and as an indication that there are many ways to go about doing this work (Monahan, 2010).

Patience is vital, but in today's "results now" environment allowing programs to grow can be difficult. Having seen schools start to get their footing after one year, Woehr is hoping that the program can continue to be funded to help the original lab schools and others, because he has seen personally and as a coach that "when it is done well, it is a powerful system for students and teachers." The Lab Schools

Project example shows the benefit of having programs to support policy initiatives, but along those lines it also shows that this kind of work does not happen overnight. States or districts or schools that want to embark on this kind of work need to be ready to support and sustain it with adequate resources to provide sufficient time for the initiative to take root.

An Exemplary Practitioner Is Tapped to Model Elements of Effective PLC Work. Pat Wright, who is a principal, PTSB member, and spokesperson for PLC work around the state, agrees that "a lot hinges on leadership." As a prerequisite for her workshops, in her role as a coach for the state and the New Jersey Principals and Supervisors Association (NJPSA) she stresses the importance of schools bringing teams, including the principal and teacher leaders, to work together to build implementation plans for their work so that the principal isn't trying to do everything alone. NJDOE's Duff agrees, saying that successful leaders she has seen, "whether they are a central office leader or a principal, built a coalition in their schools of people who were front runners" for this work.

Building that coalition requires what Wright calls the "human element," a factor that is sometimes ignored. Interestingly and ironically, in her work with schools on climate and bullying issues she has found that even schools putting a lot of effort into improving student-to-student relationships can fail to see the connection to adult-to-adult interactions or the potential of moving disconnected adults from civil to truly collegial relationships. To Wright and others, establishing a conducive climate and culture is vital, and she does so by honoring the process. She is "not taking everybody and putting them in rooms, and putting them in PLCs with no purpose." To Wright, the key for getting people at the state or school level to do such work is "you have to start with a vision, and you have to start with a mission." If there is no shared purpose of working toward a goal, then meetings become unproductive and a source of resentment for the teachers.

One of Wright's keys to building successful PLCs is creating the same type of organic process that she and the PTSB have tried to model on the state level. Even though she helped author the state's professional development system and has strict ideas of what does and does not constitute effective learning communities, she warns that there is still no easy answer for how to do this work: "Some people think that there's some kind of recipe for this. In our school, teachers are now ready to look at establishing SMART[19] goals based on this year, but that took time. Some people don't understand that there's a process here. It starts with what their initial needs are, and you build from there." In fact, even though she had had success with PLCs at her former school, when Wright started at her current school she knew that effective PLC seeding would come not from pushing the system for its own sake but rather introducing it as a tool once teachers collectively made goals for what needed to be done at their school. Speaking of the process she went through at her school, Wright explains:

> When I came on board, I just asked, "What do we need?" And I put out three easels: climate, curriculum, and professional development. And I said, "What are the current strengths and weaknesses in each of these areas?" When we got to professional devel-

[19] *SMART is an acronym for simple, measurable, attainable, results-oriented, time-bound*

> opment, I said, "What are some of the strengths in professional development?" After a few moments, one brave person said, "Well, we really don't have professional development." See, they didn't even see the one-shot workshops they were doing as true professional development. I was glad of that, and then I explained to them what the possibilities were if we became a learning community. It certainly was not "This is how we're going to do it." (Interview, April 29, 2010)

By allowing the staff to see the opportunity for using the PLC model as a means to improved learning rather than dictating use of collaboration for its own sake, Wright was able gain buy-in from a staff that had previously not worked in such a collaborative way and could have easily pushed to maintain the status quo.

PLCs are a Tool to Improve Curriculum and Instruction. Process alone, however, is not enough either. One high-level DOE administrator expressed a concern about how PLCs are interpreted:

> I really believe that having PLCs is very good strategy. What's bothering me is that many leaders and teachers do not consider it to be a strategy. It's considered a solution. It's not. So if they're doing training on professional learning communities and not on how to learn to teach reading, you've got a dysfunctional system. (Interview, April 30, 2010)

Wright agrees, saying:

> To me the missing component in developing meaningful PLCs is a viable curriculum. The curriculum should be the basis of PLC conversations. Everybody needs to be able to answer the question, 'What do we want students to know?' Teams are being formed and asking, 'What are we supposed to be talking about?' The answer should be their practice, which has its foundation in a curriculum that directly impacts classroom instruction, and therefore student learning." (Interview, April 29, 2010)

These issues should come up in each PLC's discussions because all PLC work should arise from the work that students do. More central than PLCs themselves to the work of the PTSB and the state staff developers working out in the field with schools is the focus on student learning. More explicitly, the School Level Professional Development Plan asks schools to identify "the key NJ Core Curriculum Standard areas on which the school will focus their professional development" (NJDOE, n.d., p. 5). In the first pages of the *Tool Kit*, Killion writes, "Schools that have made dramatic improvement in student learning have done so as a result of teachers learning together, focusing on core curriculum standards, and using common assessment data to measure student progress toward standards" (2006, p. 13). As the NJDOE administrator cited above noted, PLCs are "a tool" to get educators to address issues around student learning; curriculum is central to this discussion, and the work of the NJDOE supports that outlook.

Even with all of the support materials and presentations for teachers and leaders to stay focused on the message of using professional learning to identify needs, buy into a plan, and develop a curriculum to implement the plan, doing this work takes a lot of effort

and capacity. New Jersey's educators need resources and support to effectively improve their work on both process and content. For that, New Jersey has numerous professional development support providers.

The Critical Role of Support Organizations

The Office of Math and Science Education Uses Federal Grant Money to Team up with Universities Across the State. This past summer (2010), the Office of Math and Science Education launched a program funded by a $3.05 million Math Science Partnership grant (under Title IIB) to bring vertical teams of teachers together to unpack the life sciences standards, where significant changes were made to add more problem solving and lab-based thinking; and the math standards, where the Common Core has been adopted. As NJDOE'sscience coordinator Michael Heinz explains, "Six universities will collaborate with multiple schools in their region. So for example, Rowan University in the south is partnering with 12 different school districts, and each of those 12 districts will send teams of math teachers and teams of science teachers to work with specific faculty at Rowan, and that's being replicated in five other universities across the state."

Over the course of the next year, the teacher teams will take courses at the universities, bring PLC coaching to their districts, and have follow-up activities back at the universities. During that time, they will familiarize themselves with the standards and experiment with how to implement them while also learning how to work collaboratively. The hope is that those teams will come away with articulated, multigrade-level standards knowledge and the collaborative skills to share those ideas with the rest of their staff.

This effort to include PLCs was intentional. Heinz explains that by tapping into the collaborative initiative from the professional standards side, program participants can dovetail the work they were already doing in professional development planning to further their understanding and use of the new standards. Additionally, in true collaborative fashion, at the end of the year the teachers in this current cohort will help train the incoming cohort starting next summer, and the whole program will be supported by a web-based forum where teachers from different schools can discuss issues around the standards and their curricular ideas for teaching them.

A Professional Development Center Establishes an Innovative Credentialing Program. The NJDOE is not the only player in town when it comes to promoting high-quality and innovative professional learning. The New Jersey Center for Teaching and Learning (NJCTL) has been doing groundbreaking professional development work in math and science instruction as well. Using the innovative curriculum of 2006 New Jersey Teacher of the Year Robert Goodman, NJCTL has teamed with Kean University to create the Progressive Science Initiative (PSI), where New Jersey–certified teachers are able to get new endorsements in physics. The program is targeted to give experienced teachers the disciplinary and pedagogical content knowledge they need to fill hard-to-staff positions in high-needs districts. To illustrate this shortage, "Montclair State University graduated 955 prospective teachers in 2007–08, but only one (was) certified to teach physical science" (Rundquist, 2009). By contrast, in 2010 PSI certified 42 physics teachers.

Goodman's PSI curriculum focuses on teaching the core concepts of physics as a

conceptual and mathematical base for the study of biology and chemistry, as opposed to the more commonly reversed sequence. The content work is facilitated with extensive use of technology, including SMART boards and responders to monitor student understanding and promote discussion. Teachers in the PSI certification program take a five-week intensive summer class and then a yearlong night class that mimics the kinds of teaching they will do with their own students (Rundquist, 2009). According to NJCTL Trustee Peggy Stewart, teachers in the PSI certification program work in PLCs to explore the curriculum as a living document, to learn the content and establish their own ways of delivering the concepts. A spinoff program called the Progressive Math Initiative has also been started, and the programs share all of their instructional materials freely.

Drawing on the professional expertise of the teaching corps, the resources of the universities, and the support of professional organizations (in this case, one originally created by the NJEA) to fill an identified need, this dynamic program represents exactly the kind of grassroots problem solving that the PTSB encourages with its professional development planning process.

Former State Leaders Lead a University Program for School Reform. The Rutgers Institute for Improving Student Achievement (RIISA) is another major player in offering professional development to help schools and districts meet state professional development standards and curriculum and leadership needs. Led by William Librera, former New Jersey state commissioner of education, and Penelope Lattimer, former assistant commissioner of education, RIISA lends support to schools in both content areas (English language literacy and math) and leadership training. They do this work through three main projects: the Middle Grades Network, the High School Network, and leadership development and mentoring training.

In return for schools' membership fees to the Middle Grades Network, RIISA organizes five meetings a year for the teams from 32 schools in 11 districts in the network in which topics of literacy, math, and leadership are discussed, and then RIISA content specialists visit schools to train teachers and audit progress in curriculum work. Districts that desire more intensive assistance can pay to increase the number of these visits, so that RIISA's literacy and math coaches can work with particular teachers who are struggling with their content knowledge, or instructional strategies and assessment techniques.

Although they operate independently, RIISA has been sought out by the NJDOE to work with certain districts in need of improvement that use their School Improvement Grant monies to pay for services. But RIISA also works with numerous districts that have approached them on their own, which imparts a heterogeneous flavor to their networks.

Similar to Wright's concern about the "human element," Lattimer explains that one of the main goals of the Middle School Network is to be a PLC for school leaders and to encourage that work in their schools. But as she says, "Without support, these districts aren't going to stay with it. The value of this whole kind of network concept is to take this feeling of loneliness away from the districts, and to be able to create an affiliate where they will feel comfortable picking up the telephone." Along those lines, according to a RIISA evaluation report one of the

most popular activities is the end-of-year portfolio sharing, in which 31 out of 33 network schools presented visual displays they created representing their "most meaningful experiences" in the middle schools network (Rutgers Institute, 2010). Clearly, school leaders and leadership teams draw strength from seeing the work of their peers and from sharing their own experiences in taking on these professional learning challenges.

Beyond bringing school leaders together offsite, RIISA encourages and trains the schools in use of effective PLCs to manage their school reform efforts, because as Lattimer explains, the schools "were not really working as a unit to have some norms as to how they would make decisions about goals for the year, emphasis of time, materials required, and needed professional knowledge." (Interview, April 26, 2010)

Creating strong leadership is a cornerstone of the work of these two former top-level state education officials. For Librera, the focus is on talking with superintendents because "most issues go through them," but then they work toward a more shared model of power and responsibility. As Librera says, "(James) Spillane's work on distributed leadership emphasizes that such leadership exists in all districts whether or not it has been created. We think the challenge is to intentionally influence the way leadership is distributed because then leadership can expand in desirable ways." RIISA's ability to flexibly conduct group and individualized leadership training as well as content work earned them a 96% positive rating when survey respondents were asked "Would you recommend the Middle Grades Network to other schools?" and has won them several long-term contracts. Another indicator of success is sustained interest from districts that sign on for the high school program, having participated in the middle school network. Yet RIISA's plan is to stay relatively small and create lasting relationships with the districts in which they work.

RIISA has experts in content, process, and leadership, and they have the statewide local expertise to work with all types of districts to meet their specific local needs. It is this kind of broad but specific expertise that makes programs such as the Middle Grades Network, the Math Science Partnership Program, and the Progressive Science Initiative (and there are many others across the state) vital supports for the state's ambitious professional development initiatives.

EIRC Offers Large-Scale Capacity While Remaining Flexible. One of the keys to having a system of professional development where schools define their own specific needs is to build a professional development infrastructure that can readily support school teams as they realize areas where they need work. Some of this work can be done by smaller groups such as RIISA, which offer specific types of coaching as well as more individualized programs.

There is nothing small about the operation of the Education Information and Resource Center (EIRC). In contrast to other professional development providers and RPDCs with limited staff and offerings, the EIRC's stylish office complex in southern New Jersey houses a lending library, a large staff, and the resources to cover a vast collection of courses ranging from trips to study Monarch butterflies in Mexico to workshops on autism to being a licensed center for McREL programs; and service options such as overseeing programs like the New Jersey Lab Schools Project, as well as consulting

to schools and districts on a variety of professional development needs.

At first it seems an odd mix of offerings, but after talking with their administrative leaders one quickly realizes they have figured out a deeply thoughtful and useful plan to meet the needs of schools in New Jersey and beyond.

The EIRC is a holdover from a day when New Jersey had educational improvement centers that were fully funded by the state, but now they are fiscally independent. Their distinction as Local Education Associations (LEAs) meant they were approved to supply professional development to local schools. They are no longer directly tied to the state but are enabled by state statute to operate as public nonprofit organizations with LEA status.

Beyond having a funding advantage, the EIRC clearly keeps its finger on the pulse of educational movements and has the size and capital to react to possibilities that arise. As Executive Director Charles Ivory explains, "Our model is to think forward what the needs are that are emerging that we see in the field and through university research." As a result, over the years they have built an eclectic range of successful popular classes; in reacting to changing times they have learned to alter their model from one-shot workshops only to offering more embedded services. As Professional Development Director Jay Dugan says:

> I came during the tail end of how PD used to be delivered, which was to send two or three people from every district to a big conference room. They'd plan to go back and disseminate the information, which never happened. If they were lucky, they'd get 15 minutes out of faculty meeting summarizing a five-hour day. I saw it evolve to this whole idea of not only going in and training the entire staff in that content area, but we're having those trainers build long-term systemic relationships and coach right in the classrooms as nonthreatening partners. (Interview, April 29, 2010)

Along those lines, Ivory explains that although some traditional professional development providers might feel threatened by the shift to embedded learning, "We see the professional learning communities not as a conflict with what we do but rather as a shift in the culture to better sustain the improvement work that's needed. The beauty of the PLC is that they are the people who know their needs in their school districts. And that's a role that we'd like to think that we can fill in helping them move forward." Furthermore, the EIRC positions itself to help not only in identifying needs but in training that comes from proper data-driven reflection. As Wright, the NJDOE, and many researchers argue, the purpose of PLCs is to examine what a school needs to change and then work to find the resources required to make those changes. Organizations such as the EIRC are necessary for meeting those needs.

With a large number of highly skilled current and former teachers and administrators on their team, the EIRC is able to take on challenges like these that smaller providers would be unable to manage. For instance, Ivory says EIRC staff members act as "interim superintendents and interim school principals out at school districts, and we anticipate that business growing substantially because of what's happening with school budgets." Similarly, Assistant Director

Sandra Loewe adds, "One of the other ways the Department of Education has used us is when there have been problems with charter schools that were failing in New Jersey, the department basically called Jay and said, 'Can you go in there and help in any way?'"

Delivering all the services needed for schools and districts to meet the demands of New Jersey's new professional development policies requires a range of supplemental skills and course offerings that the state education agency does not have the capacity or flexibility to supply on its own. Acting in an intermediary capacity, the EIRC has the foresight and business instinct to stay on top of the types of services demanded by schools striving to meet the state and federal accountability requirements. The EIRC has the capacity and flexibility to step in and do these jobs. Together with other private providers, professional organizations, and university programs, they play a crucial role in the success of New Jersey's professional development initiatives.

Moving from a Compliance Model to a Transformation Model to Help Change Schools. One challenge that the state DOE and professional development organizations face is finding a way to shift the attitude of schools in need of improvement from a compliance mind-set of meeting stated requirements to a transformational approach in which they look at truly changing what they are doing.

As was discussed earlier, New Jersey has a detailed system for schools to meet NCLB requirements. Under the program guidelines, schools are required to go to mandated meetings that are sponsored by the Title I Office. Representatives of the NJDOE's Collaborative Assessment and Planning for Achievement program visit the school and conduct an audit, which includes data analysis and interviews with administrators, staff, and students. The CAPA team then helps schools create a plan of what needs to be done to meet New Jersey's many requirements under the state's monitoring and evaluation system, the Quality Single Accountability Continuum (QSAC). PLCs are not required in that process, but if a school is in need of improvement and is in the CAPA process, the NJDOE has asked school personnel to ensure that when they look at their professional development planning they incorporate what they've put into the CAPA plan into their professional development planning process as well.

The program aims to be both regulative and supportive. One NJDOE official who works with schools in need of improvement says, "CAPA has earned the respect of many school leaders. They have shown that they have the best intentions of schools in mind." Corroborating this idea, a school leader who went through the CAPA process credits the program with helping his staff focus on needed areas of improvement, which they then addressed.

When Elaine Davis joined the state's Office of Leadership Development, she came with the experience of having achieved significant school reform as a principal and as director of the Principals' Center for the Garden State at Montclair State University. Davis and her group wanted to create a system that would help add to the declared CAPA and QSAC goal of creating sustainable change for these schools and districts. On the basis of such research as the Wallace Foundation's report on leadership and its effect on student learning (Leithwood, Seashore-Louis, Anderson, & Wahlstrom, 2004), NSDC/Learning Forward's "Coach-

ing for Results" program, and Michael Fullan's 2006 book *Turnaround Leadership*, Davis and her team developed the concept. Along with university partners, they worked to develop the Turnaround Leadership Professional Learning Community Network (TLPLCN), a group of regional networks for school leaders. Similar to the Rutgers Institute for Improving Student Achievement model, with the help of a small Title II grant the network brings together schools identified by the state as being in need of improvement and others just interested in the program effort to, as Davis says, "break down some of these false barriers of the wealthy, the poor, the not-so-wealthy, and get people talking and trusting each other in a way that allows them to share and grow."

