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State Strategies for Building Capacity in Education: Progress and Continuing Challenges

Dianne Massell

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Abstract

This report examines capacity-building strategies used in eight states (California, Colorado, Florida, Kentucky, Maryland, Michigan, Minnesota, and Texas) and analyzes their promises and continuing challenges.

Disciplines

Education

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Diane Massell

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Biography

Diane Massell is a co-principal investigator of the multi-state study, "Education Policy Reform: From Congress to the Classroom." Her other areas of research include the process and politics of state content standards and state and local factors influencing performance-based assessment. She co-authored the CPRE research reports, *Persistence and Change: Standards-Based Reform in Nine States* and *Ten Years of State Education Reform, 1983-1993: Update with Four Case Studies*, and she co-edited and authored a special issue of *Education and Urban Society,* entitled "Setting National Content Standards."

Acknowledgments

Executive Summary

Over the past decade or more, state policymakers have concentrated on putting the architecture of standards-based reform in place: setting challenging academic content and performance standards for all students; and instituting compatible tests, incentives, and accountability systems to reinforce these ambitious outcomes. Many states and districts also have restructured their governance systems to delegate more authority to local decision-makers.

But clearly defined learning goals and accountability systems do not by themselves yield continued improvement in student learning. Some states with high standards and related assessment and accountability programs in place are finding that their early gains in student achievement have plateaued in certain academic areas. Furthermore, achievement gaps between students from majority groups and those from minority groups continue to exist, and students with disabilities still have poorer educational outcomes than other students.

Acknowledging that clear standards and strong incentives alone are not sufficient to dramatically change teaching and learning, policymakers and policy analysts have started to talk about and implement "capacity-building" strategies. "Capacity" in this policy context refers to the wherewithal needed to translate high standards and incentives into effective instruction and strong student performance. This study examines capacity-building strategies used in eight states and analyzes their promise and continuing challenges. The eight states

represent various approaches to systemic improvement. They include California, Colorado, Florida, Kentucky, Maryland, Michigan, Minnesota, and Texas. We asked the following questions: What are common patterns in the ways states currently build capacity for education reform, and why? What are promising directions, as well as challenges, that emerge from these policy strategies? What related matters should policymakers consider when they use these strategies?

Defining Capacity. Building the capacity for reform is not well understood. Many people tend to think primarily, and sometimes exclusively, of the need to improve teacher knowledge and skills. This is an essential ingredient for changing educators' practice, but the capacities and strategies for building them need to be considered more systemically. Effective classrooms also require quality instructional materials and students motivated and ready to learn.[1] And, classrooms exist within larger contexts—the school, the school district, and the state education system—that provide educational direction and leadership and influence social norms as well as access to resources and knowledge.[2]

Study Methods. Our research team visited the eight states in our study during the 1996-97 academic year. We used structured interview questions to talk with approximately 19 policymakers in each state, including the chief state school officer, legislative leaders, state department of education personnel, and teacher union and business representatives, among others. We supplemented these interviews with background documents to verify and support

factual statements and to extend our analysis.

Findings: Four Common Strategies. All eight states in our sample addressed, to some degree, four common areas of capacity. But they varied in what capacities they emphasized and in the kinds of policy mechanisms they used. California, for example, invested heavily to reduce class size in the primary grades. Some states emphasized capacity-building more than others. Kentucky's efforts were exceptional for the diversity of its approaches, for the time and resources devoted to capacity-building, and for its strong curricular guidance and support. Kentucky's relatively keen emphasis on capacity is explained in part by the comprehensiveness of its initial reform legislation, which covered everything from school finance to student health. Kentucky's reforms have enjoyed relative stability over eight years, and the small size and homogeneity of the state made developing capacity-building strategies more manageable. In contrast, other states in our sample were often in early or transitional phases of reform, still developing policy structures or coping with political turmoil.

Despite their differences, the eight states in our sample shared four common capacity-building strategies: building external infrastructure to provide professional development and technical assistance, setting professional development and training standards, providing curriculum materials, and organizing and allocating resources.

1. State policymakers **established, supported, or relied upon an infrastructure for professional development and technical assistance outside the state department of education.** State education departments have moved from their traditional regulatory and compliance roles, responding to criticism that such activities stifled local innovation and did little to build improvements in practice.[3] They have begun to offer greater assistance to the teaching and learning process, but *not* by expanding staff roles as direct service providers. Instead, states relied upon traditional external providers such as intermediate education units or regional centers. States also drew upon the expertise and support of state subject-matter associations or other professional organizations; developed professional networks of teachers, schools, and districts; and encouraged universities to provide assistance to public elementary and secondary schools. In addition, state policymakers often relied upon large districts to provide their own professional development, asserting that these districts had more staff capacity than the state department of education. Indeed, state departments of education turned to these providers in part because of constraints on their own human and fiscal resources. This strategy reflected a prevailing wisdom that people who are in regular and close contact with teachers and schools are in a better position to offer advice and assistance.

We found that when state education departments did become more directly involved in providing support and technical assistance, their services were often **targeted on the lowest performers** as designated by the accountability system. Similarly, states made low-performing, low-capacity schools or districts a priority for the external groups providing assistance.

2. In addition to the steps state policy-makers took to nurture the *supply* of technical assistance and professional development, they were increasingly concerned about the *quality* of professional development for teachers. **Adopting standards for professional development was a common strategy for improving quality. Policymakers in some states also focused on revising pre-service training, primarily through new accreditation plans for teacher education programs and through revisions in teacher licensure and certification.** This focus was motivated in part by the need to convince key players, such as governors and legislators, of the value and necessity of professional development. These players have often expressed skepticism about the worth of professional development, seeing it as of little merit or as a payoff to special interests.

3. Standards-based reform calls for states to set challenging goals of *what* students should know and be able to do, and for local districts and states to determine *how* best to meet these objectives. In response, most states developed

standards documents at a fairly broad level of detail. These documents did not provide a day-to-day curriculum for teachers to follow. This approach satisfied political and legal constraints that prohibited many states from mandating local curriculum. As states have implemented their reform initiatives, however, they have been asked to play a more active role in helping local educators find or develop curriculum materials that addressed the standards. **To fill the curriculum gap, states frequently developed more specific curriculum frameworks or other supporting documents with examples of how the standards could be applied in instructional practice. States also established resource banks of materials and instructional tools and encouraged relationships with national curriculum projects or programs. There was large variation in the degree and extent of state guidance on curriculum reform, and some states refused to identify or advise schools and districts about curricula best suited to state standards.**

4. **Each of the eight states required some form of school improvement planning, and several states viewed school improvement planning as a critical component of their reform initiatives. Policymakers saw school improvement planning as a way of linking bottom-up decision-making with the top-down goals of standards-based reform. School improvement planning was intended as a vehicle, like site-based decision-making, for asserting schools**

**as important actors in local district
decision-making processes.** This kind
of planning intends for schools to
identify their needs in light of reform
goals, then to reallocate the necessary
money, time, personnel, professional
development, or other resources as
needed.

Promise. These four strategies for building
capacity hold promise. A decentralized and
diverse infrastructure of providers,
especially if the players are strong, may help
institutionalize and stabilize reform and sites
of capacity-building. Other research
suggests that improvements in teaching and
learning are more likely to result when
teachers and schools receive support that is
tailored to their settings and is longer-term
than the typical workshop. Individuals and
organizations that work directly with schools
may be better positioned to offer the kind of
specific and sustained support that can yield
real improvements. Research on the kinds of
professional networks promoted by state
policymakers suggests that networks can
offer teachers access to new knowledge, can
foster a strong sense of professionalism, and
can provide collegial opportunities outside
of their own schools to see other kinds of
practice and interaction.

State efforts to provide more curriculum-
specific support is also heartening. Our
research, and the work of many others, has
documented the challenges that teachers and
schools face in working to meet performance
standards. Teachers and administrators want
and need support in this area. The
importance of curriculum-specific support
has been underlined by research studies
demonstrating that professional development

closely connected to what students learn can
be a powerful lever for school improvement
and far more influential than training
sessions based on vague and ambiguous
reform principles. Such assistance can raise
student achievement and lead to greater
changes in teaching practice.

Finally, state attention to the quality of
professional development and pre-service
training, as expressed in new professional
development standards, may indicate a
greater willingness on the part of
policymakers to consider stronger designs
and investments in this area. It also reflects
an interest in directing professional
development toward activities that foster
substantial improvements in teaching and
learning.

Continuing Challenges. The strategies
common across our eight states raise
questions about potential problems. We
identified five challenges related to these
strategies:

1. **The capacity of the infrastructure
   outside the state departments of
   education.** States turned to external
   infrastructures and groups in part
   because of the philosophy that those
   closer to the field are better positioned to
   provide regular, sustained, and relevant
   assistance to teachers and schools and
   partly as a way of coping with the
   limited capacity of state education
   departments. Yet, policymakers should
   also consider how much and what kind
   of assistance these external organizations
   can realistically provide. Many of these
   groups do not have sufficient human or
   fiscal resources to meet the needs; staff

are often stretched thin and are expected to support an impossibly large number of teachers and schools. Further, policy-makers should consider whether these external agents have the knowledge and skills needed to provide high-quality assistance.

2. **Translating numbers into action.** Reform advocates believe that student performance data will drive change in schools and districts. The accountability system will provide feedback on school performance, the theory goes, which will be used in school improvement planning. The system of varying rewards and sanctions will further motivate teachers and schools to improve. This account-ability model requires that the per-formance data are transparent—that practitioners understand what the results mean—and that teachers and admin-istrators have the knowledge and skills to translate performance data into appropriate action. But the evidence suggests that the performance data are often *not* transparent and readily understandable, and that educators often do *not* have the requisite knowledge and skills to translate them into changes in school practice.

3. **Building capacity for schools in the middle.** State policymakers often targeted their resources on the lowest-performing schools and districts, in part as a way of coping with their limited staff and resources. But how can schools in the middle of the performance distribution gain the knowledge and skills they need to make progress? They

too often have a long way to go to meet state performance standards.

4. **The importance of continuity in capacity-building.** The states have made considerable progress in developing and adopting academic standards, but these efforts have not gone unchallenged, and future challenges are likely in store. How can teachers and schools develop their knowledge and skills for reform when leaders lack consensus and the goals of reform are unclear? Which way should teachers and schools move? Will teachers and schools be penalized for moving in one direction and not another if approaches to teaching and academic content shift? Maintaining some continuity and stability during periods of conflict is important to sustaining and continuing capacity-building efforts.

5. **Incentives to build capacity.** Strategies for building capacity must take into account people's motivation to participate in capacity-building activities. Policy design can address one piece of the complex puzzle of human motivation, but it can be an important piece. The capacity-building strategies common to the eight sample states did not always offer sufficient incentives for their target clientele—teachers, administrators, and students—to engage in serious capacity-building efforts. We identified potential weaknesses in five areas: the incentives to heed professional development standards; the incentives for teacher training institutions to improve quality; the incentives for

teachers to pursue professional development; student incentives; and incentives to engage in the school improvement planning process.

Policy Considerations. We encourage policymakers to consider the entire education system when designing their capacity-building strategies. Our study's framework of seven classroom and organizational capacities may provide a useful checklist. In conducting such a survey, we recommend keeping in mind the following questions:

- Does the state's regional infrastructure have adequate resources, knowledge, and people-power to provide professional development, technical assistance, and other assigned responsibilities? Do the regional institutions use high-quality professional development and technical assistance models?

- Does the state policy system send clear and coherent signals to schools and teachers about building needed knowledge and skills? Does the state provide sufficient guidance about curriculum and instructional materials?

- Can the state play a role in encouraging and brokering research on curriculum and instructional practices that improve the performance of *all* students?

- Do the state's capacity-building initiatives meet the following research-supported criteria: Are the initiatives well-suited to individual school settings? Are the initiatives extended over time, providing opportunities for feedback and

reflection? Are the initiatives reform-linked and curriculum-specific?

- Does the state or do school districts have a strategy for helping schools translate information generated by state accountability and assessment programs into improved practice?

- How can the state increase capacity to assist schools in the middle of the performance distribution?

- Do the state's initiatives provide adequate incentives—for students, teachers, schools, districts, institutions of higher education, and other external organizations—to build capacity that is aligned with standards-based reform? Are there incentives to bring *all* students to state performance standards?

Introduction

Why Look at Capacity?

Standards-based reform is the preeminent policy framework used today by state and federal officials to improve teaching and learning in America's classrooms. Standards-based reform generally consists of three key components:

- a unifying vision and goals that include ambitious curriculum and performance standards for all students;

- coherent policies that reinforce these ambitious outcomes; and

- a restructured system of governance that gives local decision-makers more control to reach the student performance goals (Smith and O'Day, 1991).

While the design and substance of the reforms vary substantially across policy contexts, these three elements have strongly shaped the business of public education policy for over a decade (see Fuhrman and Massell, 1992; Massell and Fuhrman, 1994), persisting in states and districts despite political turbulence, turnover in leadership, and often voluminous debate about the nature and purpose of these new academic standards (Massell, Kirst, and Hoppe, 1997). The American Federation of Teachers declared that 49 states have adopted or are developing academic standards, and 46 states have or are planning assessments aligned with standards (American Federation of Teachers, 1997).

Standards-based reform is also strongly evident in three key pieces of federal legislation: Improving America's Schools Act (1994), which provides federal aid for poor students; Goals 2000 (1994), which provides financial resources to states and local districts to support standards-based reform; and the 1997 amendments to the Individuals with Disabilities in Education Act (1997). Indeed, the longevity of this reform strategy is remarkable in the history of public education policy, which is known to swing quickly in new directions whenever there are changes in political leadership or public criticism (Fuhrman, 1993).

Over the last decade or more, policymakers have focused their energies on putting the architecture of reform in place: the academic content and performance standards, the tests, the incentives, and the accountability systems. But, more recently, they have paid greater attention to building the capacity needed to achieve the higher standards. Policy analysts have used the idea of capacity to explain why simply having clear ideas about learning goals or high motivation does not always yield the hoped-for student learning (see, for example, Berman and McLaughlin, 1975; McLaughlin, 1987, 1991). Many states with high standards, assessments, and accountability programs are finding that early gains in student achievement have reached a plateau, and that gaps between poor, non-poor, majority, and minority student achievement persist. Results from the 1996 National Assessment of Educational Progress (NAEP), for example, showed that about 40 percent of students in poverty performed at or above the Basic proficiency level in fourth and eighth grade

mathematics, compared with more than 70 percent of non-poor students. About 30 percent of African-American and 40 percent of Hispanic students performed at or above the Basic level, compared with 75 percent of white students (Reese, Miller, Mazzeo, and Dossey, 1997). Similar disparities exist in science achievement (O'Sullivan, Reese, and Mazzeo, 1997).

To reach and maintain high standards, many support systems must be in place. "Capacity-building" has become a phrase used to acknowledge, at least verbally, that clear standards and powerful incentives are not enough to dramatically change teaching and learning (Cohen and Ball, 1996; Corcoran and Goertz, 1995; Goertz, Floden, and O'Day, 1995; O'Day, Goertz, and Floden, 1995). Nevertheless, the capacity needed for reform remains poorly defined and not well understood. Many people tend to think primarily, and sometimes exclusively, of the need to improve teachers' knowledge and skills. But the necessary capacities and strategies must be thought of more broadly, indeed we would say, more systemically. We have little knowledge about how the whole system can be effectively designed to meet the burgeoning needs of reform.

Two recent studies provide useful guidance in this regard. In a conceptual article on capacity, Cohen and Ball (1996) argue that we need to reconsider what we mean by capacity in the classroom. They propose that, in addition to teachers' knowledge and skills, effective classrooms require high-quality instructional materials and students and teachers who are motivated and ready to learn. Cohen and Ball follow the

arguments laid out by cognitive psychologists that say situations strongly influence how people behave, and the resources and people within the classroom context are significant factors in understanding the capacity needed to meet the goals of reform.

In a second study, Goertz, Floden, and O'Day (1995) argue that successful reform, in particular the positive effects of standards-based reform policies on instruction, also depends on the capacities of the organizations (schools, districts, and states) that surround the classroom. The authors describe dimensions of organizational capacity that include access to knowledge, organizational structure and resources, and leadership and norms. A teacher's ability to produce effective instruction, for example, might depend on factors such as the school's ability to support professional learning and collaboration within and outside the school or the way schools use human and fiscal resources to enhance instruction. State or district policies can facilitate or constrain the ability of schools and teachers to meet the goals set out under the banner of standards-based reform.

Thinking about the capacity of classrooms and of the organizations that support them led our study team to identify seven areas that may be vital to improving teaching and learning:

Classroom-Level Capacities:

1. Teachers' knowledge, skills, and dispositions;

2. Students' motivation and readiness to learn;

3. Curriculum material for students and teachers;

Organizational-Level Capacities (school, district, and state):

4. Number and kinds of people supporting the classroom;

5. Number and quality of social relationships;

6. Material (non-human resources); and

7. Organization and allocation of school and district resources.

Here we explore the extent to which state strategies for building capacity addressed these seven different areas.

Study Methodology

We conducted our research in eight states: California, Colorado, Florida, Kentucky, Maryland, Michigan, Minnesota, and Texas. We selected these states in part because they represent diverse approaches to standards-based reform, with different strategies and different traditions of centralized or decentralized control over education. For instance, Kentucky uses a broad array of state policy instruments to leverage standards-based reform, while Maryland focuses primarily upon assessments and accountability. All states would claim a strong culture of local control over education, but the boundaries between

state and local authority vary substantially. Colorado, Michigan, and Minnesota have a relatively stronger, and longer, tradition of local control than other states in our sample. Minnesota, for example, has only developed and administered its own state assessment in recent years, and even districts may use a different test. Kentucky, Florida, and Texas, at least historically, represent more centralized state authority and control, while California and Maryland fall into the middle of the spectrum. As we shall see, however, even the most centralized states have been making strides toward moving power to schools and teachers as well as to parents. Finally, we selected these eight states because of their variation in geographic region, urbanicity, racial and ethnic composition, wealth, and school district structure.

The eight states in our sample also differed by where they were on their timetables for phasing in reform. Kentucky and Maryland had implemented most of the elements of their basic standards-based reform designs and have made incremental changes over the years. Texas recently developed new content standards; the changes in its policies have also been gradual. This stands in stark contrast to California, which was an early pioneer in standards-based reform, but in the mid-1990s its primary instruments for change were completely dismantled and efforts began anew to create very different standards, tests, and other linked policies. States like Colorado, Florida, Michigan, and Minnesota began to phase in standards or assessments more recently, making their challenges of building capacity quite different from the states with more mature policies. (See Appendix A for the status of

standards and assessments in the eight states.)

Our research team visited the states during the 1996-97 academic year. We used structured interview questions in talking to approximately 19 policymakers in each state, including the chief state school officer, legislative leaders, state department of education personnel, and teacher union and business representatives (see Appendix B). In addition, we supplemented these interviews with background documents to verify and support factual statements and to extend our analysis. Members of our research team responded to a series of descriptive questions regarding state context and state instructional guidance policies and a series of analytic probes based on our conceptual framework for capacity. We used this information to identify patterns across the eight states (Miles and Huberman, 1984).

Contributions and Limitations

This study is important because there is little documentation in the research literature on state-level approaches to building the capacity of whole systems to improve teaching and learning. Instead, analysts have tended to consider specialized components rather than a more comprehensive sum of the parts. School finance experts, for example, consider funding levels and allocation formulas, while teacher specialists explore certification and professional development policies. We consider the system more broadly by considering the way policymakers addressed the seven capacities. Policymakers may find our framework to be

a useful tool when assembling their initiatives and developing a comprehensive plan for supporting reform.

We looked across our sample to see if there were any discernible patterns in the way states build capacity for educational reform. If so, an important question is why. What do trends suggest about the way policymakers conceive of capacity? We also explored the issues and challenges that emerge from policymakers' approaches to this subject. What should policymakers consider when they use these strategies? It is our hope that this report will help state policymakers analyze their strategies and will provide a first step toward a useful theory of building capacity.

The study, however, has its limitations. First of all, we looked only at eight states, and thus we cannot over-generalize our findings. Second, we cannot conclusively discuss the impact of these strategies on school improvement because we have not yet been in the field to explore the consequences of these approaches. Over the 1997-98 and 1998-99 academic years, we will be visiting districts in all eight states and schools and classrooms in four of the states to explore these and other issues. However, we discuss state policymakers' perceptions of the impact of these strategies on school improvement as well as the impact implied by other independent research studies and our own experiences as policy analysts. Finally, it should be noted that this is largely an effort to trace policy instruments and policy strategies and to look at issues of policy design. Policy design, of course, is but one component of change.

How that design is implemented and given life is essential to its success.

The Seven Elements of Capacity

We define capacity as the property of people, technology, and institutions to effectively promote teaching and learning. In our framework, we hypothesize that the ability of the system to produce effective teaching and learning requires some level of attention to the seven types of capacities we have identified. How can government policies and activities influence these classroom and organizational capacities? To answer this question, we must first discuss what we mean by the seven different capacities—three in the classroom and four in the larger school, district, and state environment. We will illustrate with examples of the kinds of policies that have been used in states to build these capacities. See Tables 1 and 2 for a quick overview of policies that have been used to address the seven different capacities.

Policy initiatives and activities can affect more than one capacity. For example, a summer workshop might be intended primarily to help teachers create and use new standards-based curriculum; however, secondary effects might include the development of new relationships between teachers or the creation of cadres of teacher leaders who provide professional development to other teachers. It is sometimes difficult to pinpoint exactly which capacity the different policies and practices impact. For simplicity's sake, we categorized efforts by their major function

unless multiple purposes were obvious. When we talk to districts, schools, and major providers in the next phase of our research, we may be able to produce a more finely textured portrait of the impact of these specific policy strategies and mechanisms on different capacities.

Classroom-Level Capacities and Policies

Teachers' Knowledge, Skills, and Dispositions. Standards-based reform requires teachers to know more about their subject, to teach in a more dynamic style, to respond to the knowledge and dispositions that their students bring into the classroom, to engage in continuous learning, and to assume new professional roles with site-based management and other activities. Leading reform advocates have argued that teacher knowledge of subject matter, the way different students learn, how diverse learning styles interact with subject matter, and teaching methods are critical elements of teacher effectiveness (Darling-Hammond, 1996; National Commission on Teaching and America's Future, 1996; National Board for Professional Teaching Standards, 1994). However, less than 75 percent of the teachers in the United States have a degree in the subject they teach, have studied child development, learning, and teaching methods, or have passed tests of teaching knowledge and skill (McMillen, Bobbitt, and Lynch, 1994). Teachers' dispositions toward their profession and their willingness to engage new ideas, to question, to test their ideas and practices, and to explore different approaches are also likely to be important (Cohen and Ball, 1996).

States rely upon many strategies to improve teachers' knowledge, skills, and dispositions. The most familiar, perhaps, is the state's role in setting minimum standards for those who enter the teaching profession. Policymakers often use certification, licensure, and relicensure requirements as well as regulations for the accreditation of teacher education programs. Among other things, these rules and regulations are intended to guarantee a level of competence among those who enter the classroom and motivate teachers to continue to build their knowledge and skills. Many states require teachers to earn continuing education credits for relicensure. In the climate of standards-based reform for students, states

are also revising the notion of higher and more explicit standards for teaching. California and Maryland created standards for the teaching profession. State policymakers in all eight sample states also developed professional development standards to improve the quality of these experiences. Florida hired a consultant to conduct a major review and evaluation of professional development in the state. The study will attempt to track state, district, and local staff development initiatives and their effects on teachers. It also will look at the implementation of training at the district and school level and will examine the relationship between student achievement and staff development.

Table 1 Policy Strategies for Building Classroom Capacity		
Teachers' Knowledge, Skills, and Dispositions	**Students' Motivation and Readiness to Learn**	**Curriculum Materials for Students and Teachers**
State education department staff providing direct support and technical assistance on demand.	Setting promotion and graduation requirements.	Creating curriculum frameworks and supplementary materials.
Creating a professional development infrastructure to support districts, schools, and teachers.	Rewarding student performance with scholarships and recognition.	Adopting policies governing development and use of curriculum materials.
Involving educators in curriculum, assessment, and other policy activities.	Creating social services and pre-kindergarten programs.	Creating resource banks of curriculum materials and other instructional materials.
Brokering information for districts, schools, and teachers.		Supporting school adoption of national instructional programs.
Setting professional development standards, teaching standards, training standards, licensure, and certification requirements.		