All the organizational partners—Montclair State University in northern New Jersey, the College of New Jersey in the central part of the state, and Rowan University in the south—lead free workshops throughout the year in focus areas chosen in conjunction with advisory panels made up of leaders from their regions. Last year the College of New Jersey network focused on capacity building, Montclair worked with leaders through an NSDC/Learning Forward-developed coaching program, and Rowan began developing a network where the participants brought suggestions for inquiry topics. Whenever possible, university leaders also organized school visits. TLPLCN reports that more than 2,000 people have participated in their sessions, and it has branched out to summer sessions for 800 more state leaders. Funding for the program has ended, however, so although support for the Office of Leadership Support continues, the future of the network is uncertain.

What is certain is that many school staffs need sustained assistance to engage in professional development that truly transforms their practices. The CAPA and QSAC processes push monitoring measures for school improvement in that direction, and groups such as Davis's TLPLCN offer ongoing opportunities for school leaders to continue the work in a meaningful way.

Results Are Difficult to Measure at This Point. It is still difficult to measure outcomes of the NJDOE's professional development planning requirements and supports. The system in its most current form is only a year old, and even with more time it will be difficult to disentangle the effects of various initiatives such as the professional development planning process, the academic standards changes, and the varied efforts of individual schools. That said, Cherry Hill School District, under the direction of Assistant Superintendent Maureen Reusche, has been a lead pilot site for the NJDOE professional development materials since 2008, and it reports improvements in test scores since the shift to a more embedded, collaborative focus. Specifically, Principal Eloisa DeJesus-Woodruff of Richard Stockton Elementary School attests that according to data they have tracked since they began intensive work in that direction, the achievement gap has been erased in her school. Similarly, Pat Wright's H. W. Mountz School and others point to anecdotal evidence of success. Meanwhile, the NJDOE is trying to create instruments to measure outcomes more scientifically, and reports like the one on the PLC lab schools are being published.

Professional development discussions seem to have changed, if for no other reason than that the planning process requires it. The NJDOE's Eileen Aviss-Spedding explains that moving "away from provider-driven opportunities and instead starting to embed

learning teams within schools" has influenced the discussions that are happening in schools. Aviss-Spedding's colleague Victoria Duff says teachers are "saying this is the first time they actually had this type of conversation, and it made a difference in their view of how they're going to approach teaching and learning. So it's a major change."

Challenges

Avoiding Going Through the Motions. One professional development association leader sees his members being supportive of the shift in focus even if "they might not always agree with the red tape that goes along with it"; but as members of his group, they are already people on the forward edge of professional development work.

There is a worry that others, however, will just go through the motions. Some administrators expressed the concern that leaders can treat the new professional standards initiative as a compliance issue, just filling out the forms and doing little to really change their work. Even for those who try to implement changes, there is a danger of people trying to take on PLCs (as one example) without having the training to implement such work properly; research shows that careless adoption of programs has not worked well in the past (Hatch, 1998; Datnow, 2005). PLC coach Jerry Woehr agrees: "We have a certain amount of 'PLC Lite,' I have people who are calling what they're doing PLCs, but what they're really doing are committee meetings."

Time Is Essential. The most common issue facing schools implementing any kind of professional development work in the state is creating time to do the work on a severely limited budget. Making any kind of job-embedded professional development a truly thoughtful process takes time, and time is a tightly guarded resource. As Woehr points out, if a district tries to use time before or after school or teachers' prep periods for collaborative work, "We have found that to bomb. Teachers just resent it."

This issue was echoed by Michael Cohan of the New Jersey Education Association. Cohan, a long-time association leader and school professional development facilitator, was tapped to become the head of the NJEA's professional development wing. The NJEA has been deeply involved in the professional development initiative in New Jersey over the past 12 years, and Cohan in particular is a strong supporter and experienced trainer of PLC work. Cohan and staff have set up workshops and resources to support NJEA members' PLC involvement, and the union has backed the philosophical idea of PLCs as a valuable part of teachers' professional work, but there is no consensus as to how the time to do the required work of PLCs should be found in a restructured school day and school year. The NJEA, however, is committed to using the collective bargaining process to achieve the goals of PLC development and implementation.

The American public has been stubborn in its view of the value of paid release time for professional learning. As Woehr points out, "In most other countries the teachers are in front of kids 60% of the time, and 40% of the time they're doing other work. In the United States teachers, spend 80% of the time with students, and the kicker is that remaining 20% is resented by most of the public."

All of this gets more difficult as budgets get tighter. Funding for the PLC Lab Schools

Project has yet to be reauthorized, and even if the money is allocated by the state a number of schools have told Woehr they can't continue with the project because they don't have the funds to free up the time to do the work at the school level.

Other teacher leaders question whether the time-funding issue really needs to be such a roadblock. PTSB chair and Center for Teaching and Learning Trustee Peggy Stewart claims: "I don't think time is a budget factor. People use that as an escape. There are so many models that can work and be cost-effective."

There is no question, however, that budget struggles are affecting professional development funding in districts across the state. At a meeting of Bob Bartoletti's Professional Development School Network (PDSN), the representatives of the 13 school districts at the meeting made positive comments about the collaborative initiatives of the state and the PDSN's ability to help them with those efforts and other professional development initiatives. But a number of representatives expressed doubt that their board would support renewed funding for membership to the network. Bartoletti put forward the idea of having a moratorium on dues for the year. As a result, the group would still be able to meet and support one another with ideas. Some members, such as Bill Osman of Mercer County's Hamilton Township, saw the opportunity to use this situation as "a chance to share their own districts' collective expertise." Others, though, feared that by cutting back on the investment in network activities some of the benefits of the network might be lost irrevocably. As one group member said of giving up the dues payment and resulting PDSN funding, "Once we give it up, we won't get it back."

Discussion and Conclusion: The Role of State Policy in New Jersey's Professional Development Landscape

A Solid Foundation for Change

It is striking to see how far New Jersey has come in building a system that supports cutting-edge professional development. All of the work started by looking inward to the profession. The formation of the Professional Teaching Standards Board was a joint action of the state, the teachers union, academia, and the community. In coming together to form a unified statewide vision for quality professional development, they tapped their own expertise and also looked to experts in the field in the form of organizations such as NSDC/Learning Forward and Performance Learning Systems, experts such as Reeves and the Dufours, and their own state's exemplary teachers.

Despite the role of such luminaries, the PTSB did not have a large budget for this work; they needed to use what they had strategically. They invested in the experts who could build their capacity and inspire other school leaders, and then they created the tools and information to help schools embark on this work. They also created a system that made the standards for this work clear, and they required schools to document their plans to meet those standards and reflect on what they have done. Balance among the vision, support systems, and regulations is vital. Where other states could have the regulations but no support, or vision without support or regulations, New Jersey has all three, and it should serve them well.

Reaching the schools in all 600 districts statewide is a challenge. Even with a system

in place for oversight, there is a risk that schools and districts could comply by filling out the forms and not really work to transform what they are doing.

Resources are there for these schools, though. Beyond the state-supplied tools and trainings from multiple state agencies, intermediary organizations such as the EIRC and RIISA, numerous university programs, and offerings out of the academic standards unit of the NJDOE are there to help schools build capacity as learning organizations. More threatening is the issue of scarce funds and how this affects schools' ability to access these resources and the state's ability to supply them.

New Jersey has made a bold move toward supporting the kind of professional learning that research says is effective. On its most elemental level, the state's PTSB-influenced professional development policy asks schools to look at what they need to do in order to improve student learning and find ways to deal with those issues in a sustained and collaborative way. Their focus is data-driven but based on principles of high-quality strategies for professional learning supported by research and professional expertise. Resources will be necessary for the work to continue, but the NJDOE has set up a system that has the potential to act as a model for other states.

The *Abbott* Decision and the Rise of Early Childhood Education: A Story of Resources and High-Quality Training

To understand the schooling situation in New Jersey today, it is important to know about what has been called "the most important civil rights case since *Brown v. Board of Education*" ("A Truce in New Jersey's School War," 2002). In 1988, as a result of litigation brought by the Education Law Center in the *Abbott* v. *Burke* case, the New Jersey Supreme Court found that the funding disparity between the rich, high-performing, suburban districts and the poor, low-performing, urban districts was unconstitutional. But the actual change in funding would take some time.

Finally, in 1997 the fifth *Abbott* ruling put the original decision into action. At that time, the court demanded that funding of the poorest districts be equal to that of the wealthiest suburbs (Hirsch & Applewhite-Coney, 2005). With the increased funding came a set of mandates to change schools, among them class-size reduction, Whole School Reform, and perhaps most importantly universal high-quality early childhood education or ECE (MacInnes, 2009). These changes created huge opportunities and responsibilities for what were known as the 31 Abbott districts.

Across the districts, schools were given the challenge of defining and supplying universal high-quality preschool, which would then be funded with Abbott money and would pay the teachers at the same rate as district teachers (Mead, 2009). This was a previously unheard-of level of ECE support, so the pressure was on to do it properly.

With the help of Abbott funds, a whole new school system for three- and four-year-olds was developed from scratch under the supervision of professor Ellen Frede (MacInnes, 2009). Using research-proven methods as guides, the ECE division needed to give the providers training about the standards of high-quality ECE, the work involved in meeting those standards, and ways to train others; the department itself needed to find means to measure the success of the programs.

The cornerstone of the state's current ECE professional development work is the master teacher training program. The yearlong course instructs teachers on how to design and deliver effective curriculum, self-assess their programs using state-developed rubrics, and effectively coach others in their schools. The state also conducts other trainings in curriculum development and evaluation as well as onsite coaching visits, and the schools make use of a range of professional development providers as well.

High-quality ECE requires a delicate balance between play and academics and training to get to that point. Push any one aspect too much, and the other can suffer. To achieve this level of program quality, the ECE teachers across the state use state and district coaches and self-reflection on research-tested rubrics to monitor the progress of their work; additionally, they use teacher team meetings to initiate requests for professional development in areas of identified need.

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Research led by the National Institute for Early Education Research's (NIEER) Ellen Frede, Steve Barnett, and their team working on the Abbott Preschool Program Longitudinal Effects Studies (APPLES) has supported the value of high-quality ECE. The researchers at NIEER have shown both that the Abbott ECE programs have overall reached a high level of instruction on numerous ECE ratings systems but more impressively that time in high-quality preschool has been correlated with significant advantages up through second grade (the top level of the cohort to have received nearly universal high-quality ECE; Frede, Jung, Barnett, & Figueras, 2009). In fact, their findings show that grade retention is cut in half with two years of pre-K and that test scores are significantly higher for students who attend one year (and then more significantly for students who attend two years) of high-quality pre-K.

More than just being an issue of access to ECE, NIEER's findings reveal the difference between high-quality and average educational environments; this is where professional development becomes critical. The New Jersey ECE story shows us that well-trained teachers delivering well-designed and implemented curricula can make a significant and lasting difference in the education of young learners.

The success of the Abbott ECE work has led to significant growth in preschool coverage, for former Abbott districts and beyond, with the development of another tier of funded preschool in New Jersey. As was mentioned earlier in this report, under Governor Corzine the Abbott funding umbrella was widened to include other districts meeting a 40% poverty rate; the state's Early Launch to Learning Initiative (ELLI) has given further access to high-quality preschool in 111 districts. Furthermore, there is a growing effort to build on the pre-K success to look at creating standards and training for schools from pre-K through third grade.

VERMONT

A Story of Participation and Innovation

Case Study Overview: Why Study Vermont?

Vermont has a history of innovative educational work and reform efforts, with roots in both state policy and local initiatives that value teacher and community input. Also fueled by Yankee ingenuity and the state's small size, innovative teaching practices requiring intensive external and embedded professional learning have been a part of Vermont's educational practice for a long time.

Back in 2000, a Brown University Secondary Schools Initiative report on reform efforts in Vermont schools stated that "writing and mathematics portfolios, community-based learning, interdisciplinary teaching, team teaching, project-based learning, computer-based learning, assessment adapting to individual learning styles, and several forms of assessment by exhibition have become permanent features in high schools across the state, with very little policy support from the standards movement" (Clarke et al., p. 5).

The problem is that application of these largely nonmandated innovations has been uneven, and even though Vermont ranks highly on tests such as the NAEP exam there is a sizable gap between the scores of high-income and low-income students.

All this is happening in an economic recession that has led to a 20% drop in Vermont DOE positions, which limits the state's ability to play an integral role in much of the work that needs to be done.

Educational services agencies (ESAs) and other state-supported intermediary organizations such as Teaching All Secondary Students (TASS) work in conjunction with the school districts to fill this gap, supply training and project evaluation, and pool resources for districts and schools to meet their professional development needs and share knowledge.

Furthermore, efforts such as the portfolio movement and the work of organizations such as the Vermont Math Initiative (VMI), with state and university ties, have allowed access to research-based, carefully planned professional development for many teachers across the state.

In various parts of the state, Vermont has seen positive use of coaching both through state-supported programs such as the Formative Assessment Pilot Program (FAPP), which used external coaches to help schools build capacity to take on whole-staff curricular change, and through local utilization of teacher leadership within schools.

As Vermont moves forward, it continues to search for a balance between its constructivist roots and the need for accountability, or what UVM professor Charles Rathbone called "its center" (2000). To achieve this goal, Vermont is trying to bal-

ance the DOE's role in coordinating statewide, coherent professional development on a shoestring budget in an environment that values innovation and state vision but resists regulatory interference.

Evidence of Intensive and Sustained Engagement in Professional Development

Teacher questionnaire data from the 2008 Schools and Staffing Survey (SASS) indicate that Vermont was among the top five states in terms of the percentage of teachers reporting participation in professional development on the content of the subject(s) taught, and in terms of the intensity of professional development (reported as hours of participation). In addition, even though Vermont did not have the highest rate of participation in each type of professional development, it had among the highest percentages of teachers indicating more than 16 hours of professional development work in almost every category, including reading, use of computers, and student discipline. Furthermore, they reported some of the highest satisfaction with the content and reading training they received. This pattern suggests that when Vermont teachers work on professional development, they seem to do it in a time-intensive and useful way.

Vermont's Educational Context

Vermont's public school system serves 92,000 students and has an average student-to-teacher ratio of 11:1, the country's lowest (NCES, 2010). Correspondingly, per-pupil spending at $14,300 is the fifth highest in the country (U.S. Census, 2010). Although the state student population is 94% white (see Table 7), there has been a steady influx of immigrants, many of whom are resettled refugees. As a state with relatively little urban dysfunction, an attractive physical environment, and affordable housing, Vermont is a desirable environment for both visitors and long-time residents. Furthermore, with the highest number of universities per capita in the United States (Colleges Per Capita, 2009), Vermont has a strong reputation as an educational haven and the internal capacity and expertise to support excellence in its PK–12 schools.

Vermont's scores on the NAEP exams are consistently among those of the top few states in the country. In the 2009 reading and mathematics examinations, Vermont placed in the top five states for both fourth and eighth grades overall, and for students eligible for free and reduced-price lunch. However, given Vermont's student demographic (high level of parental education, relatively high socioeconomic status, and little ethnic and linguistic diversity), these scores can be questioned as well. In fact, a Vermont DOE report shows that compared to other states with similar demographics (New Hampshire, Wyoming, the Dakotas), Vermont is not doing significantly better for its students in low-income families (Vermont Department of Education, 2010b). State Education Commissioner Armando Vilaseca remarks on this issue: "It's always great to see Vermont students leading the country, but I am concerned about the lack of progress from two years ago, particularly for our students from low-income families" (Vermont Department of Education, 2010c). The lack of progress indicated by Vilaseca is shown in sizable achievement gaps between high-performing upper-income students and the lower-performing low-income population. Closing the gap without overly focusing on test preparation and threatening high-quality teaching in

TABLE 8. VERMONT'S K–12 PUBLIC SCHOOL STUDENTS: DEMOGRAPHIC CHARACTERISTICS

Student Enrollment	Number of Students (VT)	Percentage of State Total	Number of Students (National)	Percentage of National Total
All students	92,446		51,455,471	
Economically disadvantaged students	26,667	28.8	22,686,136	44.1
Limited-English-proficient students	1,495	1.6	4,539,740	8.8
Children with disabilities (IDEA)	14,096	15.2	6,894,814	13.4
White	86,627	93.7	28,036,802	54.5
Black, non-Hispanic	1,577	1.7	8,539,805	16.6
Hispanic	1,038	1.1	11,094,577	21.6
Asian/Pacific Islander	1,568	1.7	2,475,281	4.8
American Indian/ Alaskan Native	228	0.2	588,938	1.1

Source: EDFacts (2010). SY 2008-09. (http://www2.ed.gov/about/inits/ed/edfacts/state-profiles/vermont.pdf)

one of the highest-performing states—and one that has been historically locally controlled—is a central challenge for the state today.

Vermont's Professional Development Policy Context

In 1997, the Vermont Supreme Court's decision in *Brigham et al* v. *Board of Education* declared that Vermont's schools were unfairly unequal. To address this ruling, Act 60 was passed the same year. Besides equalizing school funding and lowering the tax burden on low-income districts, the act required that all schools administer and report the results of state assessment tests, and develop annual action plans to improve student performance, including professional development for teachers and administrators (*Study of Statewide Education Reform*, 2003).

Correspondingly, the Vermont Statutes' School Quality Standards Title 16 sec. 165 states: "The school shall provide for and the staff shall use needs-based professional development designed to improve the quality of education provided to the students and directly connected to standards for student performance established by the state board and any other educational performance goals established by the school board." Furthermore, this work should be aligned with school action plans and dis-

trict goals as well as school staff evaluation and supervision policies (VTDOE, 2006).