Table 2 Policy Strategies for Building School, District, and State Organizational Capacities			
Quantity and Types of People Supporting the Classroom	**Quantity and Quality of Interaction Within and Among Organizational Levels**	**Material Resources**	**Organization and Allocation of School and District Resources**
Restructuring authority and control relationships (for example, school-based management or decision-making).	Changing class size.	Investing in technology.	Requiring schools and districts to allocate resources according to school improvement plans or through site-based management or decision-making.
Creating or supporting professional networks for teachers, schools, or districts.	Using program regulations or funding to require certain staff configurations.	Upgrading or expanding facilities.	Using market pressures, such as school choice and charters, to allocate resources in the educational system.
Changing climate of failing schools by dismissing staff or transferring staff or students.	Setting district personnel requirements (limiting administrator-to-student ratios or specifying positions, such as curriculum specialists).	Setting aside funds for districts, schools, or teachers to select their instructional materials.	Consolidating categorical funds.
Imposing new leadership (such as state takeover of failing schools or districts).			Changing allocation requirements for state and federal funds.

Other strategies for improving teachers' knowledge abound. State departments of education also provide or host professional training for teachers. For instance, Colorado sponsored annual standards and assessment conferences and Kentucky provided training for portfolio assessment. Many state education departments used the creation of standards and assessments as an opportunity to engage teachers in activities that will enhance their knowledge and skills. Teachers in Maryland and Kentucky, for example, were used extensively in the scoring of state assessments. State education department staff also offered training upon request from local schools or districts, although this was a less frequent occurrence. More commonly, state staff served as conduits for information and support. For instance, Florida's Office of School Improvement brokered resources, coordinated training for low-performing schools, provided research and information services, and maintained databases on successful programs and practices. Finally, states created or encouraged the develop-ment or use of groups external to the state department to provide professional support for teachers. States in our sample created, supported, or simply relied upon regional assistance centers and intermediate education units, professional networks of educators, professional associations, and universities to build teachers' knowledge and skills for reform.

Student Motivation and Readiness to Learn. Teachers' work in the classroom requires an implicit contract with students: students have to be both willing and able to engage in the learning process. But the chaos in many students' lives caused by hunger, poverty,

violence, homelessness, and lack of adult supervision drains them of motivation and readiness to learn. For example, nearly one-fifth of all children are living in poverty, a proportion that is much higher for African-American and Hispanic minorities than for whites and for female-headed households compared to two-parent families (Office of Educational Research and Improvement, 1991). Another aspect of motivation is tied to the linkage between education reform and work or postsecondary education. Many argue that students do not have sufficient incentives to do well with the standards-based curriculum, since achievement on state assessments aligned to those standards is largely ignored in college admissions and hiring processes. Improving students' motivation and readiness to engage in learning is a critical component of knowledge production within the classroom (Cohen and Ball, 1996).

Policymakers deployed a number of strategies for improving students' motivation and readiness to learn. Pre-school programs akin to Head Start were widespread, and states such as California and Kentucky invested heavily in programs to improve and coordinate social services with K-12 education. California's Healthy Start Initiative, for example, provided comprehensive services near schools in high-need areas and provided grants for school-based and school-linked support services. An integral component of Kentucky's 1990 education reform law included Family Resource/Youth Service Centers.

Another strategy was to create incentives for students to do well in school. Minnesota's

postsecondary enrollment option allowed
students who do well in high school to take
college courses during their senior year, thus
saving time and money. Florida's new
Bright Futures Scholarship Program paid
tuition to Florida public or private
postsecondary institutions based on
grade-point average as well as SAT/ACT
scores. Finally, states used promotion and
graduation requirements as incentives. In
some but not all cases, a certain level of
achievement on a state or local assessment
was required.

*Curriculum Material for Students and
Teachers.* Many analysts recognize that
curriculum materials alone are inadequate to
revolutionize teaching and learning. This
was amply demonstrated by the efforts of the
National Science Foundation to upgrade the
quality of mathematics, science, social
studies, and other textbooks between the
1950s and 1970s, where lack of public
acceptance, lack of teacher understanding,
and other factors weighed heavily against
long-term and successful use of these
materials developed by academic experts.

But high-quality materials are nevertheless a
necessary if not sufficient implement for
change. Sharp criticism of the quality of
curriculum materials has been a persistent
theme over the last 25 years. Textbooks,
particularly, have been denounced as a
boring compilation of isolated facts covering
a gamut of topics, lacking depth, and asking
students to do little more than rote
memorization (see Massell and Kirst, 1994;
Tyson-Bernstein, 1988). Indeed, the lack of
such quality and the emphasis of most
textbooks on skimming through many topics
in a general and dull way, were a major

impetus for the National Council of
Teachers of Mathematics (NCTM) to begin
setting content standards. NCTM wanted
commercial publishers to use their standards
as a guide (Massell, 1994). It was hoped
that content standards developed by other
national subject-matter associations in the
early- to mid-1990s and by the states would
similarly influence the publishing industry.
Despite some responsiveness by the
industry, many teachers still feel that the
kinds of curriculum they need to meet the
goals of standards-based reform are
unavailable (Massell, Kirst, and Hoppe,
1997).

California, Florida, and Texas have long
used statewide adoption processes backed by
state financial assistance for textbooks and
other curriculum materials. Other states like
Kentucky have recommended lists of
textbooks, but do not provide commensurate
incentives. State content and performance
standards, of course, are a major mechanism
used today to provide curriculum guidance
along with frameworks and other
supplemental materials intended to provide
more specific assistance to teachers. States
are using these documents to guide the
development of state assessments and/or the
adoption of curriculum materials, thus
potentially imbuing them with more
credence and relevance to the classroom
teacher. State departments of education
have undertaken other curriculum guidance
activities. Colorado and Texas, among
others, have established resource banks of
instructional materials for teachers through
the Internet. Although few in our sample
did so, states could directly develop
materials for use by teachers and students.
California at one time created highly

regarded instructional units for interim use until publishers provided materials aligned to their frameworks. States also could have adopted or participated in national curriculum reform initiatives.

Organizational-Level Capacities and Policies

Number and Kinds of People. Many people in schools and districts other than teachers provide support for or within the classroom, such as district administrators, curriculum specialists, and teachers' aides. The number and kinds of people potentially influence the way teaching is organized, the ability of teachers to access and interpret curriculum reform (for example, Spillane, 1996), and other elements directly relevant to teaching and learning.

State policies that can influence this factor include class-size regulations, personnel requirements in categorical programs, and regulations governing administrative staff, among others. In 1996-97, California and Florida established financial incentives to reduce class size in the primary grades. California invested $1 billion to reduce class size in grades K-3, and Florida offered incentives to reduce class size in K-1. Some of the other states in our sample have long-standing caps on teacher-pupil ratios. Categorical programs like special education or bilingual education can provide additional resources for support personnel and often have rules governing their use, such as requirements for instructional aides to help teachers in the regular classroom. A few of our states established personnel require-ments for districts, as well as incentives or

sanctions for districts to maintain certain staffing arrangements. For example, each district in Minnesota must appoint a technician responsible for implementing the state's Graduation Rule. Kentucky districts must have a professional development coordinator. Florida imposes sanctions on districts with a high percentage of administrative versus instructional expenditures.

Number and Quality of Social Relationships. Well-functioning schools establish professional communities where adults communicate with and trust one another and are open about their teaching practices. This kind of environment can encourage more innovative and risk-taking behavior, perhaps a prerequisite for the kind of teaching envisioned by reformers. In addition, professional communities outside the school can help move teachers beyond the isolation typical of teaching and enhance teachers' sense of professional efficacy and responsibility.

Specific policies that could influence professional communication and leadership range from restructuring initiatives such as site-based management or site-based decision-making to the funding and development of teacher- or school-based networks. Site-based decision-making was an integral part of the 1990 reform initiative in Kentucky and has been required in Texas since 1992. Florida has been involved in site-based management since the early 1970s, and California encourages site-based management or site-based decision-making via demonstration grants. The authority divested to schools over budgeting, personnel, and other matters varies

substantially across states, but the intent is to give teachers and parents a greater say in instruction and to alter traditional power relationships. (Because these groups can control resources, we also consider this a strategy to influence the organization and allocation of resources.)

State initiatives that allow for the firing or rearrangement of staff in poorly performing districts or schools affect the culture of a school and its professional relationships. The terminology for such intervention varies: it is most often called reconstitution. Reconstitution of school staff is a highlighted feature of Maryland's strong accountability program. Every year Maryland produces a list of reconstitution-eligible schools that permits local districts to reconfigure their staff. Reconstitution is also allowable in Colorado,[4] Florida, Kentucky, and Texas. Michigan policymakers were discussing state-takeover options or the withdrawal of funding from low-performing schools.

Material (Non-Human) Resources. A school's ability to provide a safe and rich learning environment hinges to some degree on its access to sufficient material resources. For example, districts and schools find it difficult to add more teachers or services when facilities are cramped or inadequate (Firestone, Goertz, and Natriello, 1997). This problem is exacerbated by a rapidly expanding school population: a record 51.7 million students were enrolled in public and private schools in 1997-98, and the U.S. Department of Education estimates a need for 6,000 new schools to house the more than three million new students anticipated over the next decade. Decaying school

buildings are also a chronic problem. The U.S. General Accounting Office estimates the current need for maintenance and repairs at $112 billion nationwide. Physical facilities and technology can influence the quality, content, and structure of teaching and learning.

State initiatives in technology were visible in six of our eight states. In Kentucky, for example, they created a comprehensive Education Technology Plan in the early 1990s, spending $159 million between 1992 and 1997. California, Florida, and Texas provided new resources for facilities. Texas established an equalized school facilities program offering assistance to districts with low-property wealth. Concerns about equalization of funding for facilities was a major topic of discussion in Colorado, but no action had been taken during the time of our visit. State set-asides for instructional materials was another example of policies directed at building material resources.

Organization and Allocation of School and District Resources. The way resources are organized and structured can facilitate or hinder each of the above capacities. Resources targeted on areas that have little consequence for teaching and learning, or resources that are spread so thinly that few things are accomplished well, do not maximize local capacity.

Policies that can influence this capacity include improvement planning, site-based decision-making, and market-based reforms such as choice and charter schools. School improvement planning was ubiquitous in our sample and was the most prominent strategy in this area of resource organization and

allocation. It was especially important in combination with school-based decision-making or school-based management reforms, which offer schools mechanisms for control and planning.

Market-based reforms reallocate resources to new schools or to schools outside the system. Such reforms were widespread in our sample states. California, Colorado, Florida, Michigan, Minnesota, and Texas had charter school laws, and Colorado, Florida, Kentucky, Michigan, Minnesota, and Texas had some kind of limited choice mechanisms.[5] State policies governing the planning for use of categorical funds and the way time or state funds are allocated can affect how schools and districts organize and allocate their resources. Several of our states encouraged local educators to use new consolidated planning mechanisms to merge some of their categorical funds and generate more holistic system-wide change strategies. While evaluations of this strategy were not yet available, policymakers in our states perceived it as quite beneficial. For instance, staff in Kentucky mentioned instances where individual teachers or principals "discovered" new funding possibilities during the consolidated planning process. They also believed the consolidated planning process increased communication among divisions in the state department of education, a phenomenon reported in Colorado as well.

As the examples above illustrate, states can and have undertaken a wide variety of initiatives to build capacity for improved teaching and learning. In fact, nearly every state had one or more activities that could be classified across all seven areas.

Nevertheless, states varied in what they emphasized and what policy mechanisms they used to address capacity. As noted, California's governor put a high priority on reducing class size in grades K-3 and invested a tremendous amount of state resources toward this end, including capital construction funds to help schools add more classrooms. Florida provided some financial incentives to reduce class size in kindergarten and first grade, but the other states did not place such a high priority on improving pupil-teacher ratios. Some states put a greater emphasis on capacity-building activities than others. Kentucky stands out as particularly exceptional in its focus on this issue, namely in terms of its diversity of approaches including the time, resources, and attention paid to capacity, and the extent to which the state provided relatively muscular and detailed instructional guidance. Some of this focus can be explained by the small size and homogeneity of the state and the energy and investment of the business community in reform. It is also due to the comprehensiveness of Kentucky's initial reform legislation, which revamped everything from school finance to children and family services to the role of the state in providing instructional direction with standards-based reform. These initiatives have enjoyed relative stability over a long period of time, permitting strategies for addressing specific needs to surface. For example, the challenging nature of their reform agenda and the high stakes of its accountability system created many demands from the field for curricular guidance (see Massell, Kirst, and Hoppe, 1997). With stability, the state has had time to develop a more extensive response to local needs.