Because there is no built-in mechanism for monitoring the use of Vermont's School Quality Standards, it is unclear to what extent this directive for professional development has been taken up by local districts and schools. Clearly, the stance of this statute illustrates how local self-determination is valued in the state, as well as the tension that the state department of education faces in attempting to maintain quality control in a local-control culture.

Since 1992, the Vermont Standards Board for Professional Educators (VSBPE) has overseen "the training, licensing and professional standards of teachers and administrators" (Vermont Department of Education, 2010d). In 2004, the VSBPE adopted the NSDC/Learning Forward standards for professional development to guide teachers seeking license renewal (Vermont Department of Education, 2004). The adoption of these standards affects only the types of professional development undertaken by individual teachers applying for license renewal; the standards do not hold any regulatory power to guide schools in their design and implementation of school-level professional development programs.

On the other hand, the VSBPE oversees the Local and Regional Standards Boards that work with teachers and administrators to set up their professional development plans for license renewal. To advance from a Level I license to a Level II, or to renew a seven-year Level II license, teachers must write up a data-driven individual professional growth plan to meet the knowledge and performance standards for their endorsements and the requirements of the Five Standards for Vermont Educators (learning, professional knowledge, colleagueship, advocacy, accountability). They do so through a combination of university coursework, school-based professional development, independent projects, and other professional learning opportunities. Nine units (or 15 hours per credit unit) are required within a seven-year period. The system combines flexibility, which accommodates individual teachers' needs and interests, and limited standardization, requiring that teachers do work in certain areas to ensure a balance of activities.

At the end of the seven-year cycle, teachers are required to present a portfolio containing evidence of their work during this period, reflections on that work and their teaching, and a new Individual Professional Development Plan. These portfolios are then presented for approval to local standards boards made up of district colleagues and community members (Vermont Department of Education, 2010d).

Mentoring is also required, though not monitored. The State Board of Education's School Quality Standards section 2120.4 (c) states that "mentoring shall be a structured component of each school's needs-based professional development system" (Vermont Department of Education, 2006) and the system for mentoring is outlined in guidelines developed by the VSBPE (Vermont Department of Education, 2005). To assist in this effort, the Vermont National Education Association (VNEA) has recently been working with the New Teacher Center to set up a mentoring program in the state. Similarly, the ESAs in different regions have introduced training on Charlotte Danielson's mentoring model, and the Cognitive Coaching model, to support mentoring work as well.

One factor that affects the state's ability to offer oversight of professional development is budget cuts, which have led to a 20% reduction in state DOE staffing. The central point for professional development in the VTDOE is embodied in one staff person, the coordinator of professional development. Other operating units (Standards and Assessment, Integrated Support for Learning, and the areas administering school support) deliver professional development as well, with DOE officials within those departments taking on the role of professional development coordination in addition to their other roles in the department. With the support of the commissioner, the professional development coordinator, Carol Duley, is working to interact more closely with these units of the DOE.

Beyond staffing cuts, there are limited direct state funds for a handful of professional development programs. Locally, school districts use a portion of their own local budgets to make professional development investments, but there is no minimum requirement as to the level of professional development investment, other than for schools identified as being in need of improvement.

In the area of Title I and Title IIA funding, the state has greater control over schools' professional development decisions. Title I and IIA money goes to schools (with 4% of Title I funds off the top going to School Improvement Funds for schools not meeting Adequate Yearly Progress) except for a small amount kept for administration. Professional development is not a required part of Title I use for the general population of schools, but under NCLB legislation for all states schools identified as being in need of improvement must use 10% of their Title I funds for professional development. In addition, the state Title I office monitors whether schools have selected research-based professional development programs and whether they have implementation plans for those programs that are likely to be effective.

Similarly, Title IIA funds are allocated to supervisory unions through a federal formula with an approved Consolidated Federal Program (CFP) application. Although schools can use their state CFP applications to fund class size reduction, many use some or all of their funds for professional development on issues such as school discipline, mentoring, and curriculum reform. The department does not lead schools to adopt specific programs, but the state director of Title II does offer guidance to applicants through workshops and meetings with teacher leaders, referring to NSDC/Learning Forward standards and other tools to help schools design actions plans that are aligned with the identified needs and that use the funds on approaches to school improvement that are grounded in solid research and practice. Furthermore, once distributed, both Title I and Title IIA funds are monitored to see how they are being used.

According to Duley, the scrutiny the state applies to Title IIA fund distribution has helped improve professional development planning across the state. She says, "I think that we really changed a lot of the understanding in schools and in districts about quality professional development. That was a good lever, and I think we did make some real inroads there."

With the support of federal and state funds, numerous national programs such as Reading Recovery, Positive Behavioral Support (PBS), and Response to Intervention (RtI) as well as local efforts such as the Vermont

Reads Initiative, Vermont Math Initiative, and Vermont Professional Development Network, school-embedded teacher leadership programs have been and are currently sustained.

Federal accountability rules (NCLB) have also led to mandates from the VTDOE regarding the types of professional development to be undertaken in schools failing to meet AYP. These schools are obligated by the Commissioner's Required Actions to set up collaborative structures to look at the work necessary to improve their schools. In cases where schools are in multiple years of corrective action, schoolwide teacher learning communities must be set up and school coaches brought in. These programs are discussed in more detail later in the report.

Less directly, teachers are encouraged to focus their professional development efforts on the state assessments. Although Vermont already had its own locally developed state examination, called the New Standards Reference Exam, Vermont joined the New England Compact in 2004, which brought them together with New Hampshire and Rhode Island to meet its NCLB assessment requirements more efficiently and to pool their resources to make their statewide assessment as strong as possible. Together they created a joint state standardized test called the New England Common Assessment Program (NECAP), with Maine joining the group in 2009.

By most accounts, it is a high-quality exam, closely matching what some regard as good teaching practice. As one respected state teacher says, "NECAP is a test worth teaching to." In an effort to help schools improve their practice (while also improving their test scores), Marty Gephart of the DOE's Vermont Professional Development Network (VPDN) has overseen trainings in instructional practices for teacher leaders in literacy, math, and science, who in turn train hundreds of educators throughout the state. Dating back to the intense professional development that went into the state portfolio work, Gephart says, "The network evolved into a vehicle to communicate about the new grade expectations [which replaced the augmented standards]. It involves the assessment, but it's not about test prep."

Vermont's educational regulations and guidelines outline professional development requirements that should be followed in schools throughout the state, but they carry few consequences because of philosophical and financial reasons. The history behind those decisions and the advantages and consequences of them will be discussed more fully in the next sections.

Vermont's Professional Development Landscape

A History of Vermont's Professional Development Vision. To understand the workings of professional development in Vermont, it is important to know about the origins of the state's educational vision and the history of school reform in the state. In 1969, after consulting with a range of educators and community members, the VTDOE published the first seminal state document on education, called the Vermont Design for Education. This 25-page document put forward 17 principles that focus on ideas such as emphasizing learning over teaching, valuing student individuality and interest (in contrast to standardized tests), and fostering multidisciplinary education and group learning. To meet these learning principles, the document encouraged

teachers and schools to increase collaborative efforts, improve teacher professional development, and offer mentoring, as well as redesign the preservice teacher education curriculum (*Vermont Design for Education*, 1969). Some schools and districts at that time took up the call of the Vermont Design and set up their own local "design committees" to discuss how they would interpret the suggestions of the document in creating the conditions and professional development needed to effectively reform their school systems. For many educators and community members, it was an exciting time in Vermont education.

Around that period, the state also had a number of federal Education Professions Development Act (1967) grants funding experiments and training in open classroom and other progressive education ideas. Importantly, these ideas were put forward as a model and a statement of a new state philosophy of education. For University of Vermont professor Charles Rathbone, who was a young teacher at the time, and others like him, the document and the grant-funded programs were the inspiration to come to Vermont to be a part of this bold new experiment in education. The example of the Vermont Design shows the role of the state in setting a vision, which requires professional development to achieve (but does not have policy to mandate) that work. This balance of state control and allowing schools to follow their own paths is one that Vermont has tried to straddle with varying degrees of success over the years.

With more than 270 districts, and despite having such a small population, it is not surprising that there is a history of local control in Vermont. In 1992, the State Board of Education went so far as to pass a ruling that "any rule or law should advance student performance, but not in such a rigid manner as to foreclose alternate means of achieving goals." The standards go further to say, "The law or regulation should not prescribe *how* to educate students but *how well* they should be educated. The State Board or Department should intervene only when a school fails to do well by its students" (State of Vermont Board of Education, January 21, 1992, pp. 3–4, cited in Lusi, 1997, p. 149). These guidelines clearly set boundaries to protect local control, though around the same time, under the direction of strong state leadership (Richard Mills and then Mark Hull and Marge Petit), the state was able to support establishment of innovative programs such as the Vermont Institute for Science, Math, and Technology; the portfolio assessment system; and the emerging standards movement.

The Portfolio Process as a Symbol of Vermont Education

Vermont's experiment with portfolio-based assessment of students as part of its statewide assessment program exemplifies the balance the state was trying to maintain (Bond, Friedman, & van der Ploeg, 1994). When Richard Mills became commissioner of education, he "established a participatory process involving hundreds of people to discuss" what the state's education goals should be (Lusi, 1997, p. 85). These goals, which involved student learning and citizenship, school structures, teacher quality, and community partnerships, would become the roots of the Green Mountain Challenge and a series of other vision-defining documents for Vermont education.

A simultaneous process involved creating a statewide assessment system. As with the goal-setting process, public hearings

were held. Mills recalls, "We finally got the message when one teacher said it makes no sense to teach writing though a process approach and then test the result with multiple guess. We stopped and rethought the whole thing." In so doing, the idea of using portfolios, which had been part of state classroom practice for years, was explored (Vermont Department of Education, Appendix 1, 1991a, cited in Lusi, 1997, p. 85).

Throughout the process of setting up a statewide system for using portfolios and scoring them, the VTDOE asked for deep involvement from teachers and teacher leaders who helped design the system, as well as from all teachers who worked with their students to prepare the portfolios, scored them, and engaged in scoring discussions with other teachers. It is important to note that the scoring was not used as a basis for accountability for students (Bond et al., 1994). The state did hope, however, to use scores to compare schools. These two parts of the initiative would prove difficult to reconcile.

Striking a Balance: A Reliable Assessment vs. a Formative Tool for Teaching. The sometimes conflicting purposes of instructional value, validity, and score reliability became a source of differing interpretations about the program. A study by Koretz and the RAND Corporation conducted in the second year of the effort to use portfolios as a state assessment (the 1992–93 school year) found that with the help of state trainings math scoring reliability was increasing, but the scoring of writing portfolios remained problematic (1994). Petit, who was a teacher leader in the portfolio movement and then deputy commissioner of education from 1996 to 2000, says that the Koretz study distracted people from the more important purpose of the work: "From a policy perspective, Koretz's study forever made Vermont's focus more on reliability than validity. That's the truth of the matter, which is too bad. Teachers felt that scoring got re-interpreted, that scoring was for the state and not for their students. And that was never the sole intent of the portfolio." (Interview, April 12, 2010)

The RAND reports found that although the portfolios were not consistently reliable as an assessment instrument, they proved to be valuable as a professional development activity for teachers and as a vehicle for student learning. Despite complaints about the burden of increased administrative responsibilities associated with maintaining the portfolios, especially for teachers in the grades where they were required, teachers reported positive changes in practice, such as assigning more writing and having students using higher-order thinking in both English and math (Koretz, 1994). Otho Thompson, a former principal, says the portfolio process "required a lot of time and training, but so many teachers said it was the best staff development training they ever got. I remember one third grade teacher coming out of a portfolio training saying, 'I just learned more about teaching math in the last three hours than I had in all of college and teacher training combined.'"

Using portfolios as a state testing measure forced schools—many of which would have opted out—to adopt a thoughtful teaching technique and professional development activity. Even though the system had its technical challenges, the process convened educators statewide to think about quality practice. Teacher leaders attended scoring camps to calibrate their scoring according to benchmark pieces, and those teachers then became leaders of staff development

for similar discussions in their schools. The portfolio system as a statewide assessment died out because of issues around technical quality (reliability), cost, and sustainability; however, portfolios as a school-level instructional and assessment tool are still used to give feedback to students in conjunction with standards-based commentary, and according to Petit they are still "alive and well in most districts in math." According to others, they appear in many districts in English as well, though less systematically.

Despite its challenges, the portfolio experiment represents much of what has made Vermont stand out in the professional development history of our country. Having the gumption and the broad-based support to take on such an ambitious goal, Vermont modeled a statewide initiative based on a local practice that exemplified a high-quality approach to professional development that is job-embedded and focused on both teacher and student learning.

The Standards Movement Brings Educators Together to Define Good Teaching

As Vermont moved into the standards era of the middle to late 1990s, the state benefited from the distributed leadership of state leaders, university partners, and teacher practitioners to think about how to best develop and implement a standards-based system. Building on the simpler *Vermont Design for Education* and the Common Core that followed it, *Vermont's Framework of Standards and Learning* (1996) organized a broader range of standards into two specific categories: "vital results," which were the overall skills students should gain from being in school; and "fields of knowledge," which were the specifics of each discipline. The hope was that this division would allow both depth within disciplines and standardization across disciplines.

As with the portfolio work, the high level of buy-in for the standards work in Vermont can be attributed in part to teachers' involvement in the process. Vermont held regional statewide conferences with teacher teams and then organized regional conferences for educators to learn more about the standards and think about how best to implement them. As Thompson recalls, "Huge numbers of teachers were involved in creating the standards. The reason it didn't feel like it was state-dominated was that everyone was on some committee. There was a sense of empowerment and responsibility. We were doing these things because we wanted to be involved." Similar to the portfolio process, the standards movement led educators in schools to meet to discuss curricula, prioritize standards within grade levels, and lay out vertical plans for the coverage of concepts as well.

High Schools on the Move Looks to the Future of Education

In August 2002, the *High Schools on the Move* report was released. The task force assembled to produce this report was made up of K–12 educators, school leaders, VTDOE administrators, university professors, and members of the business community. Harkening back to the *Vermont Design for Education*, the report suggests that schools refocus their current work on 12 principles, which include high standards as part of aligned curricula in schools with instructional leaders; flexible structures and pathways, including real-life experiences; personalized learning to engage learners;

and increased community connections. The study's final report elaborates on all the principles with examples and ways to put them into action in schools. Those proposed actions are followed by lists of Vermont schools that were already practicing some of these strategies, as with graduation capstone activities, personal learning plans, and school-community partnerships. Thoughtful professional development for teachers and students is clearly necessary to reach these ambitious learning goals. The study outlines three areas of learning in its "Principles":

Principle 7: Instructional Leadership—Adults in the school use research-based practices and effective administrative and instructional strategies to support increased student performance.

Principle 8: Alignment—Supported by research-based professional development, high schools align their curricula, instruction, and assessment with Vermont's School Quality Standards.

Principle 9: Shared Purpose—Every high school adopts and publicizes a compelling vision and mission that uses a results-oriented approach to promote continuous improvement [*High Schools on the Move*, 2002].

More important, the principles themselves necessitate a change in the content and focus of embedded and external professional development needed for teachers to meet the expectations embodied in these principles.

Unfortunately, even though some professional development was implemented with a handful of schools, the effort to make a real professional development initiative out of the High Schools on the Move project got sidetracked (Hamann, 2005). According to Thompson, "Vermont was leading the nation in assessment, but the next thing [NCLB] came along and dominated, and the state couldn't put anything into the other initiatives." Some of the professional development programs, especially in the content areas, survived, but the next few years would be dominated by figuring out how to balance the requirements of NCLB with the realities of Vermont education.

The Vision of the Current Commissioner: Transformation and Equity. Armando Vilaseca has spent his entire 30-year career as an educator in Vermont. He was a classroom teacher, a principal,[20] and a district superintendent before becoming Vermont's commissioner of education. The timing of his arrival in late 2008 could not have been tougher, with the recession in full force and much of his time on the job spent managing the effects of a drastically reduced budget, which has cut 20% of his staff. Vilaseca is pushing forward, however, trying to juggle the issues of NCLB compliance and charting Vermont's own vision for its educational future.

Vilaseca is a veteran of the High Schools on the Move initiative; Vermont's current push for transformation schools seems to be a return to much of that thinking with a 21st-century-skills flavor to it, focusing on skills rather than units, community experience and partnerships, and technical training not just for students in tech centers but for all students. As with the *High Schools on the Move* report and the *Vermont De-*

[20] *During his time as a high school principal in the mid-1990s, Vilaseca was one of the leaders of a highly successful partnership between University of Vermont and multiple school districts that fostered embedded professional development training and support for university credit.*

sign before it, these changes would require broadening into new areas of professional development and preservice training, which Vilaseca sees as essential to such work. Although in true Vermont form Vilaseca offers assurance that "there will be enough flexibility for people to really interpret it the way it best meets their needs," he also adds (perhaps remembering the stalled High Schools on the Move efforts) "but the option of reforming or not reforming to me is not an option anymore."

Carol Duley, the Vermont DOE coordinator of professional development, sees the options and budget limitations of the current system as creating a problematic inequity in distribution and utilization of professional development: "There are currently some very good things going on around the state, but the initiatives and programs are not big enough to be able to provide for everyone if everyone should want to participate. Then on the other hand, we also have some folks that are not participating because they either don't see the need or perhaps are dominated by other priorities."

Even with the push for greater coherence, Vilaseca supports Education Secretary Arne Duncan's philosophy of "tight ends, loose means." He knows that a "one-size-fits-all approach [leads to] a lot of pushback from schools" because every school's needs differ. Nonetheless, Vilaseca supports creation of a statewide professional development plan, saying that without one it is "almost impossible for us as a state to move in one direction."