By contrast, some of the states in our study were still in the process of getting their instructional reforms in place. Colorado and Minnesota, for instance, just began phasing in new state assessments. Getting the architecture in place may be a prerequisite to considering the full implications of reform for the capacity of teachers, schools, and districts to implement change. Of course, the way capacity-building strategies are designed and implemented is crucial to whether they actually improve the ability of students, teachers, and administrators to respond.

Despite these variations, a pattern emerges when all the policy initiatives are assembled. We found four common strategies in our sample:

• First, policymakers in our eight states concentrated on establishing, supporting, or simply relying upon an infrastructure for providing training and professional development that was external to the state department of education and closer to the teachers, schools, and districts they intended to serve. When state education departments did get more directly involved in providing technical assistance and support, services were often targeted on the lowest performers as designated by the accountability system. Policymakers also asked external, state-supported organizations to give priority to serving these low-performing, low-capacity schools or districts.

• Second, they relied heavily on professional development and training standards as levers to improve the quality of services to enhance teacher knowledge and skills.

• Third, they sought to clarify the implications of their student content standards for classroom curriculum and teaching. This included developing documents that were more specific than the content standards, but were still not a curriculum per se. Often, clarification meant facilitating practitioners' access to a variety of instructional resources. However, most state policymakers maintained an agnostic posture on which materials were most appropriate for state standards. Districts and schools were left to evaluate these resources and make their own decisions about practice.

• Fourth, a majority of the state policy-makers viewed school improvement planning as a way of encouraging schools to review and analyze their own strategies for meeting standards-based reform goals. They assumed that such planning would enable schools to reorganize and reallocate resources more appropriately for reform.

In the next section of this report we will explore these strategies in greater detail.

Common Approaches to Building Capacity

This section describes the four most common approaches to building capacity in some detail and provides many examples.

External Infrastructure for Professional Development and Technical Assistance

For many years, lawmakers and policy analysts have called upon state education departments to move away from their traditional role of monitoring compliance with program regulations and procedures (Sroufe, 1967; Massell and Fuhrman, 1994; see also Lusi, 1997). They have argued that these functions are counterproductive, stifling innovation and doing little more than burdening local educators with meaningless paperwork. Instead, they wanted these bureaucracies to offer greater assistance in improving the practice of teachers, districts, and schools.

In response, state departments of education attempted to reorganize, introduced new managerial strategies based on a more client-oriented approach (such as Total Quality Management), and undertook other activities to comply with this new vision. States such as Florida, Kentucky, and Texas took dramatic steps to reduce or even eliminate compliance monitoring and evaluating schools according to inputs and site inspections (except in cases of chronically low-performance schools). California continues site inspections, but its new Program Quality Review is quite

different from traditional models. Rather than a quick check to make sure regulations are followed, the Program Quality Review is a process of self-review and feedback from outside consultants over an extended period of time. Among other things, it emphasizes the analysis of student work through multiple measures, focuses on the results, uses content and performance standards as part of the review, and leads to a plan for improvement. Other states also attempted to reduce regulations or permitted waivers more readily. For example, since 1991, Florida deleted many state regulations governing graduation standards and courses of study and established a rapid-response waiver process, issuing 113 waivers in 1996-97 alone.

This intended shift in purpose did not mean that staff in state education departments expanded their own roles as direct providers of professional support to teachers, schools, or districts. In each of our eight states, the contrary was occurring: state education departments were deciding not to function as principal agents of technical assistance and professional development, and in some cases, were pulling back their central office staff from activities in this area. Half of our states—Florida, Kentucky, Maryland, and Texas—offered less direct assistance over time.

When state education department staff did provide direct support, they were often careful about how they used their time. For instance, Maryland curriculum specialists tried to maximize the use of their time by responding to requests from school systems or clusters of schools, rather than to individuals or single schools. They also

sought to train local educators to provide assistance (the 'trainer-of-trainers' model) and met biannually with district curriculum supervisors. Many state education departments viewed providing information about good practices as a key function. For instance, Colorado, Florida, and Maryland were exploring or encouraging others to explore unusually effective high-poverty schools. As we shall see below, brokering information about curriculum was a strategy many states used to meet teachers' and schools' demands for more specific instructional guidance to address standards-based reforms. Importantly, policymakers and central office staff in many states often made the strategic decision to focus their limited time and resources on the lowest performers in the system.

But the states' foremost strategy to provide professional development and support to teachers and local administrators was to build or support an external infrastructure of assistance. They relied upon pre-existing groups or institutions to fulfill these needs. This often meant creating or using a set of regional service providers, such as intermediate education units or regional centers spread throughout the state, but it also included drawing upon the expertise and support of state subject-matter associations or other professional organizations, developing professional networks, or encouraging universities to provide assistance to public K-12 schools. In addition, state policymakers often relied upon large districts to provide their own professional development, asserting that these districts had more staff capacity than the state department of education.

In turning to outside providers, Florida, Kentucky, Maryland, and Texas joined states such as Michigan and Colorado, which historically have not had large state education departments and have long depended upon others to provide such assistance. California turned to such external institutions in the mid-1980s to early 1990s as a major part of an overall strategy to build statewide capacity (Goertz, Floden, and O'Day, 1995). At the same time, California sustained a relatively strong department of education that continued its support and assistance functions.

One reason state education departments turned to this external infrastructure to build professional capacity lay in the prevailing wisdom that people who are in regular and close contact with teachers and schools are in a better position to offer advice and assistance. This reasoning is an off-shoot of broader policy arguments holding that higher levels of government should decentralize control and authority to lower levels to improve the quality of service. Another explanation is simply pragmatic: the numbers of state department of education staff have been dwindling steadily for years because of fiscal distress during the late 1980s and early 1990s, as well as long-standing legislative mistrust and concern about the burden of centralized department oversight and monitoring. As a result, education department staffing levels were cut sometimes by one-quarter or more during this period in such states as California, Minnesota, and Texas (see Fuhrman and Rosenthal, 1981; Massell and Fuhrman, 1994). The California Department of Education has lost nearly 50 percent of its staff since 1991, leaving it with just one

math and science specialist (Carlos and Kirst, 1997). Even though further cutbacks were not made in a majority of our eight states in 1996-97, neither did central offices grow substantially to accommodate new responsibilities for reform. Staff limitations had a noticeable effect on policy implementation. As a result of low staff capacity, for instance, Michigan began its new performance-based school accreditation system with a limited summary process rather than the extensive process originally designed. Maryland did not identify all the schools that were technically eligible for reconstitution under state accountability provisions because they could not adequately monitor all of them or provide them with needed support.

States created or relied upon four types of external infrastructures to provide professional development to teachers and technical assistance to schools and districts: regional service centers and intermediate education units; networks; professional associations; and higher education.[6]

Regional Institutions

Regional service centers and intermediate education units, such as county offices of education, have existed for many years, but their importance as a strategy for professional support has ebbed and flowed over time. These regional institutions have been receiving renewed emphasis in the last few years, at least in our sample of states.

Texas is perhaps the most dramatic illustration of a state that shifted from a centralized approach to providing professional support and technical assistance

in a decentralized approach through the use of such regional institutions. In the early 1990s, the Texas Education Agency decided to eliminate altogether the direct provision of technical assistance to schools or districts, and instead handed these responsibilities over to its 20 regional Education Service Centers. The Education Service Centers are responsible for professional development, technical assistance, technology support, and federal program assistance. Texas also created centers for educator development to provide subject-specific professional development in math, social studies, science, and English language arts at the University of Texas-Austin and the Dana Center at the University of Texas. It named Texas A&M to assist the professional development at one Regional Education Service Center. The Texas Education Agency staff worked with these regional groups to develop programs and other tools that could be disseminated to school districts. Focusing the Texas Education Agency staff in this way rather than dispersing them to work with a smattering of teachers, schools, or districts, was seen as a more efficient and effective use of their time. Similar considerations led to the restructuring of state department staff roles in other states, such as Florida.

The purposes of the regional institutions varied across our study states. Some of these organizations were created to further their reform goals and activities; others to meet specific needs such as curriculum development or special education. Some provided general assistance to anyone seeking support; others served only member districts, certain groups of districts, or schools in low-capacity, high-need areas.

Different Functions of Regional Institutions
Serve State Reform Goals Between 1995-96 and 1997-98, Maryland invested $3 million to establish a set of Regional Staff Development Centers, which provided services directly related to the state's reform laws, especially school improvement planning (an integral part of Maryland's accountability system) and more recently in support of a pending new set of state high school exams.
Serve Specific Programs Colorado's regional Boards of Cooperative Education Services were established many years ago primarily with federal dollars[7] to provide special education assistance. Districts purchase support from them on an as-needed basis.
Serve Member Districts Michigan districts created Intermediate Education Units to provide support to members. Kentucky mandated the creation of school district consortia to encourage districts to pool resources to purchase various kinds of services, ranging from materials to professional development.[8]
Serve Targeted Districts and Schools Maryland located its Regional Staff Development Centers near low-capacity districts to help them move toward reform goals. Texas specified that its centers focus strongly on low-performing schools. California's Statewide System of School Support was created to serve Title I and low-performing schools.

Occasionally, these institutions expanded their original mandate. For instance, Colorado's regional Boards of Cooperative Education Services were established to serve special education, but in recent years, a few have assumed a leadership and assistance role in the state's standards-based reform initiatives.

We did not conduct a comprehensive survey of all types of regional infrastructures. However, it was clear that the density of such institutions could vary substantially across the eight states. On one end of the spectrum were large, populous states such as Texas and California with a comparatively large number of institutions. At the other

end of the spectrum were Colorado and Kentucky, with relatively few institutions. The number of institutions is not necessarily a good indicator of the extent to which they can provide sufficient support to their clients; a more important measure would be the relative number of teachers and schools served by staff in these organizations (data which we did not collect systematically across the states). But the range suggests that policymakers need to pay heed to how well these regional institutions can reach their targets. This caution is bolstered by evidence suggesting that the capacity of these institutions can be highly constrained. Kentucky's Regional Service Centers had one staff person to provide curriculum

support to about 25 school districts and at least four or five times that many schools. They also had a high rate of staff turnover. Some of Colorado's service centers had only one or two staff members. Capacity in Michigan's Intermediate Service Districts was directly related to the wealth of the communities that funded them.

Networks

Many states actively nurtured networks of teachers or other educational experts, schools, or districts to build professional

capacity tied to reform. There were three kinds of networks.[9] The first kind focused primarily on improving the knowledge and skills of the individuals or organizations that participated in them. The second type of network was formed to deploy a cadre of teachers or other experts who could offer their knowledge and skills to others. The third was used to develop or disseminate specific products.

Different Kinds of Networks

Networks to Build the Knowledge and Skills of Participants

California had subject-specific teacher networks like Math Renaissance, a middle school initiative funded by the National Science Foundation; a network for restructuring schools; and a pilot network of schools focused on early literacy.   But perhaps the most well-known and large-scale example is its teacher-based networks, the Subject Matter Projects. The origins of the Subject Matter Projects can be traced to the Bay Area Writing Project established at the University of California over 20 years ago. The Bay Area Writing Project offers several-week summer institutes and follow-up training through the year; an extended, continuous time period meant to provide participating teachers with the opportunity to reflect on and develop instructional and curricular strategies and projects.   Building on what was hailed as a successful professional development model, the state became involved and helped sponsor new Subject Matter Projects in subjects related to the state curriculum frameworks.   In 1987, the legislature provided the Subject Matter Projects with funding in three-year cycles, which offered stability and enabled interested teachers to make a long-term commitment and to evolve into a cadre of teacher leaders (Loucks-Horsley, 1997). By 1996, the Subject Matter Projects were running in 90 sites, representing work in 11 curriculum areas.