Duley agrees and has advocated for creation of a comprehensive professional development framework in Vermont, which would bring the DOE units together and give the schools more support and direction for their work. This framework could involve creating supports such as professional development planning guides, ways to link professional development with student achievement, and tools to evaluate professional development and its impact, as well as link funding to adherence to professional development guidelines. All this would make for a more coherent system of professional development that would require schools to be more focused and accountable for their programs, hopefully leading to improved student learning. Although recent budget cutbacks stalled the effort, Duley has been given clearance to develop a framework for the work with schools receiving Tier I and II School Improvement Grant (SIG) funds, which could be the basis for a larger, statewide initiative.

The Role of Educational Services Agencies in State Professional Development. Some Vermont schools successfully implement their own professional development using in-house expertise and sending select groups of teachers to workshops. Other schools face budget problems and limited access to expertise, making it difficult to prioritize, plan, and implement effective professional development work.

Vermont's ESAs organize professional development opportunities to serve the needs and pool the resources of the constituents of their areas. There are six regional agencies, which initially supported themselves, but in recent years they have been partially supported by the state through Title IIA funds. In exchange for this support, the ESAs agree to work more closely to share practices and resources with each other and with the state to support state initiatives, making them true intermediary organizations.

Still, the ESAs are largely independent, with varied offerings and business plans. Some of the ESAs are university-affiliated and some are independent, nonprofit organizations. All seem committed to responding to their local needs and (at least in theory) trying to promote their courses and workshops to build capacity rather than being one-shot events for individual teachers; but their capacity to foster sustained change is varied and limited by tight budgets. Though all of the directors are experienced school leaders with close ties to educators in their areas, the ESAs generally function with a small staff made up of a director and one or two assistants. Thus the directors primarily serve as brokers to help local districts and individual schools make connections to quality professional development providers and programs.

Many providers and school leaders express the obvious concern that there should be continued work on professional development initiatives to allow them to stick. David Leo-Nyquist, an ESA leader and coach for collaborative work across the state, echoes this concern: "If there's some conversation happening about professional development, and that conversation within a school is not inextricably linked to teacher leadership, then it's wrong-headed. [Some of the professional development programs out there] are capacity-building, but a lot of them aren't. Meaning, it's mostly graduate course work, and it's mostly external people coming in, and it's mostly workshop-based." The ESAs, for their part, are generally striving to provide professional development that is sustained and job-embedded, attentive to building teacher leadership and overall local capacity.

Bob Stanton, of the Lamoile Area Professional Development Association (LAPDA), offers a good example of the strength of the ESA program. He is a former special education teacher, classroom teacher, special education director, university lecturer, principal, and assistant superintendent in his region, and as a result he understands the diverse issues of his districts. He speaks frankly about the need to build the capacity of the districts in his area (10 out of 13 subscribe to the services of LAPDA), and he uses their input to plan programs. He encourages teams (not individuals) to attend professional development offerings, and he designs programs that mesh with the realities that attendees will face in the classroom and that fit with the efforts of other programs in the state. He likes to say that he serves "two masters": the districts he works with and the Vermont Department of Education, both of which support his efforts.

As a leader from the school to the supervisory level, Stanton has designed innovative but traditional offerings, such as a successful principals' leadership program that gives principals a toolkit to deal with the various challenges they face. But he is also starting to do more ongoing embedded projects. This coming year, he will be working with a number of districts on "long-term sustainable implementation plans with a focus on differentiation of instruction." It is this flexibility, experience, and ability to work with the needs of the local schools that can make the ESAs an effective intermediary organization.

Defining the Issues for Schools Identified as Needing Improvement. The state's biggest professional development challenge is working with districts and schools in need of improvement. Commissioner Vilaseca favors a comprehensive systems approach for schools in need of improvement but admits that right now the

state department does not have the capacity to do the work itself.

In the current system, as mentioned earlier, schools identified as not making Adequate Yearly Progress face a number of required actions involving professional development. Schools in need of improvement must convene support teams to guide and monitor the school's improvement work, as well as align curriculum according to DOE guidelines, and they must also convene teams to monitor data and identify needs. At the end of the year, the support team, with data from the grade level or department teams, writes a report outlining next steps, which include these professional development issues:

1. What steps will be taken to strengthen the team's ability to collaborate around improved student supports both within and out of the school day?

2. What steps will be taken to build our professional knowledge and improve instruction for all students?

3. What steps will be taken to strengthen the use of common assessments? [Vermont Department of Education, 2010a)

Schools that fail to make adequate improvement and enter corrective action also need to implement one of these corrective actions:

- Appoint an outside expert to advise the school on its progress toward making adequate yearly progress based on its school plan (External School Improvement Implementation Coach)

- Institute and fully implement new curriculum, including providing appropriate professional development for all relevant staff, that is based on scientifically based research and offers substantial promise of improving educational achievement for low-achieving students and enabling the school to make adequate yearly progress

- Extend the school year or the school day for the school

- Significantly decrease management authority at the school level

- Restructure internal organizational structure of the school and at year three of corrective action schools . . . create Teacher Learning Communities with a trained facilitator [Vermont Department of Education, 2010a]

Almost all of these actions require intensive professional development. The state has a small, dedicated team to take on these efforts, and they have had some successes, but because of budget restrictions they are consistently understaffed. A good example of the situation is the work of Tina Muncy, a former principal who ran a PLC for principals in identified schools; it was so popular that leaders of nonidentified schools were signing up to join, but her program was cut this past year. Beyond fiscal challenges, by virtue of their role state representatives are sometimes seen as adversarial rather than helpful. Either way, the workload is too great for the state to do on its own.

One of the biggest challenges for the state is helping schools in need of improvement

assess their needs. One ESA director notes the ability of ESAs to serve as nonjudgmental advisors: "We don't really want to be labeled as the folks who come in and tell you how much you've screwed up." He has seen that as an outsider to the system his group is able to give pointed yet supportive critiques to schools without their being seen as "indictments." Conducting these needed audits as an outsider is a role that ESA Director Darlene Worth sees as a perfect fit for ESAs: "I've talked with DOE folks to push for a common audit template across the state. All of the ESAs could be carrying out school audits with teams of educators from our regions."

Worth further describes the need for a more comprehensive approach: "In the past we went in to do studies and just looked at math and reading, but now we are looking across the school at what systems are or are not in place, which will help them the most, we feel."

Starting this fall (2010), the ESAs began the work with four school audit trainings for educators who will serve as school audit team members in the various ESA regions statewide; they are discussing a statewide ESA network modeled on their school audit work.

Providing a Systems Approach for Sustainable Change. Val Gardner, a long-time principal and a consultant for the Vermont Higher Education Collaborative (VT-HEC) and their TASS program, which offers systemic coaching for schools working to improve, says many of the problems with audits stem from not giving the school leaders and staff members the chance to think about the work they are doing:

> Ideally, I work with the school to help them really look at their data, really look at the depth of their understanding that they need and what are the issues that need to be addressed, and then have that coaching continue. That way of looking at the situation, as parts of a system that need to be examined and connected, is very different than having an auditor come in to make a disparate list of suggested tasks that need to be completed." (Interview, 5/7/10)

TASS has the capacity to assemble teams of consultants and coaches to help schools assess their needs and secure the range of services needed for far-reaching change. With expertise in special education, various content areas, school leadership, collaboration, and curriculum reform, they are able to give comprehensive school reform support. In a given school over a period of many months, their expert on differentiated instruction may lead teams in curricular change, while one of their former principals might coach the administrative team through creating a restructuring plan, and the expert on Critical Friends training may be working with the staff to improve its ability to collaborate effectively. Although this range of resources comes at a cost to districts (generally through Title I or SIG funds), the districts benefit from a coherent process that centers them in the work they are doing, and a more comprehensive strategy that has greater potential for systemic change.

Questions About Intermediary Organizations. The VTDOE needs the ESAs and other groups to provide direct services to schools and districts, but there remain a number of questions regarding the state agency's control over the ESA. Should there be more coherence between them? Should they adopt a more comprehensive

model, like that of the TASS group? Or should a group such as TASS become a center for school improvement, with different ESAs taking on other areas of professional development expertise?

The challenge for all of these groups is that without a clear direction from the state education agency it is very hard for them to grow in scale. They are caught in a catch-22 where the state needs their expertise but doesn't have the funds to guarantee the business for the intermediary groups. The organizations are ready to scale up, but they do not have adequate resources to prepare and recruit the needed staff without guaranteed contracts.

Coaching and Personal Relationships in Identified and Nonidentified Schools. True to the participatory nature of Vermont's education history, educators interviewed for this study consistently cited the strengths of having a nonevaluative coach provide feedback on the work that individuals and schools were doing.

The trained coaches of Vermont's chapter of the School Reform Initiative (SRI) have worked closely with schools to improve their ability to work together and build capacity to engage in lasting reform. In some cases, this work is tied to the state-mandated "required actions," which ask schools to work with trained coaches to facilitate their reform work; in other cases schools contract with groups such as SRI on their own.

To do this work, the SRI leaders use the protocols from Critical Friends Group (CFG) training, a program that helps teachers strengthen their collaborative skills, learn how to give and receive feedback on their work, and build the leadership capacity of teacher leaders, who can then support future and varied reform efforts.

At a presentation to the ESA directors, a group of leaders of identified and nonindentified schools discussed the benefits of having a coach who could be a sounding board, make suggestions, and talk through ideas without serving as an evaluator. A panel of school leaders at this presentation shared some of their experiences of working with an SRI coach. One school leader remarked, "I have led a number of different schools through reform efforts, and this is the most effective system I have worked with by far." School leaders explained how the coach-supported changes in the discussion patterns and the leadership structure led to a "change in the culture of our school," which made the difference in the results of the reform work.

Along those same lines, over the previous three years Vermont made a specific effort to supply coaches to some identified schools as part of their Formative Assessment Pilot Program (FAPP), which used a system called Keeping Learning on Track, developed by Dylan Wiliam and others at ETS. The program, which creates a highly structured system for developing and sustaining formative assessment work in schools, is generally run by the school leaders themselves through teacher learning communities. Although the program is tightly scripted, the Vermont DOE decided they wanted to have an extra layer of outside coaches to assist with implementation, and members of the Vermont SRI chapter and other trainers were called in to do the coaching. Similar comments about the program and the added resource of the external coach "changing the culture" and changing "the way we thought about teaching" came up

in discussions about that program. The VT-DOE is no longer assigning coaches for the program, but they are still offering trainings for it and the state agency does still require schools in need of corrective action to work with a trained coach.

As the SRI coaches argue, schools must invest the time and resources to set up a distributed leadership system for such work to be sustainable.

Coaching Within a School to Help Push Reform. One teacher told of a similar situation in his efforts as a classroom teacher to help bring reform to a Northern Vermont high school. His attempt to implement differentiated instruction is documented in Carol Tomlinson's *Differentiated School* (Tomlinson, Brimijoin, & Narvaez, 2008) and a 2005 *Journal of Staff Development* article (Pardini, 2005). In a recent interview, he said the key was his school principal's funding of a 40% position for him as a teacher coach "rather than riding off the fumes of an excited person who's thinking, 'Wow. I'm getting recognized for something and it feels good, so I'm gonna work like crazy.'" In this role, he had the time and administrative support to lead teachers and teacher teams. On the most basic level, he was freed to respond to teachers' needs, answer emails, and give feedback on lesson ideas. From there he began to build communities for teachers to leverage their skills together: forming work groups and actively looking to build trust over time between the previously isolated colleagues.

The power of the combined capacity of staff is reflected in his story of a moment in his Critical Friends training in which one of the facilitators urged participants to have faith that "the answer is in the room." This idea that schools have the expertise to make change and create the systems to require such expertise from their staff is central to many successful schools in Vermont and across the country. A crucial understanding here, though, is that the collaboration is not just an open forum, but structured and focused on issues around student performance and instructional reform.

Two other teachers discussed taking on a challenge of this sort at a similar school, which had also shown relatively strong academic achievement, but the administration and staff wanted to do a better job of reaching all students. Keeping the effort outside of the evaluation cycle was pivotal. One of the teacher/coaches mentioned that in their research they found that programs often failed when "it became a punishment to work with the coach." Her partner further explained that "the nonevaluative part is huge," stressing that their work is "about the support." In addition, teachers wanted to know that they wouldn't be put on the spot just because they agreed to look into this kind of work. Opening themselves up to the kind of reflection and change needed for this work was hard enough for the teachers.

Principals have also expressed the need for feedback in a safe environment. Bob Stanton of the LAPDA mentioned how one principal in his leadership program appreciated that there were no "teachers in the room to be embarrassed in front of, so [he] could admit as a principal [he] didn't know anything about reading." Another ESA director agrees, saying that with more opportunity for connection leaders of struggling schools would see that they are not alone, exposing them to alternate approaches to dealing with their challenges.

These coaching relationships are not unique to Vermont, and they are a small sample of

the relationships that do exist in the state. But they do illustrate the power of such work when it is done well and thoughtfully. Building an effective coaching environment, whether it is for schools facing required action or making voluntary reforms, takes school leaders who are willing to share their leadership and committed teacher leaders who are ready either to mobilize their peers or to be trained to do such work. Furthermore, it takes an understanding of the vital importance of relationships to school reform.

Influence of Innovative Educational Programs and Partnerships on State Professional Development. Vermont's professional development landscape is dotted with quality homegrown educational programs, arising from a combination of university partnerships, federal grants, and symbiotic relationships with state initiatives. A good example of this work is the Vermont Math Initiative (VMI).

In 1999, the deputy commissioner of education and a longtime math teacher leader, Marge Petit, and Kenneth Gross, of the University of Vermont Mathematics Department, used state grant money to help launch a three-year master's program that sought to increase local capacity by providing comprehensive training in mathematics for K–8 teachers.

Petit, Gross, and other program founders wanted to give teachers the content knowledge and related pedagogical content knowledge to confidently take on the intricacies of teaching math. In addition, they wanted graduates to be able to leverage their work by becoming mathematics curriculum and instruction leaders in their districts and in statewide initiatives. For example, graduates of VMI played a key role in developing another Vermont-created initiative with national stature, the Vermont Mathematics Partnership's Ongoing Assessment Project (OGAP, 2003 to present), which has fed directly back into the VMI program, making available additional training and support in understanding how students learn specific concepts and as a result how teachers can use formative assessment to inform instruction.

Interestingly, the target population for VMI includes teachers who may not have advanced skill in math. Judi Laird, executive director of VMI, says, "A typical university program in mathematics might have admissions requirements that might exclude the exact teachers that we most need in VMI. I want every teacher in Vermont to come into VMI." Once in, the teachers work closely, building their knowledge base and creating lasting friendships and networking ties.

Two conditions specific to Vermont enhance the success of a program such as VMI. One is the state's history of creative math reform and putting teachers in positions of leadership. Part of this focus stemmed from a belief in the potential for educational innovation and reform leadership within the Vermont professional community. In her early days with VMI, Laird recalls various school district leaders who realized the lack of sustained results from isolated workshops and said, "We're going create our own expertise."

A second important condition is the size of the state. Even though VMI serves only a small number of teachers in each three-year cohort, cumulatively they have built a group of 207 graduates (with 100 more currently enrolled) who now are leaders in every county and nearly every district in the state, spurring independent but commonly

articulated efforts to raise the quality of math instruction throughout the state.

Having created this base of influence, VMI started a shorter, six-unit program taught regionally, with the hope of exposing even more teachers to elements of the training in formative assessment, lesson study, and conceptual math knowledge found in the longer program.

VMI's work is the result of a partnership forged among the program, the schools, the University of Vermont, and the state. Laird explains that although VMI is not run by the state, "we're not independent. We get a Math Science Partnership grant, which comes through the state department. We actually sit around the table with folks at the DOE and help them think about mathematics in Vermont." Correspondingly, Petit credits the state for not letting its policies get "in the way of teachers being good teachers."

The success of VMI is documented by research studies, which show a statistical difference in state math scores between cohorts of students who have had VMI trained teachers and those who have not (Myers & Harris, 2008). Other school systems around the country have set up VMI satellite training programs.

By no means is VMI the only organization of its kind in the state. In fact, the same original VTDOE push that initiated VMI produced two other exemplary programs, the Vermont Reads Initiative and the Vermont Science Initiative, which have done similarly thoughtful research-based work. There are many other successful university partnerships, such as the Vermont Middle Grades Professional Development Collaborative and individual initiatives, which speak to the power small movements can have in delivering significant effects.

Discussion and Conclusion: The Role of State Policy in Vermont's Professional Development Landscape

Balancing Accountability and Independence

Finding the balance that leaders such as Mills, Hull, and Petit had in the 1990s is tough in a world where mandates from the federal government overwhelm the budget landscape. The reality is that Vermont, like other states, does depend on federal NCLB-connected funds such as Title I and II dollars, which force districts to comply with NCLB mandates. Some of the programs bring needed attention to subgroups whose progress has been ignored, but the research of Woodside-Jiron and Gehsmann (2009) reveals problems with the prescriptive nature of some NCLB requirements. For instance, they found that successful, constructivist reading programs that were scrapped in favor of scripted basal requirements came at a serious cost to literacy rates.

On the other hand, many professional development providers and VTDOE administrators express the concern that too much independence allowed schools to avoid changing unproductive ways. One teacher and education consultant argues, "I think we would be better off with a little less of that autonomy and a little more 'Let's get together with a cohesive model.'" Bob Stanton agrees: "The best thing they can do is promote, maybe even insist on more coherent planning and coordination. I think it's a very reasonable expectation for them to say to me, 'We, the department, will be having a meeting with a Tier 1 school. As an

ESA director, you need to be there.'" This mandated connection between struggling schools and intermediaries would force the schools to evaluate their situation and allow the state to make use of the expertise of groups such as the ESAs, TASS, or other organizations.