Different Kinds of Networks (continued)
Networks to Provide Assistance to Local Practitioners As part of the School Transformation Assistance and Renewal program, the Kentucky Department of Education trained a network of Distinguished Educators to support schools "in decline" or "in crisis" on the state's accountability index. Distinguished Educators helped schools with their mandated school planning and change processes. Among other things, Distinguished Educators provide assistance in interpreting the implications of the statewide assessment and other school factors related to achievement. Many of the schools designated as in decline also received training and support in curriculum alignment using the state's standards as well as national content standards. Unlike the Distinguished Educators, who provided targeted support to certain schools, other networks provide general assistance to those who request it.[10] Florida trained over 400 people in curriculum restructuring aligned to the state standards; these individuals have held professional development workshops for teachers throughout the state. Minnesota established Best Practice Networks of state-trained, content-specific practitioners to provide support to classroom teachers.
Networks to Create and Disseminate Products The Michigan Reading Association, the Michigan Council of Teachers of English, and the Michigan Department of Education drafted standards, created classroom examples, and set up demonstration sites as part of Michigan's English Language Arts Framework project. The Kentucky Department of Education prepared a large group of KERA Fellows to work on standards-based curriculum and assessment. These Fellows piloted the state's curriculum framework, *Transformations,* developed lessons based on it, and created assessments and scoring rubrics. The KERA Fellows also provided training assistance. The education department endorsed them as providers of professional development to encourage the dissemination of their expertise.[11]

Professional Associations

Many of our states turned to professional groups for support, especially state affiliates of national subject-matter associations. These organizations played critical roles in helping several states develop guidance policies and in providing professional development for teachers.

Higher Education

Many of the states tried to forge stronger, sustained ties between K-12 and higher education. Of course, these institutions have long been primary sources of training for new teachers and continuing education credits for experienced teachers. But newer efforts often tried to move beyond the traditional approaches to encourage more reform-related professional development and training.

Different Functions for Professional Associations
Providing Professional Development The Michigan Reading Association has played a major role in providing professional development for reading. In the mid-1980s, Michigan Reading Association specialists presented dozens of local and regional workshops to introduce local educators to the new research on reading. The Colorado Council of Teachers of Mathematics, the Kentucky Academy for School Executives, and the Kentucky School Boards Association are all organizations that offer standards-related training to their membership.
Helping States Create Instructional Policies The Michigan Department of Education has long relied on professional organizations to help develop guidance policies. The Michigan Reading Association has had contracts with the state since 1976. Recently they developed a new framework for the state's high school proficiency test, and worked with the Michigan Council of Teachers of English on the state's curriculum frameworks project (Goertz, 1995).

Higher Education Support
Professional Development and Training for Teachers Professional Development Schools were a key component of Maryland's effort to redesign teacher education. The state developed 13 pilot sites involving ten districts, nine universities, and a few community colleges to provide high-quality internship experiences for pre-service teachers and to serve as sites of best practice. Florida established five Florida Academies for Excellence in Teaching to pilot in-service partnerships between schools and colleges of education.
Curriculum-Related Support Texas established professional development centers at the University of Texas-Austin and the Dana Center of the University of Texas and named Texas A&M University to assist the professional development center at one regional Educational Service Center (ESC). Curriculum-related professional development centers at the University of Texas and Texas A&M University assist Region 6 ESC with its professional development center. Many of California's Subject-Matter Projects were hosted by California universities.

Setting Professional Development and Training Standards

At the same time they were nurturing the supply of technical assistance and professional development, state policymakers were concerned about the quality of professional development. To address this issue, the eight states in our sample tried to create different kinds of professional development and training standards, paralleling their standards-based approach to improving the quality of curriculum and instruction.

The states' use of standards for improvement was motivated in part by the need to convince key players, such as governors and legislators, that professional development was a valuable and necessary activity. Over the years, politicians around the country have expressed skepticism about the worth of professional development, often seeing it as a payoff to the teachers' unions rather than a critical component of reform. Just as Michigan completed its professional development standards, for example, Governor Engler eliminated a $10 million fund for staff development. Indeed, in 1995 only 19 states offered districts a line-item appropriation for professional development (CPRE, 1997), and at least one of these, Michigan, subsequently dropped that provision. Instead, states typically provided professional development resources in the form of grants or as a part of special programs. For example, California's new Reading Initiative carried substantial funding for professional development.[12] Much of what our sample states offered districts for professional development came from federal sources, such as Goals 2000 and Title II of the Improving America's Schools Act. Allocating these funds through special programs and grants was often easier than obtaining direct line-item appropriations for professional development, and some state officials felt it protected these moneys from budget-cutting maneuvers. However, placing these moneys in different budgets also made it more difficult to determine what resources were available for professional development and how funds would best be deployed at the state or local levels.

State Standards for Professional Development

The eight states used different kinds of standards to improve the quality of professional development. Some of these were standards per se: they identified standards of good practice for professional development, teaching, and pre-service education. Districts were usually not required to use professional development or teaching standards in their programs; rather, states used them as guides in grant-making or as a component in targeted aid programs. A few states did require or encourage institutions of higher education to follow these standards in the preparation of new teachers.

States also developed quality criteria for providers' lists that they maintained or for evaluating professional development activities. A few took a more decentralized approach and asked local districts to create professional development plans based on their needs. Occasionally, districts were asked to develop criteria and assess the value of their professional development. These requirements were often more process-oriented than content-oriented. In other words, they specified who should be involved in decision-making and how decisions should be made, but said little about the content of those decisions.

Types of Standards for Professional Development
State Standards for Professional Development As a first step toward creating its own professional development standards, the Maryland Board of Education adopted those of the National Staff Development Council in October, 1996. Colorado's advisory *Investing for Results* standards called for professional development that was comprehensive and planned with a clear purpose; designed to engage professionals, paraprofessionals, support staff, and the community in ongoing efforts to improve student learning; content rich and focused and aligned with a standards-driven education as defined by state law; designed to align reform efforts, especially standards-driven reform and licensure reform; and designed to build capacity of schools, districts, professionals, and the teaching profession to raise student performance.
Quality Criteria Prompted in part by pressure from federal requirements under the Improving America's Schools Act to determine whether its programs were effective in helping teachers receive professional development linked to high content standards, California planned to build on its earlier state-sponsored evaluations of professional development to create a system of quality indicators. Kentucky maintained a list of approved professional development providers. Its KERA Fellows, for example, were highly involved in piloting and developing state policies, and they were endorsed as professional development providers.
Local Professional Development Planning and Review Criteria Districts in Texas will have to develop their own plan and criteria for the use of professional development dollars. Each school's site-based decision-making committee must also approve the portions of the district plan that address their staff development needs. The Kentucky Board of Education required district professional development plans to include a clear statement of school or district mission, professional development objectives focused on that mission, and a process for evaluation. These plans must be approved by the Regional Service Centers.

State Standards for Pre-Service Education and Teaching

Teacher licensure and certification as well as institutional accreditation have been and remain primary policy mechanisms for ensuring that teachers receive adequate and appropriate preparation. To improve these traditional quality-control measures, states created their own pre-service standards and joined national organizations and projects that offered standards-based initiatives.

The states also undertook their own efforts to generate standards-based improvements in these areas. Several of our sample states developed standards for pre-service teaching or the teaching profession more generally, and others revamped accountability processes.

Improving Pre-Service Education
Standards for Pre-Service Education and Teaching Florida created new pre-service standards and made approval of teacher preparation programs contingent on teacher-candidate performance on its Twelve Educator Accomplished Practices (see Appendix C). By the year 2000, Maryland teacher education programs must show how their curricula incorporate state teaching standards, the Essential Dimensions of Teaching, and other components of the state's redesign for teaching training (see Appendix D). Minnesota was developing performance-based licensing that included performance assessments for basic skills, pedagogy, and content and required a one-year internship with mentoring and ongoing professional development. Kentucky's New Teacher Standards (and New Administrator Standards) required portfolios and performance assessments. Colorado teacher-candidates were required to pass exams aligned to student content standards to enter and exit teacher education programs under the state's Program for Licensing Assessments for Colorado Educators.
National Standards-Based Initiatives Maryland and Kentucky were participating in the National Commission on Teaching and America's Future program, which was developing a blueprint for incorporating changes required by reform. Colorado teachers had the option of undergoing the rigorous certification process of the National Board for Professional Teaching Standards to obtain advanced teaching certificates. The National Council for the Accreditation of Teacher Education (NCATE) has aligned its accreditation processes more closely with principles of standards-based reform. Many of the eight states worked with NCATE to review their teacher-training institutions and refashion their accreditation processes. Florida required its teacher-training institutions to obtain NCATE accreditation. Maryland, Michigan, and Kentucky also became NCATE partners; Texas was considering a limited relationship; and Colorado modeled its own accreditation standards after those of NCATE.
Accountability Texas was taking steps to encourage teacher-candidates to gain deeper content knowledge by expanding responsibility for teacher preparation. Its Accountability System for Education Preparation would hold an entire institution, not just the college of education, responsible for teacher-candidates' test scores in content and education areas. The initiative proposes withholding additional programs from institutions with low teacher-candidate test results.

Curriculum Materials for Students and Teachers

The motivating theory of action in standards-based reform argues that it is the state's role to set the goals of what students should know and be able to do. In other words, states should establish challenging academic content standards and standards of performance while it is the district's or school's role to determine how best to meet these objectives (Smith and O'Day, 1991). This approach authorizes the state to set academic goals and standards and leaves

decisions about curriculum and instruction in local hands. It is a strategy that fits well with the "horse-trade" division of authority proposed by the National Governors' Association in the mid-1980s. In an influential report called *A Time for Results* (1986), they argued that the state should relax regulation and oversight and offer schools and districts greater autonomy if the latter met outcome goals set by the state.

These ideas took root in the states and led to the development of standards documents of a fairly broad level of detail, not a day-to-day curriculum that teachers could pick up and use in their classroom, but a description of the large concepts and ideas that students should know and be able to do. This approach to standards also satisfies certain political and legal constraints felt in many states. For example, Colorado's constitution explicitly prohibits the state from determining curriculum.

Equally important, this general standards design fits with one prevalent version of instructional reform known as constructivism. Among other things, constructivists argue that state standards should focus on concepts and big ideas and abandon the once-common approach of providing lengthy lists of the facts and skills that teachers should cover (Curry and Temple, 1992). Constructivists suggest that the latter encourages over-emphasizing the memorization of facts and skills at the expense of deeper and more challenging thinking. Constructivists also call for moving from setting rigid grade-by-grade expectations of what students should know, arguing that instruction should be sensitive to the different pace at which children

develop.[13] Standards should be established at certain benchmark grades to provide this greater flexibility.

These arguments have had an impact, even in states which once offered detailed curriculum guidance for schools. For example, unlike Texas' earlier Essential Elements standards, the 1997 Texas Essential Knowledge and Skills Standards do not refer to specific content such as names, dates, or books, but focus on concepts. There is a competing argument that standards should be highly specific, but policymakers in Texas and other states have sustained a broader, more general approach to academic standards.[14]

After these initiatives were implemented, however, states were called upon to take a more active role in helping local educators find or develop curriculum materials that address the state standards. Indeed, one of the most frequent complaints from districts about state standards is that they are too general and that district and school staff do not have the capacity, resources, time, or expertise to convert these broad standards into local curriculum. Furthermore, restructuring initiatives decentralized curricular guidance and responsibilities to the school site, thus amplifying the need to prepare more people to conduct new and different tasks (Massell, Kirst, and Hoppe, 1997). Local administrators and teachers historically have not had the kind of expert knowledge and skills necessary to develop curricular programs and materials, leading them to depend heavily on textbook and testing publishers for structure and guidance (Walker, 1990).

All the states in our sample moved to address the curriculum gap, but they varied in the extent of their support and the specificity of their advice about curriculum. California and Kentucky offered quite extensive and substantive curriculum guidance. Although California has recently been buffeted by fierce debates that are producing mixed messages about curriculum, policy actors certainly have not equivocated about their positions on the issues and have offered very specific programs. Perhaps most unusual was Kentucky's 1997 sponsorship of a Showcase Conference highlighting research-based programs that demonstrated improved student achievement outcomes (on any kind of test, not just the Kentucky state assessment). They found 12 programs that had such a database—a small number, which speaks volumes about the adequacy of instructional program evaluation around the country.

State constitutional constraints and views about the suitable role of the state in curriculum guidance prevented many other states in our sample from taking similar action. The importance of policy culture was evident here. Concerns about local control and the appropriate role of the state were evident in Texas, Colorado, and Maryland. State education department staff in these states were hesitant even to offer advice about curriculum programs they thought were well-matched to their standards. One important Colorado official in charge of a major instructional reform initiative, for example, said he was uncomfortable having his staff recommend or identify good curriculum programs. Thus, the states in our sample continued to pursue a range of loose-to-tight curriculum policies, depending on their political traditions and mix of interests, generally leaving districts and schools with primary responsibility for determining their curricular and instructional programs.