Schools need to find ways to meet accountability goals while supporting the kinds of teaching and learning that are best for kids, and the state must match its talk of systems thinking with an improvement policy that promotes real change and supplies the expertise to support that work. Vilaseca and Duley and others in the DOE seem to agree with many professional development organizations and school leaders about what they would like to see happen, but with such a limited budget, the question is, Can the state get beyond compliance measures?

Looking to the Future by Building on the Lessons of Successful Schools

The turnaround of Milton High School is an example of using the best of Vermont's strengths. Eleven years ago, the leadership team turned to University of Vermont for guidance when their school was identified as being in need of improvement. As part of their action plan, they arranged with a state liaison and with UVM to hold classes for all of their teachers onsite at Milton High School. With the help of George Salembier, a professor who focused on reading, and Karen Kurzman, a writing instructor from the state department of education, they reconsidered the curriculum in terms of reading and writing across the curriculum and began rethinking their role as facilitators of learning. Salembier followed up on his class work by visiting classes and coaching teachers as well. Current principal Anne Blake (who was an assistant principal at the time) credits these classes and follow-up work with getting the staff "used to putting that kind of intensive focus into their professional practice."

Milton got itself off the identified-schools list, but it did not stop there. More recently, the school has looked to build on that earlier work to bring in 21st-century skills such as cross-curricular use of technology, including one-to-one computing. To make this round of changes, they first contacted the state to look for grant funding for the hardware and then turned inward, tapping one of their business teachers to become a tech integrationalist; she then used her connection with St. Michael's College to host graduate-level technology education classes at the school. Then this person, along with trained teachers at the school, started offering more technology professional development as well. Around the same time, they made use of the purchasing power of their ESA (Darlene Worth's Chittenden Valley Education Cooperative) to send teams of staff members to headline presenters such as Alan November and Daniel Pink, as well as workshops on one-to-one computing, data analysis, and collaborative teaming. Parallel to the technology work was an effort led by the staff to come together in PLCs to rework their whole curriculum, not just around technology but 21st-century thinking skills such as authentic, collaborative work and interdisciplinary connections. Today, Blake is proud to say that in making the key switch to heterogeneous ninth and 10th grade teams, not only did her school's professional community improve but the students' test scores went up as well.

Blake and her leadership team were able to draw on the resources of the state, their

ESA, and local universities to make significant change in their school. They also have a staff who are willing to put in extra hours to meet collaboratively and take on leadership roles to implement new programs, and students and community members who have bought into the program. Similarly, Blake clearly brings important charismatic leadership to school, which helps focus the initiatives and motivate the staff. So when the school was invited to present as a model 21st-century school at the New England Consortium of Secondary Schools Conference in 2010, it was a statement about the accomplishments of all of those participants.

Milton High School transformed what they were doing, and in the process they transformed how they saw themselves and their students. The importance of this shift in self-perception is expressed in *Roots of Success*, a 2009 state department study, led by Susan Hayes, that analyzed attitudes and practices common to schools that were demonstrating positive results compared to other schools with similar demographics. Eight factors emerged: high expectations, continuous improvement, leadership, use of data, professional teaching culture, student supports, school climate, and family engagement. All were associated with higher NECAP scores given similar student populations (Hayes, 2009). More than just alerting people to these tendencies, Hayes (who is now with WestEd) and the VT-DOE's Noel Bryant have formed a professional development component out of the material to help schools identify attitudes toward students and learning that act as roadblocks to reaching potential. In their school sessions, they lead staff members to think about their belief patterns and then think about how they could shift those beliefs to better serve their students. Although the research showing these traits has been around for a while, there is something visceral about people's reaction to seeing the results in their own state; response to the findings is strong.

Otho Thompson, a former principal of a high poverty school and a consultant on the project, says the *Roots of Success* study is the "best contribution to Vermont research the DOE has done in years."

Throughout its history, Vermont has championed the role of teachers as leaders of the profession. In turn, the state has produced thoughtful vision statements and programs that support high-quality learning environments for many students in the state. Similarly, Vermont has numerous regulations and guidelines that call for thoughtful professional development and support of teacher growth. Without oversight, however, these guidelines (and even regulations) have not been followed by all schools, leading to a call for stronger monitoring. Lacking sufficient funds to do the work and feeling increased federal pressure, the state's focus in terms of oversight has come largely in the form of NCLB accountability measures. Ten years ago, in a letter to then-entering-commissioner David Wolk, UVM professor Charles Rathbone said that Vermont had "lost its center" in reacting to the mounting pressures of such accountability, a message that still rings true today (Rathbone, 2000). In programs such as the Transformation Schools Framework, the Roots of Success study, and stories such as Milton High School's thoughtful use of resources, one can see the heritage of Vermont education. Perhaps through efforts like these and of people like Duley to bring more coherence to the state's professional development efforts, Vermont is headed to a better balance.

Cross-Case Analysis

Professional Development Policy Contexts Across the Four States

Although the four states each have a unique professional development landscape, they also share common features. Table 8 displays some of the major state provisions directly related to professional development that are common to the states. A more elaborated version of this table is presented in Appendix C.

A scan of the professional development policy contexts indicates that most of these states have several common features that support professional development work. All have some form of professional development standards (Colorado and Vermont standards are for individual teachers seeking license renewal, whereas Missouri and New Jersey standards are for districts and schools conducting professional development); all have a professional standards board or other state-level body responsible for overseeing teacher licensing, professional teaching standards, and professional development; and all require induction and mentoring for beginning teachers, although the models differ.

All except Colorado require individual professional development plans for teachers, and all except New Jersey require a minimum level of professional development for license renewal. Two states offer incentives for teachers seeking National Board for Professional Teaching Standards certification: Colorado offers monetary incentives and Vermont permits license renewal to board-certified teachers.

In this section, we discuss briefly some of the common policies across states that support teacher participation in professional development, highlighting policies that appear to have greater leverage. One important caveat is that we have not scanned the same set of policies across all states. There are likely to be other states with similar sets of policies, strategies, and structures for regulating professional development. We cannot make strong inferences or causal claims about the relationship between these policies and the level of professional development activity or quality.

Strategies for Leveraging Professional Development Access and Quality

Of the four states, Missouri appears to have the strongest set of policies for ensuring state-level policies are actually enacted at the local level, through a guaranteed level of state and local funding of professional development, district- and school-level professional development committees, individual professional development plans, a means for the state to monitor district use of the regional professional development centers, surveys to evaluate satisfaction among participants in professional development offered by the RPDCs, and an audit to assess the effectiveness of the state agency's major professional development initiatives.

TABLE 9. PROFESSIONAL DEVELOPMENT POLICY PROVISIONS IN FOUR STATES

Feature	COLORADO	MISSOURI	NEW JERSEY	VERMONT
Standards for PD √ – Yes √√ – Includes mechanism for enforcement and monitoring	PD guidelines for license renewal	√√	√√	PD guidelines for license renewal
State resources for PD (√) – Indirect funding through other state department units that implement PD)	(√)	√	(√)	(√)
State-level Professional Teaching Standards Board (or similar board)	√	√	√	√
District or school-based PD committees required (or similar body, e.g., local standards board)		√	√	√ (For individual license renewal)
Individual PD plans required for all teachers		√	√	√
PD requirements for license renewal	√	√		√
Role of PD in teacher evaluation		√	√	
Role of PD in career paths and ladders (e.g., Master Teacher license)	√			
Induction and mentoring policies or programs √ – Yes √√ – Indicates mechanism for enforcement and monitoring (e.g,, program approval process, induction required for license advancement)	√√	√√	√√	√
State mechanism for monitoring PD quality	√	√	√	
Support for National Board Certification √ – State subsidy for application √√ – State monetary or license advancement incentive	√√	Federal subsidy; local monetary incentives	Federal subsidy	Federal subsidy; can be used for state license renewal
Role of professional learning communities in state policy for PD or school improvement (√) Encouraged, not mandated in all schools	(√)	(√) School PD committees required	(√) School PD committees required	√ Mandated in schools not meeting AYP (third year "corrective action")

Individually, these policies have modest leverage, but when combined they make up a coherent system of policies and mechanisms for enforcing, monitoring, and enabling implementation of those policies at the local level. For example, adopting professional development standards in itself may seem to be a relatively weak means for improving the quality of professional development offerings in a state. However, if those standards are embedded in guidelines for the work of district- and school-level professional development committees responsible for designing school professional development opportunities, and if they are overseen as part of the state accountability program, the standards in use become a much more powerful tool. Even though the severe budget crisis has caused the state to put on hold its mandated funding of professional development for the 2010–11 school year, the results of Missouri's long-term commitment to capacity building have enabled the work of its RPDCs to continue with resources orchestrated from federal programs, the universities that house them, local districts that value and purchase their services, and private funders of the rich array of professional learning activities they offer.

Likewise, New Jersey has a strong set of policies that support coherence in how professional development is planned and enacted, with several layers of monitoring through school-, district-, and county-level professional development committees or boards. Another benefit of district and school-level professional development committees in both Missouri and New Jersey is that they allow implementation of a common set of state professional development standards and collaborative engagement of key stakeholders in local decision making around the particular needs of local educators and schools. In this way, professional development standards set useful expectations that do not have to result in unhelpful standardization.

Using individual professional development plans, when associated with license renewal or teacher evaluation, is also common to Missouri and New Jersey. These individual plans supply a means to engage teachers in thoughtful planning about their professional learning, as well as a means for local and regional committees to monitor the quality and content of the professional development undertaken by teachers.

Simply requiring that teachers meet clock hour requirements for either license renewal or teacher evaluation can be insufficient to provoke useful learning, and perhaps even counterproductive if the quality of the professional development is poor. For teachers, having to accumulate required credits in a system that does not also promote high-quality professional development can be merely an exercise in frustration. Having mechanisms to monitor and support the quality of professional development in which teachers and schools are investing their time is an important state role.

Colorado and Vermont have standards or guidelines for professional development associated with license renewal. Teachers must document the professional development undertaken to meet license renewal; the license renewal approval process presents an opportunity for the state (in Colorado's case) or school or regional professional standards boards (in Vermont's case) to monitor and approve (or disapprove) the professional development and work documented by teachers, along with their plans for future professional learning. In Vermont, teachers present a portfolio of their work, stimulating reflection and thoughtful

planning, along with a new seven-year plan. At a minimum, the guidelines and standards for professional development help teachers make thoughtful choices about the professional development they complete, knowing that their choices will be periodically reviewed. The review process also helps schools and districts be more aware of and thoughtful about how to offer useful professional learning opportunities that teachers testify are helpful and supportive.

How well these mechanisms are implemented at the local level is clearly an important factor in determining whether there is genuine coherence in the states' professional development systems. No system is completely airtight, and there will always be some deviance from how the system is intended to operate, depending on local capacity, will, and leadership, as Milbrey McLaughlin (2005) points out. However, when it comes to state-level policies aimed at improving local practice, it appears that building in multilayered mechanisms of this kind for regulation and monitoring is more likely to support productive implementation of the policy than if the mechanisms did not exist. They appear to counteract the tendency toward "loose coupling" (Weick, 1976) that often plagues policy implementation.

Monitoring Professional Development Quality. Creating more accountable professional development systems entails monitoring the quality of professional development offerings within each state. New Jersey monitors professional development quality in two ways. First, county boards review district plans, which are a collection of all the individual school plans. Second, the state has monitored the quality of professional development offered in its 33 PLC Lab Schools by twice administering the NSDC's Standards Assessment Inventory (a teacher survey) to determine the degree to which the NSDC/Learning Forward *Standards for Staff Development* are evident in school practice. Schools and districts involved in those PLC Lab Schools project have used information from the initial administrat ion of the survey to develop their district and school professional development plans and measure their progress in creating a collegial learning culture.

Missouri has monitored the levels of RPDC use by districts as well as participant satisfaction in some professional development events. More recently, the department of education took steps to assess the quality of professional development implementation across a range of major state education agency-sponsored professional development initiatives, using influence on student achievement as one indicator of quality. This audit is designed to help policymakers reach better decisions about which professional development programs to support, what sorts of measures are needed to determine the quality and efficacy of professional development, and which ones to discontinue.

Similarly, the Colorado Department of Education, through the New Teacher Center, has administered a statewide teaching and learning conditions survey ("TELL Colorado": Teaching, Empowering, Leading, and Learning Initiative) to 23,000 educators (just over one-third of the total). Initially funded by state appropriations, the survey will continue to be administered to all teachers in the future through Title II funding. The goal of the biennial survey is to study and address teaching and learning conditions in order "to develop a critical mass of teachers who are well prepared to teach and who will remain in the hardest-

to-staff schools long enough to make a significant difference for students and their families" (Hirsh, Sioberg, and Germuth, 2010). The seven categories of survey questions explore time, resources, community engagement, decision making, school leadership, professional development, and student learning. Among the questions about professional development, the survey queries teachers on their roles in determining the content of in-service professional development programs and in school improvement planning, whether they have sufficient resources to take advantage of professional development activities, whether they have opportunities and time to learn from one another and work collaboratively, whether they have enough time to participate in professional development, whether professional development is differentiated to meet the needs of individual teachers, whether the professional development they have experienced has enhanced their ability to improve student learning, whether their professional development opportunities are based on state or national standards as well as their school's continuous improvement plan, and whether professional development offerings are data-driven. In addition, the survey queries beginning teachers about access to induction and mentoring opportunities, and it asks all teachers about their plans to remain at their schools and in the profession. (The survey instruments and the results of the first TELL Survey can be found at: http://www.tellsurvey.org.)

The results of the survey are linked to school-level student achievement data to assess the correlation between the teaching and learning conditions reported by teachers and administrators and school performance. In addition, the results for schools in which at least half of all educators responded to the survey are made available to individual schools and districts for use in school and district improvement planning. This extensive array of information, available regularly, can create the kind of ongoing feedback that helps states take stock of professional learning and other conditions in schools as a means to refine their policy initiatives and implementation strategies.

Accountability for Induction and Mentoring. All four of the states in this study had in common a commitment to the professional development of beginning teachers. Colorado and Missouri have had requirements for induction on the books for two decades or more. New Jersey and Vermont recently incorporated an induction or mentoring requirement. More than three-quarters of beginning teachers report having a mentor in each of these states. At the same time, there are some differences in the level of participation across states that appear related to the accountability mechanisms states have created.

Colorado, Missouri, and New Jersey have standards for their induction and mentoring programs and require that all educators with initial or provisional licenses complete induction or mentoring to advance to a professional license. Although Vermont requires induction and mentoring programs, it does not require that candidates receive such assistance to advance to the professional license. As a result, only 59% of the state's beginning teachers in the 2008 Schools and Staffing Survey reported participating in an induction program; nonetheless, 78% reported having a mentor.

Colorado also requires districts (or consortia of districts) to seek induction program approval and to provide induction for educator licenses to be valid in their districts. Subsequently, close to 91% of beginning

teachers in the 2008 Schools and Staffing Survey reported participating in an induction program, while 86% reported having a mentor during the first year of teaching.

Missouri requires that teachers with an initial license participate in both a two-year "mentor assistance program" and a "beginning teacher assistance program," but it does not require program approval as Colorado does. Rather, the induction and mentoring program is embedded within the districts' required professional development plans for beginning teachers. The state also reviews district professional development plans for beginning teachers through the oversight of each district's Comprehensive School Improvement Plans. Because a district's induction and mentoring plan for beginning teachers is part of its professional development plan for teachers in the district, it is at least partially funded through the mandatory 1% funding allocation for professional development at the district level. At 82%,participation in induction was reported in the 2008 Schools and Staffing Survey as a bit lower in Missouri than in Colorado, but 87% of teachers reported having a mentor in the first year of teaching. In 2005, the state began requiring beginning teachers to complete at least 30 hours of professional development per year for two years, and in 2008 it started requiring two years of mentoring. Missouri is likely reaching nearly universal participation in mentoring and induction in response to these requirements.

Since 2003, New Jersey has required that all beginning teachers have mentoring as part of their individual professional plan, which must be in place within 60 days of beginning work. Traditionally prepared teachers are to receive at least 30 weeks of mentoring, while alternatively prepared teachers receive at least 34 weeks of mentoring. Each district's professional development committee also submits a mentoring plan for beginning teachers that must be approved by the county superintendent. There appears to be no state-level monitoring of these plans or any other enforcement mechanism for districts. Because induction per se is not mentioned in New Jersey's administrative codes, it is not surprising that only 68% of beginning teachers in the 2008 Schools and Staffing Survey reported participating in an induction program; meanwhile, 80% reported having a mentor in the first year of teaching.

These data suggest that in states where both induction and mentoring are explicitly required, and there is some way to enforce the requirement that districts offer these programs, there is a higher likelihood that beginning teachers will have access to these programs. Remarkably, with the exception of Missouri there is no state funding associated with induction in these states. Districts are held responsible for using existing resources to provide the release time for participants, compensate mentor teachers, and offer courses and other induction activities. Of all the states, Colorado had the highest participation in induction. It appears that having multiple means to enforce the induction requirement, by holding both teachers and districts accountable through licensing and program approval processes, may have made the difference in ensuring wide access to induction services in the state, despite no additional state resources for local programs.

On the other hand, requiring an approval process at the state level does require the state to dedicate resources in the form of personnel time to conduct the approval process and monitor compliance. Local

professional development committees that monitor and enforce induction or mentoring requirements also require time and resources. Even though these requirements may increase the availability of induction and mentoring programs in a state, they do not guarantee the quality of these programs.

Leveraging Collegial Strategies for Professional Learning. The states we studied found a number of ways to leverage school staff collaboration as a strategy for school improvement, sometimes in the form of professional learning communities (PLCs). Acting on the research suggesting that such collegial work can have a positive effect on teachers' individual and collective practice, the states used the policy tools at their disposal to move professional development from the individual "sit and get" model that once dominated the field to a more collective model embedded in the work teachers do with their students and with one another.