Description of Building Curriculum Capacity

To fill the curriculum gap, states frequently developed more specific frameworks with greater detail and examples of how the standards could be incorporated in instruction. The states also developed supporting documents and established resource banks containing sample materials and instructional tools. A few states tried to support or encourage the adoption of national instructional programs, but the vast majority of these activities were undertaken by districts and schools independently of the state.

Organization and Allocation of School and District Resources

The policy structure in education today often reflects the kind of "horse-trade" ideas about authority and accountability promoted by the National Governors' Association. This horse-trade offers local districts and schools greater freedom from regulation and oversight in exchange for high student performance. The new thinking was expressed in the following quote from the Texas Commissioner of Education:

> *The vision for the new system can be summed up in three words—freedom with accountability. School districts,*

Approaches to Supporting Local Curriculum Development
Curriculum Frameworks and Other Materials Florida's curriculum frameworks link the Sunshine State Standards to pedagogy and student achievement expectations. Each document provides overviews of models of good teaching, learning, and assessment to encourage local educators to develop new and innovative instructional approaches. In addition to its frameworks, California published a host of backup documents, including program advisories, materials lists (beyond textbook adoptions), task force reports, and model curriculum guides. The state education department also issued curriculum advisories. For example, its reading program advisory, Teaching Reading, laid out a rationale and a research basis for a recommended approach to the teaching of early reading. It included grade-level expectations and examples of classroom practice and a sample reading curriculum timeline for preschool through the eighth grade. Several years ago, partially out of concern that the textbook industry was not responding adequately or quickly to its mathematics framework, California produced "replacement units," instructional units on specific mathematical topics. These units did not constitute a comprehensive mathematics curriculum, but were meant to be an interim step until aligned textbook materials were produced (Goertz, Floden, and O'Day, 1995).
Resource Banks Texas, Florida, Kentucky, and Colorado emphasized new technologies to provide ready access and cost-effective dissemination. For example, Texas was developing content and teaching vignettes on compact disks and putting materials on the Internet. Similarly, Florida created an on-line community of teachers and staff developers with its InTech 2000 initiative. InTech 2000 planned to disseminate CD-ROMs of best practices in content areas to train teachers to navigate the Internet for resources, to develop Electronic Curriculum Planning Tools based on the state's standards and frameworks, and to help teachers develop classroom assessments. Maryland supported local districts' efforts to develop a resource bank of classroom-based performance assessments. The state loaned a staff member to direct the Maryland Assessment Consortium, which brought teachers together to create assessment tasks based on the state's Learning Outcomes. Selected tasks were published and sent to local school systems. The Maryland Assessment Consortium will create a bank of high school level tasks in preparation for a new high school assessment.

**Approaches to Supporting Local Curriculum Development
(continued)**

Support for Adoption of Instructional Programs

As a New American Schools scaling up site, Maryland aims to have at least 30 percent of its districts adopt an effective practices model by the year 2000. Effective practices criteria have been included as part of the state's criteria for evaluating Goals 2000 applications. In addition, the state education department leveraged grant funds from Goals 2000 and technology grants, provided locals with assistance in selecting designs, identified implementation resources, and networked schools.

Different Ways of Knowing is an instructional program developed by California's GALEF Institute that has circulated widely in Kentucky, because it is viewed as compatible with Kentucky's standards. While the Kentucky Department of Education did not directly fund this initiative—it has been supported by foundations like Annenberg and business partnerships—the Department did use its bully pulpit to call attention to Different Ways of Knowing. For instance, the department held a press conference and provided other informal forms of support for the program.

In 1997, Kentucky sponsored a Showcase Conference highlighting 12 research-based programs that demonstrated improved student achievement on different test measures.

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principals, and teachers have the freedom to try innovative teaching strategies to improve student performance, but they also are held accountable for their results. Mike Moses, Texas Commissioner of Education (1996).

State policymakers have tried to craft new accountability systems focused primarily on holding educators accountable for outcomes rather than, or in addition to, the more customary inputs (such as the number of books in the library) or processes (for example, committees) (Elmore, Abelmann and Fuhrman, 1996). As part of this shift, states have focused more on schools as critical units of the system. This, too, departs from traditional accountability programs, which largely held districts or students responsible for performance. For instance, if states disaggregated and published test

results other than a state-level average, they usually did so by districts, not by schools. But policymakers argued that district-level data masks the variable performance of schools, and the effective schools' literature shows that school practices are critical to school success.

The trend for school accountability was reflected in our sample of states. Maryland, for example, first began producing school-level results on their new state assessment in the early 1990s and focused the consequences for failure (or success) primarily on schools. Their motivation for doing so was articulated in an influential 1989 report of the Governor's Commission on School Performance. The report said that this strategy was meant to prevent teachers and administrators from finding excuses for failure and to hold them fully accountable for student results "regardless of the

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demographic characteristics of their students, regardless of past performance, and regardless of local resources."

The final major trend we note in capacity-building across the eight states reflects these arguments. Each of the eight states in our sample required some form of school improvement planning, and several viewed it as a critical component of their reform initiative. Policymakers saw school improvement planning as a way to link bottom-up decision-making with the top-driven goals of state reform. School improvement planning is also intended as a vehicle, like site-based decision-making, for asserting schools as important actors in local district decision-making processes. This kind of planning has schools identify their needs in light of reform goals, then reallocate the necessary money, time, personnel, professional development, or additional resources accordingly.

Description of School Improvement Planning

States either linked their school improve-ment planning to their accountability systems or tied it to site-based decision-making. The extent to which states supported and monitored school improvement plans differed. For example, staff in the Maryland Department of Education reviewed and provided technical assistance for school improvement planning only in schools where poor performance designated them as eligible for reconstitution (that is, where all or part of a school's staff may be removed). The department limited its review to these schools because they did not have the staff capacity to review all

plans. Only a handful of schools meet all state standards, so most are required by law to develop a school improvement plan. Florida required districts to collect school improvement plans and stipulated that failure to do so could lead to the loss of state lottery funds. Texas, Kentucky, and Colorado did not collect school improvement plans at all, unless they were necessary for grant applications.

Florida designed its school improvement planning process to reflect state reform goals, but other states did not specify this kind of connection. Rather, it was assumed that school planning would be linked to state goals by the pressures of the broader accountability system. In other words, a school would be likely to focus on state standards and outcomes in its planning if it stood to lose prestige, staff, or students by under-performing on state accountability measures.

Summary

In this section we have tried to provide the reader with both a deeper understanding of the dominant trends in capacity-building across the eight states and insights into why states gravitated toward these solutions to the problem of capacity. These strategies were highly decentralized in many ways. Certainly this was reflected in the emphasis on creating a statewide supply of professional development and technical assistance closer to districts and schools. It also was reflected in the many options states tried to provide in curriculum and in most states' insistence on an impartial stance toward curriculum. School improvement

Approaches to School Improvement Planning
Linked to Accountability Maryland's state accountability program required every school that did not meet state performance standards in each area (currently all schools) to develop a school improvement plan. School improvement planning was also a key component in Florida's 1991 accountability legislation. Florida required each school to develop annual school improvement plans assessing the school's performance relative to the state's eight education goals. These plans described the activities the school would undertake to address state goals and performance standards. Schools were allowed to define their own measures of adequate yearly progress and how they would evaluate themselves. More recently, the state established its own criteria for low performance out of concern that schools were not proposing challenging targets. Schools making inadequate progress (according to school or state criteria) received technical assistance and, if progress was not forthcoming, a range of possible interventions could be triggered. Michigan and Colorado built school improvement planning into their accreditation processes. California required schools to produce a school improvement plan as part of its Program Quality Review process.
Linked to Site-Based Decision-Making Kentucky and Texas embedded school improvement planning in regulations governing site-based decision-making. Kentucky required site-based decision-making teams to develop School Transformation Plans every two years, while Texas called for annual plans.

planning and professional development standards also maintained substantial flexibility and control in teachers' and administrators' hands.

These decentralized strategies strongly reflect the ideas and approaches underlying current standards-based reform, such as the notion that the state should set standards but not determine the curriculum, that instructional decisions should be left in the hands of local authorities, and that schools should be held primarily accountable for results. Indeed, the degree of conformity we saw in the three areas of capacity reiterates the lesson that policy ideas do matter (Reich, 1988), and that common ideas can

strongly affect decisions across diverse environments.

But it would be simplistic to overplay these trends. Some states had major strategies in areas not discussed here. We would not do justice to over-generalize findings from eight states, within which there was variation. For example, while political action in many of our states reflected skepticism over the financial value of professional development, policies in some states, especially Kentucky and California, reflected a strong fiscal commitment. Thus, policy ideas matter, but ideas also intersect with politics, leadership, state political cultures and traditions, the institutional

capacity of state education departments, and local demands.

Promise and Continuing Challenges

Promise

After our research visits to the eight states, we felt a certain sense of optimism that policymakers were giving serious thought to the important issue of building capacity for teaching and learning. As our review illustrates, states undertook numerous efforts to address the many needs emanating from reform. To fulfill their mandates to become more assistance-oriented, state education departments sought to create a decentralized fabric of support that involved a diverse array of players. Such decentralization and diversity, especially if the players are strong, may help institutionalize and stabilize reform and sites of capacity-building. Certainly research evidence suggests that improvements are more likely to result when teachers and schools receive support tailored to their setting that is longer-term than the typical workshop (Cohen and Hill, 1998; Little, 1993). For example, early indications from Kentucky imply that the kinds of intensive, school-specific support provided by Distinguished Educators yielded results. After receiving assistance from the Distinguished Educators, 63 percent of schools in decline made enough progress to be placed in the reward category in the next accountability cycle. Thus, this individualized and focused assistance was associated with measured improvement on state assessments (Davis, McDonald, and Lyons, 1997), though further studies are

needed to better understand the role these educators play in building schools' capacity to change.[15] Groups and organizations dispersed throughout a state and working directly with schools may be in a better position than state department of education staff to offer such sustained and specific assistance.

It also is promising that policymakers in several states have given heightened interest to creating professional networks of educators. These networks operated to enhance the knowledge and skills of the participants or to serve as professional development providers for others. The literature on such networks suggests that they can offer teachers access to new knowledge, a strong sense of professionalism, and collegial opportunities to move beyond the confines of their own school and experiences to see other ways of doing things (Lichtenstein, McLaughlin, and Knudsen, 1991). Breaking the isolation that typically attends teaching and offering teachers the kinds of professional opportunities that higher education faculty have long enjoyed (Elmore, 1993) is an important component of improving practice.

States also listened to the concerns emanating from the field about the need for more specific curriculum guidance and for curriculum models that address state reform goals and help improve students' performance. States became more active in providing access to curriculum resources and providing frameworks with more concrete illustrations about what standards-based instruction and high student performance might look like. Several states also employed or began to consider

curriculum-specific professional development.

The argument for curriculum-specific support cannot be overstated. It is bolstered by important studies that show that professional development tightly coupled with what students learn can be a strong and powerful lever for school improvement— more important than the typical training session based on vague and ambiguous reform principles. The work of CPRE colleagues David Cohen, Heather Hill, and Suzanne Wilson suggests that professional development that is strongly grounded in reform-related curriculum is associated with instructional changes as well as gains in student achievement. Cohen and Hill's study combined a one-time survey of 1,000 California elementary teachers with policymaker interviews and classroom visits in three districts. Cohen and Hill contrasted teachers' practice and student outcomes when teachers had received professional development that was tightly connected to the math curriculum supported by the state's framework versus professional development that was more loosely related to math content. Cohen and Hill found that teachers involved in the curriculum-specific workshops reported more reform-oriented practice in their classrooms. They also found that this kind of professional development was associated with students' success on the statewide mathematics test (the then California Learning Assessment System), especially if the activities were extended in time and connected to multiple elements of instruction, such as assessment and curriculum (Cohen and Hill, 1998). Similarly, Suzanne Wilson's research on mathematics reforms in California found

that teachers' participation in workshops that focused on the new student curriculum[16] had an important and positive impact on teachers' behavior and classroom practices. Compared to teachers who were involved in more generic types of workshops, these experiences prompted teachers' involvement in reform-related activities and reform-related instruction (Wilson, 1997a, 1997b). The argument for curriculum-specific professional development also enjoys empirical support from evaluations of the New American Schools models and from analyses of natural variation experiments in such locales as Memphis, Tennessee (Herman and Stringfield, 1997).