Vermont leveraged federal policy under No Child Left Behind to require PLCs in underperforming schools. Teacher collaboration in school-based support teams, as well as grade-level or departmental teams, is required in all schools that have not met the Adequate Yearly Progress standard. In addition, "teacher learning communities" that "review and analyze student performance data, share student work, and share teaching strategies with the goal of improving student achievement" are mandated in schools in the third year of corrective action under NCLB (VTDOE, Commissioner's Required Actions, Year 3 Corrective Action). The state monitors these schools through coaches and review teams. The state initially directed support to districts in implementing the PLC requirement through a Principals' PLC Program (which has since been discontinued) and through school coaching models supplied by independent professional development providers such as TASS and SRI.

Although PLCs are not required in Colorado, teacher/school staff collaboration in cycles of school inquiry is a built-in feature of many of the federally funded school improvement initiatives, such as School Improvement Grants, the state's Closing the Achievement Gap grant, the federally funded Positive Behavioral Intervention and Supports (PBIS) initiative, and the IDEA-funded Response to Intervention (RtI) initiative. The RtI initiative, which is mandated for all Colorado school districts receiving IDEA and state special education funding, includes as part of its implementation model use of school teams to analyze student data and needs, engage in problem solving, develop action plans, and monitor progress.

Missouri and New Jersey sponsor professional learning community initiatives—Missouri's PLC Project and New Jersey's PLC Lab Schools. Although neither program is state-mandated, both states have built a system of support to encourage and promote PLCs in schools. In the Missouri PLC Project, which is considered a school improvement initiative, the Department of Elementary and Secondary Education offers comprehensive ongoing training, technical assistance, and support through its RPDCs across the state. State department personnel work out of the RPDC offices to deliver these services. The Missouri PLC Project grew out of the Missouri Accelerated Schools project, and since the project was initiated in 2003 nearly 300 schools have participated. School interest in the project burgeoned in 2007, resulting in a doubling

of state regional staff assigned to work on it. Participation in the project entails a three-year process. For first-year school teams, the state holds a summer academy and monthly professional development sessions throughout the school year. For second- and third-year school teams, the state conducts three or four professional development events during the year. All schools are given onsite assistance and mentoring visits throughout the year and are invited to a two-day Powerful Learning Conference, with additional professional development opportunities offered by regional PLC staff and RPDC staff.

New Jersey's professional development initiative focuses on supporting schools to engage in school improvement using collaborative school-based work. Like Missouri, New Jersey requires local schools and districts to have professional development committees responsible for proposing a professional development plan for their schools based on a needs assessment and progress monitoring in the schools. These plans must also be aligned with the state's adopted professional development standards, which encourage collaborative processes in schools. Supports for collaborative school-based professional development are available in New Jersey through state-sponsored professional development offerings, the state's "Tool Kit for Collaborative Learning," and a system of planning and monitoring tools to support collaborative work.

The state's PLC initiative is the result of this emphasis on school-level collaboration. Rather than mandating formation of school PLCs, the state's strategy to encourage this kind of school-based collaboration is to offer resources, tools, professional development, and access to organizations with expertise in initiating and sustaining PLCs. One purpose of the PLC Lab Schools program (funded through NCLB Title II) is to present to schools around the state not in the program a model of what is possible when these resources and tools are used well.

It is interesting to note that, whether through mandate or encouragement, all four of these professionally active states have embraced the underlying principles of PLCs as part of their professional development and school improvement strategies.

Policy Supports for Professional Development

The four cases suggest that several policy-related factors shape the focus of professional development and its availability and implementation. Policies related to a state's *leadership, resources, and infrastructure for professional development* are three major factors that appear to play important roles in shaping the nature of professional development opportunities afforded in each of our case study states. As part of the state infrastructure, the *roles of professionals and intermediary organizations* in relation to state agencies and state strategies are important influences on the content and focus of professional development opportunities.

In some cases, these policies are instantiated in state statutes and regulations, while in others they are a result of a political climate that honors local control.

Leadership. It was clear in all four states that how well a state education agency is equipped to serve its schools' professional development needs and to use professional development as a strategy to support a

state agency's vision for educational improvement largely depends on the actions of those who have led and built the educational system. Outcomes depend on the actions of many leaders—governors, legislators, state and local superintendents, school board members, and professional innovators—who have helped design and enact key statutes, regulations, and rules, and who have funded and overseen implementation of critical initiatives.

We observed how leaders have used federal mandates strategically (and differently from state to state) and devised state strategies to support major progress in professional development. For example, all of the states responded to NCLB's increasing emphasis on school accountability measures with a stronger focus on professional development in tested subjects such as literacy and mathematics. In Colorado, state leaders have linked a focus on improving student achievement and closing achievement gaps with resources, incentives, and technical assistance to build local capacity and buy-in. In Vermont and Missouri, state leaders sought broad changes in school culture by focusing educators on school-based inquiry and collaboration as they integrated it into requirements and supports for implementing federal programs.

In Missouri, a prior generation of leaders (1) had the foresight to forge into state law the RPDCs that could provide needed support to local school districts, (2) committed a consistent level of funding to support these structures, and (3) thus created a reliable mechanism for meeting the needs of local districts and implementing state policy.

The nature of professional development policies and strategies employed by a state education agency also depends on who is at the table when important decisions are made regarding instructional improvement, accountability policies, standards revision, and professional development initiatives. When state leaders value the expertise of professionals and engage in distributed leadership, the policies and strategies that are aimed at improving professional learning and instruction are often better grounded in what is known about effective strategies and more supportive of educator buy-in.

For example, in New Jersey state education agency leaders have actively sought the advice and expertise of professionals to design the state's professional development plan and support its implementation. This has clearly shaped the professional development strategies harnessed by the NJ DOE, which involve teachers in collaborative work to tackle problems of practice together. Historically, leaders in both Vermont and Colorado maintained respect for local initiative and local needs for professional development, rather than relying on mandates to force a one-size-fits-all approach on local schools. As we discuss later, this kind of environment has supported innovation and grassroots efforts that led to building a state infrastructure for professional development that could serve local needs more effectively.

Resources. Clearly, the availability of resources has much to do with a state or district's ability to implement its instructional improvement initiatives thoughtfully and effectively. Historically, these states have made important resource commitments to professional learning. Even though all have lost some ground in the current budget-cutting climate, they have skillfully leveraged federal funding and other resources, including the expertise of their professional development partners, to sustain progress.

As noted above, at least one state in our sample (Missouri) demonstrated commitment to supporting professional learning by appropriating a minimum level of funding specifically for professional development (1% of the state education budget plus 1% of local budgets every year). This overall commitment to professional development funding was maintained until 2010, when all state funds for the RPDCs were eliminated as a result of the state budget shortfall. The Department of Elementary and Secondary Education has maintained and altered the work of the RPDCs by allocating federal funds to support them and by connecting the work of RPDC staff—some of whom are now department employees—even more closely to school sites.

Colorado has made strategic use of a range of federal programs to fund professional development and allocates much of the $99 million from its state-funded Read to Achieve initiative to development of educator expertise. It has also raised money from a private foundation to create an Office of Educator Effectiveness, to coordinate and leverage the many streams of professional development funding and activities. Despite shortfalls causing the state to put a hold on funding for its 12 new Regional Services Areas, the state allocated new funds to subsidize National Board certification and to offer stipends to board-certified teachers who are willing to work in high-need schools.

New Jersey has also used federal funds strategically to leverage professional learning. In addition, the state designed a response to the *Abbott* lawsuit in which professional development featured prominently as a means for improving outcomes in the low-wealth districts that received more equalization funding. The state made huge investments in training for early childhood educators, as access to preschool was expanded, and substantial investments in professional development to support literacy and mathematics teaching, use of data for school improvement, and whole school reforms in the Abbott districts. In another strategic move, the state created and funded Educational Information and Resource Centers (EIRC) to offer research, technical assistance, and professional development support to districts. Later EIRCs became fiscally independent public nonprofits that retained their distinction as local education associations but with the ability to raise outside funds. Even as state budgets are being cut and other professional development initiatives feel the impact, the EIRC remains a strong source of support for local schools and districts, offering multifaceted services to fill in many of the gaps.

Vermont's Educational Services Agencies are another case of a hybrid support organization, partly funded with federal (mostly ESEA Title II) and state dollars and partly with external funds. Though less well-heeled than New Jersey's EIRC, the ESAs help districts access professional development expertise and programs that fit their needs. With the support of federal and state funds, Vermont has tapped high-quality national programs such as Reading Recovery, Positive Behavioral Support (PBS), and RtI as well as local efforts such as the Vermont Reads Initiative, the Vermont Math Initiative, and the Vermont Professional Development Network. Federal funds have been leveraged in many ways, including the requirement that schools receiving program improvement funding develop PLCs. Despite recent cuts, these and other school-embedded teacher development and leadership programs have been sustained.

In this period of economic recession and budget crises at all levels, the critical nature of resources as a factor in shaping the focus of professional development (because of the influence of federal resources) has come into sharp relief. All four state education agencies in our study currently face challenges in their ability to support professional development work, often having to make difficult choices to cut programs and eliminate line items that were previously sacrosanct. As state resources become scarcer, there has been a corresponding increase in dependence on federal funds for survival, which means states must work within the framework of federal mandates while leveraging these funds to advance their own visions for school improvement.

Federal programs have supplied vital funding for instructional improvement in high-need schools (NCLB Title I school and district grants), improving the overall quality of the teaching workforce (NCLB Title IIA school grants), and delivering professional development in specific areas such as science, math, and instructional technology (NCLB Title IIB and IIC grants). The importance of this funding is suggested by an analysis of the 2008 Schools and Staffing Survey (Wei, Darling-Hammond, & Adamson, 2010), which revealed that teachers working in schools located in urban areas (in contrast to suburban and rural schools) and in schools with the highest level of free and reduced-price lunch program enrollment, the highest minority enrollment, and the highest limited-English-proficient (LEP) enrollment—that is, those directly targeted for these federal funds—reported the highest participation in content-focused professional development as well as the greatest cumulative average number of hours of professional development. Although states have worried about how accountability pressures sometimes narrow the curriculum and the focus of teacher's learning opportunities, one benefit of NCLB is the nature of the Title II guidelines as to what kinds of professional development can be supported by these federal resources. In large part, these guidelines are consistent with those that research has found to be supportive of improvements in teaching and learning (see Figure 3.)

It is unclear the extent to which these guidelines for professional development can be enforced, but they do offer some useful guidelines for districts and state agencies that must approve LEA applications for use of Title II funds.

An Infrastructure for Professional Development. As the preceding discussion indicates, each of these four states has created an infrastructure for implementing professional development that augments the efforts of the state agency with public and private organizations that interact with and support the field. Some state departments deliberately created formal structures (RPDCs, BOCES, ESAs) to support provision of professional development services broadly, particularly for small districts and those in remote, rural areas. In some cases, these agencies are authorized to serve as Administrative Units, or to pool resources so as to make it possible for small districts to gain access to essential services. In others, these agencies are responsible for meeting the needs of local schools as well as supporting the state's accountability initiatives.

In other cases, a state education agency has invested in specific professional development initiatives meant to build regional or local capacity by training leaders, in subject matter initiatives such as the Vermont Mathematics Initiative. Some state agencies

have employed staff members with specific expertise to coordinate instructional improvement initiatives and offer direct training to district staff, or used regional technical assistance models, but initiatives of this type clearly have limited reach in states with a large number of districts and schools. In addition, state agencies have actively sought to partner with professional organizations and providers with similar goals, recognizing the limitations of their own influence and capacity. For example, the Colorado Math Intervention Team, a joint project among the CDE, the Colorado Council for Learning Disabilities, and the Colorado Council of Teachers of Mathematics, has worked collaboratively as a professional learning community over the last five years to co-plan and co-sponsor regional workshops focused on supporting struggling learners in mathematics, particularly those with learning disabilities.

Across all four states, local and regional professional development organizations—such as ESAs in Vermont, the RPDCs in Missouri, the BOCES and independent providers in Colorado, and the EIRC in New Jersey—have emerged as a common strategy for providing instructional program supports to schools. These organizations were initially created by the states themselves, in part because they are able to lend assistance to schools and districts where the state departments are unable to do so, given their limited capacity, relatively small budgets, and primarily regulative role.

These and other professional development organizations are also often supported by universities or professional associations (e.g., Missouri's RPDCs and state Writing Project sites). In all cases, whether professional development organizations have some connection to a governmental agency (Missouri's RPDCs, Vermont's Math Initiative, New Jersey's PLC Lab Schools Project) or stand on their own, they can be consequential actors in constructing a professional development system.

Intermediary organizations, such as Missouri's network of regional support providers, the RPDCs, often serve two masters by design, mediating between local schools and the state agency. When the intermediary role is a formal part of the state infrastructure, the intermediary organization can become a mechanism to offer more immediate feedback to state policymakers about what is working and not working in the system.

The RPDC plays this system feedback role in Missouri, for example, in its unique brokering role in the State Accountability System. As an intermediary organization, the RPDC's role is to act as a sense-making filter for the field of practitioners, but on behalf of the state's interest in achieving its vision. This sense-making and mediating role is a formal part of the state infrastructure.

In the context of schools on mandated accountability plans, for example, the RPDC acts as translator of what the state requires districts to do, while at the same time supporting local schools to develop a plan that will actually help them improve the quality of teaching and learning in their schools. Sometimes a state needs to change its approach to truly support the particular needs of local schools. At such times, the intermediary's role is to communicate the schools' needs to the state agency. For example, RPDC directors have communicated to Missouri's DESE that the professional development initiatives (RtI, PBS, and PLC) provided to underachieving schools can

sometimes be insufficient, too piecemeal, and too disconnected from the school context. This allows changes in the design that support stronger implementation. The RPDC directors do not see their role as merely carrying out state policies but rather as helping the state to support its schools more effectively.

The formal role of a system intermediary is to work with the state and the schools to broker more effective solutions to the myriad problems schools face. In this way, formally establishing an intermediary professional development role as part of a state's professional development infrastructure can be a useful strategy. At the same time, establishing an intermediary role as part of a state's PD infrastructure still requires a system for closely monitoring the quality of the professional development. It also requires having a clear vision for what professional learning in the field looks like across an educator's lifespan, from induction to professional licensure and throughout an educator's career.

Beyond formal intermediaries that are, in part, agents of the state, independent professional organizations can also be part of a state's professional development infrastructure. In Colorado, for example, many of the professional development resources have come from independent providers, notably organizations such as McREL, the Public Education and Business Council (PEBC), and university-based professional development school models. There is a rich environment of professional expertise in the state. As we have discussed, a similar mix of engaged organizations exists in Vermont. Both of these local-control states have encouraged multiple approaches and pathways for development of professional knowledge to emerge.

Environments like these can afford many opportunities for the teaching profession itself to build the structures, norms, and knowledge base needed to transform instruction. Professional policy—organization of learning around standards of practice, hubs of innovative practice among schools and their partners, and activities such as National Board certification—can contribute as much as governmental regulation does to the development and spread of knowledge in a field like education, where practice is highly complex (Darling-Hammond, 2010). In an environment where professional associations or professional governing bodies, such as standards boards, are charged with enforcing professional standards of practice, strategies that are effective have a better opportunity to grow and spread.

We saw in various ways how each of these states, by connecting to professional partners, created opportunities for experimentation that stimulated innovation and improvements in practice. In such environments, innovative approaches to school and instructional improvement, including ideas about formative assessment and progress monitoring, needs-based and data-driven decision making, the importance of leadership and distributed leadership teams, and professional learning communities, to name a few, have gradually gained a foothold in educators' thinking about the best approaches for instructional improvement at the local, state, and national levels—so much so that they no longer seem like innovations.

Linked to the states' systems of professional monitoring, the efforts of these partners also became more effective through ongoing and specific feedback. Establishing an environment within states where a variety

of professional learning approaches can emerge simultaneously may be particularly well suited to assisting schools, because we know that school contexts, which vary considerably, are a significant mediating factor in how reforms are understood and enacted.

How a state attends to the roles of various kinds of intermediary organizations affects the extent to which these organizations are able to influence the state's professional development approach and connect the state's vision to local needs. Orchestration of such organizations, as well as universities and professional organizations, may affect the extent to which a shared approach to school improvement exists within the state, the accessibility of high-quality professional resources that are made available to all schools, and the degree to which innovative approaches and multiple pathways for improvement are encouraged and made possible.

Common Tensions and Issues

In these four state cases, we also observed a number of common tensions and issues related to a state's ability to offer high-quality professional development, particularly in the current context of high-stakes accountability.

States as Mediators of Federal Accountability and Mandates. Just as intermediary organizations have an important role to play in mediating state mandates and in supporting districts to meet state requirements, states mediate relationships and regulations between the federal government and the districts they serve. Because the requirements of the federal mandates sometimes challenge local district interests, tension can arise between districts and the state, with the latter responsible for enforcing federal mandates.

The demands on states to support schools often exceed their capacity. Most states make a great effort to deliver adequate resources to the vast majority of struggling schools that fall under the states' accountability plans. Beyond the few federal grants designated for school and district improvement, there are few resources to offer expertise or support to these schools or to build their capacity.

The states we studied also struggle with this tension, but they have found some creative ways to broker the demands of federal mandates with the needs of local schools. For example, Missouri has found ways to offer a systematic support structure for schools that are struggling to improve. Missouri's DESE has supported low-performing schools through its PLC, RtI, and PBS initiatives; it has brokered use of these federally funded programs more widely through the RPDCs. DESE hires regional program consultants to be available to provide services to districts placed on the state's accountability plan that choose to take advantage of state resources. The RPDCs are also empowered to direct support to districts that are developing their plans for improvement. There are still difficulties in achieving systematic coordination between these state regional consultants and the RPDC staff, as well as among state agency units supplying disparate services to the same districts. But at least there is a state-level and regional infrastructure in place to give supports to the schools struggling to make adequate yearly progress.