Attention to the quality of professional development and training, as expressed by new professional development standards, may indicate a greater willingness on the part of state policymakers to consider stronger designs and investments in professional development. It also reflects policymakers' concerns about directing professional development toward activities with potential for improvements in teaching and learning. Getting a better handle on professional development is essential to building capacity for reform.

Continuing Challenges

The strategies that were common across our states raise policy questions and pose particular challenges. What are the gaps and potential problems in these approaches? What should policymakers consider when using these strategies to support teaching and learning?

The Capacity of the Infrastructure Outside the State Departments of Education

States turned to external infrastructures and groups in part because of the philosophy that those closer to the field are in a better position to provide regular, sustained, and relevant aid, but also as a way of coping with their limited state department capacity. Yet when employing these external agents as sources to build teachers' and administrators' knowledge and skills, policymakers should consider to what extent these institutions or groups can satisfy the needs and demands for assistance. Staff in many regional centers were spread thin, and in many cases they were expected to provide help to large numbers of teachers and schools. State education departments may not be in a position to reach out to all teachers and schools, but these external groups and institutions may not have sufficient human or fiscal resources to meet the needs either. In many cases these external organizations offer superficial support or traditional workshops, which raises the question of whether they have the knowledge, skills, or time needed to provide high-quality assistance. State policymakers recognized the staff limitations at times; they often asked these external groups to strategically target their energies on the lowest performers (just as state department staff did) but they did not always address the challenges faced by these external groups.

One factor in this calculation is simply the size of the state. A dense network of providers will be important in large states. Another consideration is whether the external groups or organizations have stable sources of funding. Others have noted how the California legislature's three-year funding cycles enabled the Subject Matter Projects to plan activities and engage teachers on a long-term basis (Loucks-Horsley, 1997)—precisely what the literature on professional development suggests is important for meaningful changes in teachers' practice (Little, 1993; McLaughlin and Talbert, 1993). Regular state funds and state leadership can help sustain these kinds of teacher networks. For example, officials in Colorado created a cadre of teachers involved in assessment reform, providing motivation and leadership by participating in the national assessment project, funding the effort, and convening regular meetings with teachers. The network lasted several years, but once the state discontinued leadership in this area, the network largely dissolved.

Translating Numbers into Action

A key assumption of the reform strategy employed by policymakers today is that performance information from the accountability system will drive change in schools and districts. The theory of action is that the accountability system will provide feedback on school performance that will then be used in school improvement planning. Performance data will drive change because it is embedded in a system of sanctions and rewards that will further motivate teachers and schools to improve. This accountability-driven model requires that the data on performance are transparent and readily understandable, and teachers and administrators have the knowledge and skills to translate this information into appropriate action for school improvement.

But the evidence suggests that the performance data often are not transparent and readily understandable and that educators often do not have the requisite knowledge and skills to translate them. Part of the issue lies in the way outcome data are incorporated into accountability formulas. To broaden the scope of school accountability beyond student achievement, a number of states have factored in additional performance measures such as student attendance, retention, and drop-out rates. Kentucky and Maryland, among others, have established accountability programs that hold schools responsible for performance over a multi-year period. Policymakers and many local educators would argue that looking at year-to-year data unfairly penalizes schools for natural fluctuations in the data, and that looking over a longer term shows trends that reflect practices in the schools more accurately.

The calculations to determine a school's progress or decline can be very complex. For example, Maryland's School Performance Index used a weighted average of a school's relative distance from state-defined satisfactory standards and calculated change over a three-year period. Progress or decline was determined by comparing the School Performance Index for the current year with the average performance of the two previous years. Distance from satisfactory standards was calculated by the school's performance on the indices divided by the satisfactory standard set by the state. Thus, the numerator was the percent of a school's students at proficient levels in each tested content area, combined. The divisor was the weighted average of a school's relative distance from the state's satisfactory

standards. If the school declined over a three-year period and was far below the standard, it could be identified as reconstitution-eligible by the state, a status allowing districts to move staff if they wish. Alternatively, significant progress might earn financial rewards.

Other states' accountability indexes were similarly complex. A study of accountability indexes used in Kentucky and Mississippi found that they were so difficult to comprehend that few policymakers or educators could explain them (Elmore, Abelmann, and Fuhrman, 1996). This complexity, undertaken in the name of providing fair and adequate performance data on the schools, made the performance results less obvious. Thus, interpreting their implications for developing programs or altering school structures to make improvements could pose significant challenges for school and district staff.

Even if student achievement data were not embedded in complex formulas, testing data does not necessarily translate easily into obvious changes in classroom or school practice. Some reasons have to do with test designs. In order not to overburden students and schools with a vast number of tests, and to attend to the notion that children learn at different paces and thus should not be evaluated annually, many states test only a limited number of grades and subjects. This provides schools and districts with insight into broad trends and can help in program planning. But, individual teachers in the non-tested subjects or grades receive no feedback on their performance. A similar set of issues arises with matrix-sampling. In order to test a broader range of material and

not over-burden students with a long exam period, some states offer different portions of a test to different samples of students. While the information is valid and reliable at the school-level, it is difficult to obtain an accurate picture of individual students' performance.

Even when teachers receive individual student data, interpreting the results can be a difficult task because teacher education programs traditionally have offered little training in using assessments or interpreting their implications for learning and instruction (Massell, 1995). Norm-referenced tests, which score students relative to how well others perform on the tests, have long been the prevalent mode of testing in this country. But critics charge that this kind of scoring does not clearly convey what a student's results means in terms of his or her ability to do something (Elmore, Abelmann, and Fuhrman, 1996). For example, if Bobby scored at the 70th percentile in mathematics and Ann scored at the 50th percentile, we understand that Bobby may know relatively more than Ann, but we do not understand what he knows.

Teachers find that criterion-referenced scoring and performance-based assessments offer more direct evidence of students' ability to write, think, and solve problems. Although teachers find that these kinds of assessments provide them with richer insights into student understanding (Koretz et al., 1996), they still need other kinds of knowledge and skills to decipher that information and translate it into classroom improvements that move beyond simple imitation (for example, asking students to write more) and lead to deeper changes in

instruction (David, 1997). When teachers have information that certain children are weak in interpreting and using graphs, for example, they must still determine how best to teach that information, how different students best learn, and more. As a politician once said in conjunction with efforts to improve assessment, "Just because you know how to weigh a pig better doesn't mean it will get fatter."

A few of our states paid attention to these issues, again, often focusing their support on low-performing schools. Kentucky's Distinguished Educators, for instance, helped schools translate the performance data into meaningful changes in practice. But this is a more global problem confronting all schools. Some states, like Maryland and Minnesota, tried to involve teachers in scoring and developing state assessments, partially as a professional development activity. These efforts may improve teachers' knowledge of assessment, but they do not necessarily help them understand how instruction can be shaped to improve performance on the tests. Transparency and translation are areas that need more attention.

Building the Capacity of Schools in the Middle

The states often targeted their resources on the lowest-performing schools and districts. Offering assistance to those most in need was one way of coping with limited staff capacity and resources and was in many ways a logical action. But how do other schools, the schools in the middle of the performance distribution, gain the knowledge and skills they need to make

progress? They, too, often have a long way
to go to meet state performance standards.
The states set performance standards at
different levels of difficulty (see Musick,
1997), but many state standards were
challenging for many if not most schools to
achieve. In Maryland, only 145 schools met
or exceeded the satisfactory standards in
1996: 20 elementary schools (2.5 percent),
11 middle schools (4.5 percent), and 112
high schools (59.9 percent).[17] The majority
of schools meeting the standards were high
schools because their performance was still
keyed to basic skills competency tests, rather
than the more challenging assessments
required of elementary and middle schools.
The state's targets were that at least 70
percent of an elementary or middle school's
students would meet the state's satisfactory
performance standards by the year 2000, and
90 percent of high school students would
pass the current exit exam. In Kentucky in
1995-96, 31 percent of fourth grade students
met the proficient standard in reading, 14
percent did so in math, 3 percent in science,
13 percent in social studies, and 18 percent
in writing (Petrosko, 1997). Kentucky
expects that all schools will have an
accountability index of 100 by 2012, which
would require high percentages of students
in each school at the proficient or
distinguished levels (the two highest of four
categories).

Support is clearly needed for more than the
schools at the lowest end of the performance
distribution. This is a challenge to be met
under conditions of limited resources, but it
must be addressed if policymakers are to
scale up reform.

The Importance of Continuity in Capacity-Building

Many state policymakers were hesitant to
prescribe or even recommend exemplary
curriculum programs. Part of states'
reluctance in this sphere stems from notions
about the appropriate role of the state;
reluctance also stems from the Pandora's
Box of competing political forces and
notions about best practice that can emerge
over curriculum (Massell, 1994). States have
made progress in developing and adopting
standards, but their efforts have not gone
unchallenged and future challenges are
likely. Maintaining some stability and con-
tinuity during these periods is important in
building capacity for teaching and learning.

Perhaps nowhere is this more dramatically
illustrated than in California. After being at
the forefront of standards-based reform and
new ideas about teaching and learning for
nearly a decade, California began to
experience sharp reversals in the mid-1990s.
After poor state showings on the National
Assessment of Educational Progress exam,
the governor vetoed funding for the state's
new performance-based assessment
program, the California Learning
Assessment System. Policymakers also
seriously questioned the state's progressive
language arts and mathematics frameworks,
the existing structure for creating standards
and tests, frameworks at benchmark grades
rather than grade-by-grade, and more.
Indeed, legislation enacted soon after the
governor vetoed the state's assessment
system specified major revisions in state
academic content and testing policies (for
more, see Massell, Kirst, and Hoppe, 1997;
Carlos and Kirst, 1997). Fierce debates

ensued about whether California should modify or reject the underpinnings of the previous state mathematics framework, which had embraced the 1989 standards developed by the National Council of Teachers of Mathematics. In language arts, arguments focused on whether the whole-language approaches used in the previous framework should be eliminated or combined with phonics-based instructional strategies.

A confusing and complex array of curriculum guidance initiatives were issued from multiple sources. The state education department convened a set of task forces on mathematics and language arts, which issued advisories for districts. The California Department of Education created its own standards for their Challenge Districts project and for Title I purposes. In addition, a Standards Commission developed and submitted its own standards for approval to the State Board of Education. A group of higher education representatives also embarked on a process of developing their own K-12 standards. California is far from a consensus on curriculum.

The state's Challenge District mathematics standards, like the state's earlier mathematics frameworks, reflect the approach of the National Council of Teachers of Mathematics. In late 1997, the California State Board of Education rejected the recommendations of the Standards Commission and adopted their own version of K-7 mathematics standards, which embraces a more conventional curriculum approach that focuses on math facts and skills and not on concepts. The

Superintendent of Public Instruction has sharply challenged the Board's standards.

The California State Board of Education has not yet adopted language arts standards, but the guidance from various state actors is similarly disjointed. The state education department's language arts task force called for a balance between whole language and phonics instruction; the Governor's $200 million California Reading Initiative targets professional development dollars exclusively on phonics-based instruction. These debates have galvanized segments of the citizenry. One group calls the State Education Department whenever they hear of a curriculum that does not include phonics instruction, and legislators and state board of education members have become wary of anything that refers to whole-language instruction.

We have not yet been in the field to talk to California teachers and administrators. However, the likely consequence of these reversals and competing standards initiatives is confusion and disarray. How can teachers and schools develop their knowledge and skills for reform when leaders lack consensus and the goals of reform are unclear? Which way should teachers and schools move? Will they be penalized for moving in one direction if another approach finally reigns supreme?

These content issues are by no means confined to California, although they have arguably been the most disruptive there in terms of overturning preexisting policy. The question for policymakers elsewhere is whether they can maintain policy direction and continue to incorporate incremental

change if the debates become as politically charged as they have in California, or whether they will suffer the chaos of policy disintegration and mixed messages. Coherence is an important component of building capacity and reinforcing change (Goertz, Floden, and O'Day, 1995).