Federal and State Control vs. Local Autonomy. The tensions regarding gradual encroachment of federal and state author-

ity over local education decisions that were featured most prominently in the Colorado case were observed across the other three states as well. As state and local resources for education and professional development dwindled because of the latest budget crises, federal funding and its requirements have exerted greater control over local education decision making.

Districts that rely heavily on ESEA and IDEA funds are especially influenced by state and federal mandates. Even voluntary grant programs come with a number of conditions that must be satisfied. Sometimes these conditions are inconsistent with best practices in instruction and professional development. For example, the Vermont case cites an instance of a school being required to give up its established, successful reading program when it elected to participate in Reading First, which requires a primarily phonics-based literacy approach. The school saw a subsequent decline in its reading scores as a result of accepting the funds and changing its approach.

State agencies are also relying increasingly on state mandates and rules to achieve their goals for school and district improvement. The changes are most obvious in states such as Colorado and Vermont, which have historically had an especially strong local-control ethic, but are also apparent in New Jersey and Missouri, which most analysts would consider local-control-oriented as well. These states still encourage significant local decision making, but both have seen a tightening of state rules that accompanied federal and state accountability policies. Some of the centralization of effort has been productive in terms of seeking to create greater coherence of effort and purposefulness in guiding schools. However, there are also tensions as to which federally or state-required courses of action will support genuine school improvement and which will achieve compliance without improving learning.

As just one example, an RPDC director in Missouri noted that the state expects local districts to implement a program "with fidelity," but educators sometimes find that a prescribed "program" is not what is needed so much as strategies fitted to the needs of a particular context and an understanding of how those strategies work or don't work in particular circumstances.

Compliance vs. School Transformation. In the face of these tensions, the states we studied have managed to find some productive strategies for balancing centralized direction with local capacity building that can help schools go beyond procedural compliance. In the context of NCLB and state accountability programs, they have sought to find meaningful processes that enable low-performing schools to transform themselves so they can successfully meet their students' needs, improve instruction, and ultimately improve student achievement for all subgroups.

In Colorado, the CDE engages schools identified as being in need of improvement in a "continuous improvement cycle" of needs identification, selection of appropriate interventions, and evaluation of attempted strategies. In Vermont, identified schools are required to spend 10% of the school improvement funds they receive on professional development, and to create PLCs. In New Jersey, the state department sends auditing teams to implement the Collaborative Assessment and Planning for Achievement (CAPA) program. The CAPA team audits identified schools and gives them a plan of what needs to be done,

including professional development components, to meet extensive requirements in the QSAC monitoring and evaluation system. Similarly, in Missouri RPDCs are assigned a central role as members of a state management team that conducts site reviews. Following these reviews, the team gives the district or school recommendations for areas deemed to be in need of improvement. Districts then develop a plan for improvement that is expected to incorporate site review recommendations.

Enlisting intermediary organizations outside the state agency to lend support to schools appears to reduce the tendency for accountability enforcement to put schools in a defensive compliance mode. For example, because the Missouri RPDCs have refrained from serving as "enforcers" of the state's accountability system, they are able to maintain a supportive, collaborative relationship with districts; this seems more likely to yield genuine effort to address weaknesses. Similarly, in Vermont, the Teaching All Secondary Students program (a subgroup of the Vermont Higher Education Collaborative) is a well-received intermediary professional development organization that provides expertise through a team of experienced school leaders to support schools engaged in comprehensive reform. In Colorado, schools that receive federal school improvement grants have the option of using their federal dollars to contract with external vendors (e.g., McREL and a long list of other approved service providers) to offer general guidance as well as specific instructional interventions. This strategy of enlisting external expertise and resources, and separating the enforcement and compliance role from the support provider role, seems to be a critical strategy for engaging districts and schools in turnaround efforts. In this sense, the role of intermediary organizations as providers of professional development and coaches for schools is more important than ever.

Conclusions and Implications

Research evidence supports the notion that changes in practice leading to student learning are most likely to be enabled when professional development is ongoing, intensive, and connected to practice and school initiatives; when it focuses on the teaching and learning of specific academic content; and when it builds strong collegial relationships focused on instruction and learning. Although we claim no direct causal relationship between the robustness of the policy frameworks in the four states studied in this report and increases in student achievement, from these experiences education leaders and policymakers can draw some valuable insights into policy levers that may be effective in their states.

This research suggests that a number of elements may be important to state success in building strong opportunities for professional learning:

1. *A common and clearly articulated vision for professional development that permeates policy and practice.* All the states we studied had developed standards around professional development, which are reinforced consistently by multiple policies and structures. Even though 35 states have either adopted or adapted Learning Forward's standards for professional development, not all have figured out how to implement and reinforce these standards in all aspects of teachers' learning. This research suggests it is important that those standards match expectations for teacher licensure and renewal and be understood and

emphasized by all organizations involved in delivering professional development throughout the state.

The states we studied have also integrated the standards into expectations for teachers' individual professional development plans, school plans, and the review processes used by local school, district, and county professional development boards. They have used them to guide initiatives supporting professional learning communities and the expectations for programs provided by professional development organizations. They have also used these standards to organize feedback about learning opportunities that teachers experience in their schools and through formal professional development offerings. The effort to create and reinforce a shared vision moves the professional learning enterprise forward and reminds all the actors of what they are trying to accomplish.

Given the centrality of school staff collaboration to the vision of professional learning embraced by these states, all have found ways to encourage and support collegial learning in their school improvement policies, often in the form of professional learning communities. Whether through Vermont's requirement that low-performing schools create PLCs, or through Colorado's inclusion of collegial inquiry models in virtually all of their federally funded programs, or through the state-sponsored PLC projects in Missouri and New Jersey, the states have actively leveraged new paradigms for teacher learning, reinforcing their shared vision for professional development.

2. *Effective monitoring of and support for professional development quality.* Although many states have created professional development standards, and some have increased investment in professional development, relatively few have found effective ways to monitor and regularly improve professional development quality. The states we studied developed a number of useful mechanisms to guide and oversee professional development and stimulate thoughtfulness at the local level.

Missouri's efforts to monitor district usage of professional development services offered by the state's RPDCs and to survey teachers who have participated in selected professional development events are examples of ways states can begin auditing the usage of these services and the satisfaction of those who use them. Missouri and Colorado have also begun to look at the relationship between professional development initiatives and student achievement gains. Although making attributions is challenging when many factors are at play, the effort to consider outcomes focuses attention on student learning.

Colorado and Vermont have guidelines as to what kinds of professional development can qualify for license renewal, imparting some leverage on relevance and quality. Requiring teachers to develop their own professional development plans around the state standards—as Missouri, New Jersey, and Vermont do—is a way to engage teachers in designing their own professional learning and in helping to shape the state and local systems of support. Engaging local professional development committees in reviewing these professional development plans for teachers or schools—as these three states do—is a way to create feedback loops in the system, whereby educators examine the strategies and outcomes of both job-embedded and externally provided professional development activities and make judgments about what options to

pursue in the future. In Vermont, where teachers present a portfolio of their professional learning to a local committee, teachers' judgments about what supports their learning are made visible and can be factored into school and districtwide planning.

Creating opportunities for collective planning and reporting about professional learning at the individual, school, and district levels; tying these plans to state standards for professional learning; and creating feedback loops regarding professional development quality can create broader understanding among all the actors in the system as to how to develop, deliver, and support high-quality learning opportunities for teachers.

3. *Mentoring and induction requirements that create a foundation for ongoing professional learning.* All of the states we studied have requirements for mentoring beginning teachers, and three have requirements for structured induction programs as well. These requirements are working to produce a high incidence of access to mentoring for novices (more than three-quarters in each state and as high as 88% in Colorado). Teacher participation is highest where there are mechanisms for enforcing implementation of these programs—for example, as a condition for a professional or continuing license.

In Colorado, where 91% of new teachers participate in an induction program, local induction programs must be approved by the state. This gives the state more leverage to ensure that they follow strong design principles, such as including onsite mentoring, which research indicates has a positive effect on teacher learning and retention in the profession.

Linking induction programs to statewide teaching standards, as all of these states do, and to ongoing professional development, as New Jersey does with the individual professional plans it requires of all teachers, are other promising practices.

4. *An infrastructure of organizations for facilitating professional development.* For professional development to make a difference in practice on a wide scale, it must be embedded within a comprehensive system of learning and improvement that readily supports teachers' work—and it must be sustained, connected to content standards, and supported by coaching and reflective inquiry. This kind of pervasive professional development does not occur without considerable work within schools to facilitate professional learning, augmented by a stable infrastructure of organizations prepared to offer ongoing support.

Recognizing that state education agencies have limited resources to offer professional development across an entire state, all four of the states we studied created or encouraged innovative professional development networks that leverage and connect the efforts of professional groups and intermediary organizations with those of schools. Colorado, for example, leveraged an organization of math teachers and another focused on learning disabilities to build a math intervention program, while Missouri developed a network of state-run RPDCs that support districts and help review their school improvement plans. New Jersey and Vermont also support a variety of initiatives focused on curriculum, assessment, and PLCs, with the help of regional intermediaries, universities, and other professional organizations. Each of these external assistance agencies adds opportunities for professional learning that enhance or extend

what individual schools and districts are doing, or provide expertise in areas where schools and districts are building their own capacity.

By working with professional organizations, content-area experts, universities, and private providers, states can help ensure that a range of players contribute to innovation in designing and delivering professional development. Incorporating local control and oversight of professional development, as states with local professional development boards have done, also ensures that state priorities are meshed with specific local needs, that the parts of the system can communicate with one another, and that productive planning for professional development supports can take place with better knowledge of what is needed and what will work.

5. *Stability of resources.* Over recent years, all four states have used a combination of state, federal, and local resources and incentives to encourage and extend professional learning opportunities in a variety of creative ways. Even though limited resources are inevitable in the current budget climate, these states have been innovative in seeking to protect professional development funding. Missouri's RPDCs, for example, identified alternative revenue sources when their funding from the state was cut, while Colorado and others used federal grant money tied to initiatives such as Reading First and IDEA to bolster professional development in those areas. New Jersey and Vermont have created intermediary organizations that draw on both public and private funding to serve local professional development needs. A commitment to maintaining the broadest possible base of resources will be critical to their success, and that of other states in the years ahead.

These case studies suggest how states can help lead and encourage thoughtful professional development, by setting standards and infusing them in the teaching career, from induction to development of accomplished teaching and in local efforts as well as state initiatives. States can also support innovative learning opportunities for students and teachers, as we saw in New Jersey's and Missouri's support for PLCs, Vermont's support of portfolio assessments, and Colorado's adoption of RtI and its use of data-driven decision making in its major instructional improvement initiatives.

State policy can be a potent lever for mandating and encouraging professional development, but it is a blunt instrument when applied to the *quality* of implementation. For this reason, the use of intermediaries that can balance state requirements with local needs, as well as partnerships and initiatives with professional organizations that give voice to the input of teachers and subject-area experts, can help strengthen the reach and capacity of stage education agencies and improve the quality and pervasiveness of professional learning opportunities.

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APPENDICES

Appendix A:
NAEP Data for Four Case Study States

TABLE A1. NAEP SCORE TRENDS: FOURTH GRADE MATHEMATICS, 2003–2009

	Average Scale Score				Achievement Level					
	State		National Public		At or above Basic		At or above Proficient		At Advanced	
	Avg.	SE	Avg.	SE	Pct.	SE	Pct.	SE	Pct.	SE
COLORADO										
2009	243	(1.0)	239	(0.2)	84	(1.2)	45	(1.6)	8	(0.9)
2007	240	(1.0)	239	(0.2)	82	(1.3)	41	(1.6)	6	(0.6)
2005	239	(1.1)	237	(0.2)	81	(1.4)	39	(1.6)	6	(0.8)
2003	235	(1.0)	234	(0.2)	77	(1.3)	34	(1.5)	4	(0.5)
MISSOURI										
2009	241	(1.2)	239	(0.2)	83	(1.2)	41	(1.8)	6	(0.7)
2007	239	(0.9)	239	(0.2)	82	(1.0)	38	(1.5)	5	(0.7)
2005	235	(0.9)	237	(0.2)	79	(1.3)	31	(1.3)	3	(0.5)
2003	235	(0.9)	234	(0.2)	79	(1.2)	30	(1.4)	3	(0.5)
NEW JERSEY										
2009	247	(1.0)	239	(0.2)	88	(1.1)	49	(1.5)	9	(0.8)
2007	249	(1.1)	239	(0.2)	90	(0.9)	52	(2.0)	9	(1.0)
2005	244	(1.1)	237	(0.2)	86	(1.1)	45	(1.7)	8	(0.9)
2003	239	(1.1)	234	(0.2)	80	(1.4)	39	(1.4)	5	(0.8)
VERMONT										
2009	248	(0.4)	239	(0.2)	89	(0.8)	51	(1.0)	9	(0.7)
2007	246	(0.5)	239	(0.2)	89	(0.7)	49	(1.3)	7	(0.6)
2005	244	(0.5)	237	(0.2)	87	(0.8)	44	(1.1)	6	(0.6)
2003	242	(0.8)	234	(0.2)	85	(1.1)	42	(1.2)	5	(0.5)

SOURCE: National Center for Education Statistics, Institute for Education Sciences. National Assessment of Educational Progress. This report was generated using the State Profiles.
http://nces.ed.gov/nationsreportcard/states/

TABLE A2. NAEP SCORE TRENDS: EIGHTH GRADE MATHEMATICS, 2003–2009

	Average Scale Score				Achievement Level					
	State		National Public		At or above Basic		At or above Proficient		At Advanced	
	Avg.	SE	Avg.	SE	Pct.	SE	Pct.	SE	Pct.	SE
COLORADO										
2009	287	(1.4)	282	(0.3)	76	(1.5)	40	(1.4)	10	(0.8)
2007	286	(0.9)	280	(0.3)	75	(1.0)	37	(1.2)	10	(0.7)
2005	281	(1.2)	278	(0.2)	70	(1.6)	32	(1.4)	6	(0.8)
2003	283	(1.1)	276	(0.3)	74	(1.1)	34	(1.3)	8	(0.8)
MISSOURI										
2009	286	(1.0)	282	(0.3)	77	(1.3)	35	(1.2)	7	(0.6)
2007	281	(1.0)	280	(0.3)	72	(1.5)	30	(1.3)	5	(0.7)
2005	276	(1.3)	278	(0.2)	68	(1.8)	26	(1.4)	4	(0.5)
2003	279	(1.1)	276	(0.3)	71	(1.4)	28	(1.2)	4	(0.5)
NEW JERSEY										
2009	293	(1.4)	282	(0.3)	80	(1.4)	44	(1.7)	14	(0.9)
2007	289	(1.2)	280	(0.3)	77	(1.4)	40	(1.6)	10	(0.7)
2005	284	(1.4)	278	(0.2)	74	(1.4)	36	(1.5)	9	(1.0)
2003	281	(1.1)	276	(0.3)	72	(1.2)	33	(1.3)	6	(0.7)
VERMONT										
2009	293	(0.6)	282	(0.3)	81	(0.8)	43	(0.9)	13	(0.8)
2007	291	(0.7)	280	(0.3)	81	(1.0)	41	(1.3)	10	(0.8)
2005	287	(0.7)	278	(0.2)	78	(1.0)	38	(1.1)	9	(0.7)
2003	286	(0.8)	276	(0.3)	77	(0.9)	35	(1.1)	7	(0.7)

SOURCE: National Center for Education Statistics, Institute for Education Sciences. National Assessment of Educational Progress. This report was generated using the State Profiles.
http://nces.ed.gov/nationsreportcard/states/

TABLE A3. NAEP SCORE TRENDS: FOURTH GRADE READING, 2003–2009

	Average Scale Score				Achievement Level					
	State		National Public		At or above Basic		At or above Proficient		At Advanced	
	Avg.	SE	Avg.	SE	Pct.	SE	Pct.	SE	Pct.	SE
COLORADO										
2009	226	(1.2)	220	(0.3)	72	(1.3)	40	(1.5)	11	(0.8)
2007	224	(1.1)	220	(0.3)	70	(1.3)	36	(1.4)	9	(1.0)
2005	224	(1.1)	217	(0.2)	69	(1.3)	37	(1.6)	8	(0.9)
2003	224	(1.2)	216	(0.3)	69	(1.4)	37	(1.7)	9	(0.9)
MISSOURI										
2009	224	(1.1)	220	(0.3)	70	(1.6)	36	(1.2)	8	(0.8)
2007	221	(1.1)	220	(0.3)	67	(1.3)	32	(1.3)	7	(0.6)
2005	221	(0.9)	217	(0.2)	67	(1.2)	33	(1.3)	7	(0.8)
2003	222	(1.2)	216	(0.3)	68	(1.4)	34	(1.4)	8	(0.7)
NEW JERSEY										
2009	229	(0.9)	220	(0.3)	76	(1.2)	40	(1.3)	10	(0.9)
2007	231	(1.2)	220	(0.3)	77	(1.3)	43	(1.5)	12	(0.9)
2005	223	(1.3)	217	(0.2)	68	(1.6)	37	(1.5)	10	(0.8)
2003	225	(1.2)	216	(0.3)	70	(1.4)	39	(1.7)	11	(1.0)
VERMONT										
2009	229	(0.8)	220	(0.3)	75	(1.0)	41	(1.0)	12	(0.9)
2007	228	(0.8)	220	(0.3)	74	(1.2)	41	(1.2)	11	(0.7)
2005	227	(0.9)	217	(0.2)	72	(1.3)	39	(1.2)	10	(1.0)
2003	226	(0.9)	216	(0.3)	73	(1.5)	37	(1.1)	8	(0.8)

SOURCE: National Center for Education Statistics, Institute for Education Sciences. National Assessment of Educational Progress. This report was generated using the State Profiles. http://nces.ed.gov/nationsreportcard/states/

TABLE A4. NAEP SCORE TRENDS: EIGHTH GRADE READING, 2003–2009

	Average Scale Score				Achievement Level					
	State		National Public		At or above Basic		At or above Proficient		At Advanced	
	Avg.	SE	Avg.	SE	Pct.	SE	Pct.	SE	Pct.	SE
COLORADO										
2009	266	(0.8)	262	(0.3)	78	(1.1)	32	(1.1)	2	(0.4)
2007	266	(1.0)	261	(0.2)	79	(1.2)	35	(1.5)	2	(0.5)
2005	265	(1.1)	260	(0.2)	75	(1.3)	32	(1.3)	3	(0.5)
2003	268	(1.2)	261	(0.2)	78	(1.3)	36	(1.6)	4	(0.8)
MISSOURI										
2009	267	(1.0)	262	(0.3)	79	(1.1)	34	(1.3)	3	(0.5)
2007	263	(1.0)	261	(0.2)	75	(1.1)	31	(1.2)	3	(0.3)
2005	265	(1.0)	260	(0.2)	76	(1.3)	31	(1.4)	3	(0.4)
2003	267	(1.0)	261	(0.2)	79	(1.1)	34	(1.5)	3	(0.4)
NEW JERSEY										
2009	273	(1.3)	262	(0.3)	83	(1.3)	42	(1.7)	5	(0.8)
2007	270	(1.1)	261	(0.2)	81	(1.0)	39	(1.5)	4	(0.6)
2005	269	(1.2)	260	(0.2)	80	(1.4)	38	(1.7)	4	(0.6)
2003	268	(1.2)	261	(0.2)	79	(1.4)	37	(1.3)	3	(0.5)
VERMONT										
2009	272	(0.6)	262	(0.3)	84	(0.7)	41	(1.0)	3	(0.4)
2007	273	(0.8)	261	(0.2)	84	(1.1)	42	(1.3)	4	(0.6)
2005	269	(0.7)	260	(0.2)	79	(1.0)	37	(1.2)	4	(0.4)
2003	271	(0.8)	261	(0.2)	81	(1.1)	39	(1.2)	4	(0.5)

SOURCE: National Center for Education Statistics, Institute for Education Sciences. National Assessment of Educational Progress. This report was generated using the State Profiles.
http://nces.ed.gov/nationsreportcard/states/

Appendix B: Methodology

Both the strategy for data collection and the analysis of data followed the methodology suggested by Glaser and Strauss's "grounded theory" for analysis of qualitative data (1967). Rather than starting with a hypothesis or theoretical framework and collecting data to test it, we began by collecting initial data and allowing those data and the themes that emerged from them to guide further data collection and analysis. Because the data and themes that initially emerged differed with the case study state, the direction and goals of data collection and analysis that ensued vary by case. After data collection and initial analyses were completed, the themes that emerged from the four case studies were compared. Theoretical frameworks that might be useful for understanding phenomena across the four cases were considered and selected on the basis of their goodness of fit with the observed data and emergent themes. The theoretical frameworks were then used as a new set of lenses for making sense of the observed data and themes within each case and for shaping how the cases were written.

We began the cases by conducting a broad scan of past and current state policies that support professional development work in each state. We conducted document reviews to piece together an understanding of the current set of professional development policies, strategies, and structures that are in place and how they came to be established. Documents included, but were not limited to, state statutes, state education agency rules, regulations, guidelines, standards documents, description of initiatives and programs, vision statements, speeches, Race to the Top applications, press releases, meeting minutes, budgets, required administrative documents, professional development event schedules, resources, tools, district and school professional development and induction plans, professional development event agendas, presentations, materials, organization descriptions, research and evaluation reports, news reports, newsletters, and other published matter.

We interviewed a range of officials and stakeholders in each state (see Table B1). Through initial interviews with state education agency staff, we sought to gain a basic understanding of the current set of policies, strategies, and structures that were in place in each state as well as derive an historical perspective on their evolution or establishment. We used these initial interviews to obtain leads for further investigation of state, regional, or local professional development policies, strategies, and structures. We also received referrals from other professional development organizations and leaders, as well as referrals supplied by the study sponsors (Learning Forward staff and associates), to guide our subsequent data collection sampling.

Through additional interviews, observations, and document analysis, we both broadened and deepened our understanding of the professional development landscape within each state (professional development vision of state leaders, significant policy actions of the state education agency, significant actors—within the state agencies and

outside of them—who contributed to the state's professional development landscape, and significant professional development programs and initiatives inside and outside of state policy control).

From the emerging evidence from our data collection, the investigation of each state's professional development landscape was increasingly focused on the specific policies, strategies, and structures that seem to be at the heart of the state's professional development work over the last decade and the conditions that supported these efforts. We collected additional data and conducted more interviews and observations to test our hypotheses about the centrality of these specific policies, strategies, and structures, which helped to confirm or disconfirm our emerging understanding about their roles in each state's professional development landscape.

We also sought to make connections among the core policies, strategies, and structures we were investigating with information we collected about local professional development practice (in districts and schools). However, our research design was fairly limited in its ability to ascertain the impact on quality or "effectiveness" of professional development activity at the local level. We did not have the time, resources, or proximity to our case study sites to interview a large sample of building principals and teachers, or to conduct systematic fieldwork to observe the quality and effectiveness of professional development activities. Rather, the focus of our fieldwork was primarily to construct an understanding about the key policies, strategies, and structures that seemed to be supportive of a high level of participation in professional development or participation in research-based and effective professional development approaches.

TABLE B1. METHODOLOGY: INTERVIEWS AND OTHER DATA COLLECTION ACTIVITIES BY STATE

State	Office/Role	Number of Personnel Interviewed
COLORADO*	Colorado Department of Education (CDE)	9
	Board of Cooperative Education Services Directors or PD directors (out of 21 BOCES), including BOCES executive director	9
	Professional development organization directors	3
	District program coordinators	4
	Principals	1
	TOTAL INTERVIEWS	**26**
MISSOURI	Missouri Department of Elementary and Secondary Education (DESE)	4
	Regional Professional Development Center directors (out of 11 centers)	11
	Regional Professional Development Center assistant directors	4
	District superintendents	3
	District assistant superintendents	1
	Principals	6
	Teachers	6
	Higher education faculty	3
	TOTAL INTERVIEWS	**38**
	Satellite Academy Program facilitators (focus group)	45
	Regional Professional Development Center visits (1 urban, 1 rural)	2 visits
	Principals Summer Institute (1 week)	1 visit
	Teacher Academy introductory regional meeting (65 teachers)	1 visit
	Principals Academy graduation exhibition (140 principals)	1 visit
	Principals Academy introductory session (80 principals)	1 visit

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Note: Other data collection activities included document review. Documents cited in the cases are referenced at the end of the report.

* Because of a late start in data collection for this state, observations and visits were not conducted

State	Office/Role	Number of Personnel Interviewed
NEW JERSEY	New Jersey Department of Education	12
	District superintendents	1
	District assistant superintendents	7
	Principals	6
	Teachers	5
	Higher education faculty	7
	New Jersey Education Association officers	2
	Professional development organization personnel	6
	TOTAL INTERVIEWS	**46**
	School visits	5 visits
	New Jersey Professional Development Network monthly meeting (13 district curriculum directors)	1 visit
	Preschool Research Network monthly meeting (15 school and district leaders)	1 visit
	Professional learning communities training session (75 teachers and district administrators)	1 visit
	New Jersey Professional Teaching Standards Board meeting (12 board members, one consultant, two DOE officials)	1 visit
	New Jersey Professional Development for School Leaders Advisory Committee monthly meeting (school leaders, DOE officials, community representatives)	1 visit
	DOE workshop for PLC lab schools (50 principals and other school leaders)	1 visit
VERMONT	Vermont Department of Education	9
	District superintendents	2
	District assistant superintendents	2
	Principals	6
	Teachers	5
	Higher education faculty	7
	Educational Service Center directors (out of 6 ESCs)	4
	Professional development organization leaders	6
	TOTAL INTERVIEWS	**41**
	School visits (including 2 panel interviews with teachers and principals)	2 visits
	Educational Service Center monthly meeting (6 ESC leaders, 6 school leaders, 4 SRI coaches)	1 visit
	Teaching All Secondary Students (TASS) monthly meeting	1 visit
	Vermont Center for Activity monthly meeting (coaches)	1 visit
	Educational Testing Services (ETS) Formative Assessment three-day training session (“Keeping Learning on Track”)	1 visit

Appendix C: Professional Development Policy Provisions in Four Case Study States

Feature	COLORADO	MISSOURI	NEW JERSEY	VERMONT
Standards for PD	None, other than guidelines for PD for license renewal (originated with 1991 CO Educator Licensing Act, recently revised by SBE)	• MO Guidelines for Student Success (updated 2006) connected to NSDC/LF Standards includes Guidelines for Professional Development Committees • District PD plan overseen by the CSIP process	• 2007 NJ Professional Development Standards (connected to NSDC/LF standards)	2004 Vermont Standards Board for Professional Educators (VSBPE) adopted the NSDC/LF standards for professional development for license renewal only (individual teacher level)
State Resources for PD	• Funding for PD embedded in other state initiatives (Closing Achievement Gap; Read to Achieve technical assistance) and PD activities of units across CDE • Modest funding for BOCES ($1,000/year) recently cut • Funding for Regional Service Areas (2009–10) cut in 2010	• 1993 Outstanding Schools Act: mandates 1% state and 1% local allocation of funds for PD • 1993 state established and funds RPDCs (direct funding cut in 2000)	Almost all resources for PD come from federal sources	• Limited direct state funds for a handful professional development programs (most funding for PD from Title I, II; schools identified as in need of improvement must allocate at least 10% of improvement funds on PD)
State-level Professional Teaching Standards Board (or similar board)	• State Board of Education, with Educator Standards Board serving advisory role, oversees licensing and professional standards for teachers and administrators	• State Board of Education oversees licensing, professional standards, and school accreditation	New Jersey Administrative Code section 6A:9-15 (1999) NJ Professional Teaching Standards Board (PTSB) provides oversight of PD	VSBPE oversees local and regional standards boards, which approve teacher and administrator PD plans for license renewal; reviews and approves portfolios for license renewal

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Feature	COLORADO	MISSOURI	NEW JERSEY	VERMONT
District or school-based PD committees required (or similar body, e.g., local standards board)		• 1985 Excellence in Education Act established school-based PD committees, comprising teachers, and defined the responsibility of PDCs	• School PD teams (three teachers, one administrator) • District PD committee (four teachers, two administrators) combine school plans • County PD board (seven teachers and eight other stakeholders) approves district PD plans	• Regional and local standards boards
Individual PD plans required for all teachers		• Individual PD plans required, associated with mentoring/induction for beginning teachers and with license renewal • Monitored through the MSIP standards	• Individual PD plans required as part of teacher evaluation	• Individual PD plans associated with license renewal process
Other state codes and guidance documents related to PD		• 2005 SB 287 PD must be tied to 13 areas of critical need; commissioner of education as distributor of PD funds		
State-administered PD programs and initiatives	• Standards implementation (Office of Teaching and Learning) • Other units within CDE also implement limited PD and technical assistance – Colorado Reading First (ended in 2008–09) was federally funded; – Positive Behavioral Intervention and Support and Response to Intervention also federally funded through Title II and IDEA – Math Science Partnerships funded through Title II	• 1985 Principal-Administrator Academy (Satellite Administrator Program) • Teacher Academy begun in 2004 • Professional learning communities program – Reading First (ended in 2008–09) was federally funded – Positive Behavior Support and Response to Intervention federally funded through Title II and IDEA	Federally funded: – PTSB professional development plan information sessions and speaker presentations (up to 2009) – 2009–10 PLC lab schools trainings – 2009–10 Turnaround Schools Professional Development Network – Collaborative assessment for planning and achievement – 2010 Math Science Standards training – Reading First, Early Reading First, Even Start Family Literacy Program	• Schools in need of improvement required by state to establish collaborative processes and teacher learning communities; monitored by coaches and state review teams • Vermont Professional Development Network Federally funded: Vermont Math Initiative, Vermont Reading Initiative, Vermont Science Initiative, Vermont Higher Education Collaborative, Formative Assessment Project, Reading Recovery, Positive Behavior Support, Response to Intervention

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Feature	COLORADO	MISSOURI	NEW JERSEY	VERMONT
State department units and staffing of PD	• PD administered by specific units: Office of Teaching and Learning; Exceptional Student Leadership; Literacy Grants and Initiatives; Education Technology and Innovation; Gifted and Talented; Online Learning; Language, Culture and Equity; and Prevention Initiatives • New Office of Educator Effectiveness to provide coordination for PD beginning in late 2010	• PD administered through Office of Quality Schools and Office of Educator Quality	• Professional Standards and Licensing and Higher Ed Collaboration • Other divisions of NJ DOE also offer PD	• Coordinator of professional development oversees state PD initiatives • Other state units also provide PD (e.g., Standards and Assessment, Integrated Support for Learning)
PD requirements for license renewal	• 90 hours every five years required to renew professional license • Guidelines for PD govern content of PD that qualifies for license renewal	• Professional license: additional 15 hours PD per year *or* two of following: 10 years' experience, NBPTS certification, M.A. degree)		• To obtain or renew professional license, teachers write up individual PD growth plans, meeting Five Standards for VT Educators • Nine units (15 hours per unit) required every seven years • Every seven years, teacher presents portfolio to local standards boards for approval
Role of PD in teacher evaluation		• Component of Missouri Evaluation Model, tied to teacher licensure and school accreditation	• NJ Admin Code 6A:9-15.2 100 hours of PD required every five years; PD content determined by teacher's PD plan, connected to district and school PD plans, as well as state PD standards; monitored through teacher evaluation system and districts oversee compliance	

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Feature	COLORADO	MISSOURI	NEW JERSEY	VERMONT
Role of PD in career paths and ladders	• 1991 CO Educator License Act: Master Teacher License, extends professional license to seven years; obtained either through NB-PTS certification or completion of master certification portfolio			
Induction/ mentoring policies or programs	• 1991 CO Educator License Act: all districts required to provide induction program • Required program approval process through CDE every five years • State guidelines for induction programs • Induction required for advancement to professional license	• 1985 Excellence in Education Act: beginning teacher assistance programs: each district to include PD plan for teacher's first two years of teaching • 2005: 30 hours PD/ year, two years' mentoring • 2008: state mandates mentoring program, includes mentoring program standards	• NJ Admin Code 6A:9-8.4: new teachers begin PD plans within 60 days of assignment; induction and mentoring required to receive professional certificate • At least 30 weeks of mentoring required for traditional candidates; 34 weeks for alternate route candidates • District PD committees develop mentoring plans, approved by county superintendent	• State Board of Education's School Quality Standards section 2120.4 (c) requires mentoring as part of school PD system, and VT Professional Standards Board outlines guidelines for mentoring, but no funding or enforcement of requirement
State monitoring of PD quality	• "TELL Colorado" biennial survey (teaching and learning conditions survey), initially funded by state appropriations, to be funded in future by Title IIA funding	• DESE monitors number of state schools served by RPDC PD programs; satisfaction surveys by participants • MSIP accreditation process monitors overall school improvement including PD standards • Professional Development Implementation Audit	• Up to 2008, SBE required PD providers be registered with the state • County boards evaluate and approve district PD plans • State uses Quality Single Accountability Continuum (QSAC) to monitor and evaluate systems for school improvement, as well as PD quality	• None for state programs, only for Title I and II federal funds

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Feature	COLORADO	MISSOURI	NEW JERSEY	VERMONT
Support for National Board Certification	• In 2009–10, 200 scholarships (first 100 teacher applicants per year); must apply for federal $1,000 scholarship to be eligible to apply for $1,000 state scholarship • $1.3 million in ARRA stimulus funds used to provide monetary incentive for NBCTs to remain in public schools • Second stipend of $3,200 for those teaching in schools listed as low performance or unsatisfactory on the 2007 School Accountability Report 478 NBCTs in 2009 (75 new in 2009)	Administers $1,250 federal subsidy for first-time applicants (half of the $2,500 application fee) 598 NBCTs in 2009 (106 new in 2009) (Incentives provided by districts vary, ranging from 5% of annual salary for life of the certification to $8,000 per year in Park Hill School District)	Administers $1,250 federal subsidy for first 175 candidates (funded through combination of state and federal funds); some districts supplement 198 NBCTs in 2009 (24 new in 2009)	• NBCT portfolio may be used for license renewal portfolio once 121 NBCTs in 2009, 7 new in 2009
Role of PLCs in state policy for PD or school improvement	• School teams required as part of Response to Intervention model; RTI plans required for all districts receiving IDEA and state special education funds Collaborative models encouraged in schools that are recipients of CTAG or SIG funding, and schools that are part of state's PBIS initiative	PLCs encouraged through PD standards but not mandated or enforced State-supported PLC project (300 schools since initiative began in 2003); state provides comprehensive ongoing training, technical assistance, and support through the nine RPDCs across the state; supports regional PLC state personnel housed in RPDCs	PLCs encouraged through PD standards but not mandated or enforced PLC Lab Schools initiative (federally funded through Title II) supports 33 schools engaged in PLC formation; monitors progress of PLCs through NSDC/LF's Standards Assessment Inventory, to assess degree of fidelity to NSDC/LF PD standards; state also provides resources, tools, PD, and access to PLC experts to all schools to support local PLC formation	• Collaborative processes required for all schools not meeting AYP • Teacher learning communities required for schools in third-year corrective action; monitored by coaches and state review teams