Even if there is no discord among policy elites, policymakers must be careful in sending coherent messages and not bombarding teachers, schools, and districts with too many messages. As is often the case in large systems, people tend to conceive of their world as the world, and they plan initiatives in their area without regard to what is happening elsewhere. Consolidated planning and standards-based reform may be making some in-roads into more comprehensive and coherent designs, but there is still plenty of fragmentation. For example, state standard-setting for teacher training and professional development is abundant, perhaps too abundant in some cases. There are standards for the teaching profession, standards for new teachers, standards for teacher education programs, standards for experienced teachers, criteria for local planning for professional development, criteria for state professional development activities and grants, and guidelines for teacher professional development plans. Furthermore, federal and local levels of government may have their own standards and criteria. It is a confusing array and may be difficult for locals to see their way through to develop a coherent strategy for building capacity.

Incentives to Build Capacity

Setting standards and desiring to achieve them are necessary but not sufficient conditions for change. The people in the system—the students, teachers, and administrators—must have the capacity to enact change. We have talked about these various capacities and ways policymakers are trying to achieve them. But now we must come back to the word "desire." Strategies for building capacity must take into account whether the policy design adequately considers the motivation of people in the system to take advantage of the capacity-building activities. Motivation is a complex phenomenon, arising from many diverse sources, and policy design only can address one piece of that puzzle (Fuhrman and O'Day, 1996). But motivation can be an important piece. Hence, the question: Do the capacity-building strategies discussed here offer sufficient incentives to teachers, administrators, and students?[18] In many areas, the policymakers with whom we spoke said "no." We also wondered whether the incentives were sufficient.

We consider five areas where incentives may be weak or lacking: incentives to heed professional development standards; incentives for teacher training institutions to improve quality; incentives for teachers to pursue professional development; student incentives; and incentives to engage in the school improvement planning process.

Incentives to Heed Professional Development Standards. Whether professional development standards will improve the quality of teachers' learning experiences depends in part on if these

standards are taken seriously. The question is whether schools and districts have adequate incentives and sanctions to follow these standards. These standards are generally recommended, not required. And, while some states used these standards as criteria in grants and programs or in state professional development activities, few states provided professional development funds directly to schools and districts, so the latter depended heavily upon their general funds for these activities. What incentives do schools and districts have to gear their self-funded activities to these professional development standards? Are suppliers of professional development motivated to comply with the standards?

A related question is whether these standards are sufficiently specific to influence the nature and quality of professional development. Many of the standards are not specifically linked to student content goals. Furthermore, most professional development (like most curriculum and school-based reform programs) has not been rigorously evaluated for its impact on student performance. With only limited, imperfect information, it is difficult for schools and districts to pressure professional development suppliers to improve their quality.

Incentives for Teacher Training Institutions to Improve Quality. A number of state policymakers discussed the problem of establishing strong incentives so institutions of higher education would offer reform-related support to teachers. Many policy-makers felt that teacher education programs were on their own: it was fine if they decided to participate and realign their

programs to meet the goals and needs of reform, but there was little pressure to make them do so.

Of course, high failure rates on state teacher tests or other licensure requirements might damage the reputation of a teacher education program. States often felt pressured, however, to moderate their licensure standards. One sample state planned to lower the cut scores on some content tests required for a provisional teaching certificate because of consistently poor results and to prevent teacher shortages in those areas.

Teacher shortages offer a perennial challenge to state efforts to raise the bar for pre-service and in-service teachers. Florida, Colorado, Texas, and California had acute shortages of special education and bilingual teachers. In the past, the Colorado Board of Education only recognized graduate programs in special education; now the state plans to recognize special educator preparation programs at the undergraduate level. Other states consolidated special education endorsements into generic K-12 endorsements. In 1996-97, California greatly exacerbated the situation by its primary grade class-size reduction initiative. This required hiring thousands of new teachers with emergency permits. (California typically issued about 6,000 emergency permits a year, but by April of the 1996-97 school year, it had issued 10,000.) To handle some of these problems, California allowed special education teachers to be credentialed without meeting all the general education requirements typically needed. In California, the effort to build capacity by improving the teacher-

student ratio had negative effects on efforts to build capacity by improving the knowledge and skills of entry-level teachers.

Many states encouraged or required institutions to meet more rigorous accreditation standards. Several policy-makers, however, argued that accreditation was a weak policy instrument because institutions so rarely lost their accreditation. Constraints against taking such a dramatic action included historical and legal notions of academic freedom and the political repercussions of closing a teacher education institution, particularly in remote areas where they are major employers.

Incentives for Teachers to Pursue Professional Development. Many states required teachers to participate in ongoing professional development to earn relicensure, but policymakers felt that these incentives did little to engage teachers in continuous professional learning. Policymakers argued that many experienced teachers view credit requirements as bureaucratic hurdles rather than serious opportunities to improve practice. Unions and other groups opposed initiatives that would require continuing credits to be related to reform goals or teachers' subject areas. Nor did other requirements, such as school improvement planning or other planning initiatives, ensure that teachers chose professional development activities aligned with reform principles or school needs. Reports on Kentucky schools' professional development plans, for example, revealed that, until recently, the plans did not include common elements on teachers' individual professional growth plans (Cody and Guskey, 1997).

Student Incentives. An emerging issue for state policymakers centers around students' motivation to learn and perform well on state assessments. Students and their parents receive information about their performance achievement on most commercial tests, such as the Iowa Test of Basic Skills or the SAT. But many of the new testing programs in states such as Kentucky, Maryland, California (under its now-defunct CLAS program), and, until recently, Colorado[19] produced only school-level results, not individual reports for students or their parents.[20]

A testing system that produces performance results for schools rather than students was deemed sufficient, even preferred by some policymakers, because they felt that responsibility and accountability should lie primarily with educators. Some Maryland policymakers, for instance, believed that school-level results would stop educators from blaming poor results on the problems of individual students and would stimulate educators to assume more collective responsibility for improvement.

Part of the rationale in favor of school-level reporting was due to the technical constraints of performance-based testing. Because performance-based items take longer to answer than traditional multiple-choice formats, exams cannot cover as much content as traditional tests unless the testing time is greatly extended. One solution is to use a matrix sampling approach, issuing multiple forms of the test to cover more and different material. A drawback, however, is that such sampling can restrict the reliability or usefulness of

the test results for any one student who takes only a portion of the complete exam.

The lack of individual student results from state assessments was becoming a more significant issue in the sample states. Kentucky lawmakers expressed concern about students' motivation to do well without individual scores. In 1997, Colorado legislators completely revamped the testing design to reassure themselves that the state assessments would be able to provide individual results for students and their parents. Some of Maryland's policymakers expressed interest in President Clinton's proposed national test because it offered the promise of individual results for students in elementary and middle schools. And the California Learning Assessment Program, which was the state's perform-ance-based test, was vetoed by Governor Wilson after only two administrations, in part because of its failure to produce reliable individual results (Carlos and Kirst, 1997). As required by a new statute, the new California test will provide individual data.

State assessment programs are not devoid of incentives for students, particularly at the high school level.[21] High school students in Maryland, Florida, Michigan, Minnesota, and Texas received their scores on statewide exams. Michigan used the results to award or deny diplomas. This high-stakes feature, however, could affect the nature of the exams and the extent to which policymakers believe they could hold students accountable for achievement beyond the basic skills. Because of legal challenges and increased dropout rates, Minnesota split its graduation requirements into two components—a required basic skills test and more

performance standards. Local districts could select a subset of performance standards to meet graduation requirements and could substitute their own assessments for any of the state-developed assessments. Maryland policymakers were discussing the extent to which they could use performance-based tasks on the new high school exam. Thus, incorporating strong incentives for students (such as graduation requirements) could influence the extent to which assessments might be aligned to reform goals. Of course, these designs would affect the focus of local change efforts and their strategies for building capacity to improve.

A final critical issue was whether state testing and accountability designs provided sufficient incentives to educators to hold all students to high standards. Kentucky, Maryland, and Colorado developed strategies to motivate educators to include all students in statewide exams, including tighter rules about excluding students from tests, closer monitoring for compliance with these rules, and giving untested students a zero in the overall accountability calculation. The last measure presents a disincentive to educators who unofficially persuade students to miss the test. Despite these measures, we heard many concerns about incentives to exclude the lowest-performing high-stakes systems. Some policymakers mentioned schools or districts that focused on the students closest to meeting satisfactory state standards, but ignored those at the bottom. (For a more detailed discussion of equity issues, see Goertz and Chun, 1997).

Incentives to Engage in the School Improvement Planning Process. While state policymakers viewed school improvement

planning as a necessary or even pivotal component of the change process, the quality of the resulting plans was not yet clear nor were schools engaged in the process. Kentucky, Maryland, and California tied support and technical assistance to school improvement planning, but Colorado and Texas did not. Do schools have the knowledge or commitment to use these processes well? Low-performing schools may be motivated to do so, especially when the state monitors these activities and there are high consequences for failure. Furthermore, do school improvement planning councils have the authority to carry out the plans, and do they have sufficient control over fiscal and human resources? The answer probably depends on the extent to which school and district leaders allow that authority.

Questions for Consideration

State policymakers used many mechanisms to improve the quality of teaching and learning for standards-based reform. This paper reports the most common of these across the eight states in our study. Not all these initiatives were primary in each state, and many states had other important capacity-building efforts to improve teaching and learning. But the prevalence of these strategies should not be ignored. We have explained why states gravitated toward these solutions and discussed their progress and continuing challenges for capacity-building.

We encourage policymakers to consider the whole system when designing their capacity-building strategies. It may be helpful to use a framework such as ours to see whether existing policy strategies and mechanisms address the seven capacities and to explore whether there may be more efficient strategies. The framework may also reveal where there may be gaps. Our eight states paid attention primarily to teachers' and administrators' knowledge and skills, access to reform-related curriculum materials for students and teachers, and the organization and allocation of resources by means of school improvement planning. Although different states addressed other areas of capacity (such as student motivation and readiness to learn, number and quality of social relationships, and material resources), these were less common across our sample. Addressing these other areas and assessing their impact may be essential to sustained improvement under the banner of standards-based reform.

In considering their strategy, analysts may also want to consider whether schools and teachers focus on building different types of capacity at different stages. For instance, evidence suggests that in high-stakes, performance-driven environments, the first focus is on improving students' test-taking skills (Koretz et al., 1996; Wilkerson, 1997), and changing instructional practice comes second. If test scores plateau, as they have in a number of states, will schools begin to focus on second-order changes to meet accountability demands for continuous improvement? One theory is that schools will be compelled to strengthen their instructional programs, and teachers will be compelled to deepen their content and knowledge of pedagogy to make significant changes in their practice.

In conducting such a capacity survey, policymakers should keep in mind the following questions that emerged from our study:

- Does the state's regional infrastructure for technical assistance and professional development have adequate resources, knowledge, and people-power to carry out its assigned responsibilities? Do they use high-quality models of professional development and technical assistance?

- How can the state increase capacity to assist schools in the middle of the performance distribution?

- Does the state have a strategy for helping schools and teachers translate into practice the data generated by the accountability and testing program?

- Do the state's capacity-building initiatives meet the following research-supported criteria: Are the initiatives well-suited to individual school settings? Are the initiatives extended over time providing opportunities for feedback and reflection? Are the initiatives reform-linked and curriculum-specific?

- Can the state play a role in encouraging and brokering research on curriculum and instructional practices that improves the performance of all students?

- Do the state's initiatives provide adequate incentives for students, teachers, schools, districts, institutions of higher education, and other external organizations to build capacity—

particularly capacity that is aligned with standards-based reform? Are there incentives to bring all students up to state performance standards?

- Does the state policy system send coherent and consistent signals to schools and teachers about building needed knowledge and skills?

References

American Federation of Teachers (1997). *Making Standards Matter: A Fifty State Progress Report on Efforts to Raise Academic Standards*. Washington, DC: American Federation of Teachers, Educational Issues Department.

Berman, P., and M. W. McLaughlin (1978). *Federal Programs Supporting Educational Change, Volume VIII: Implementing and Sustaining Innovations*. (Report No. R-1589/8-HEW). Santa Monica: The RAND Corporation.

Carlos, L., and M. W. Kirst (1997). *California Curriculum Policy in the 1990s: "We Don't Have to be in Front to Lead."* San Francisco, CA: WestEd.

Cody, C. B., and T. R. Guskey (1997). "Professional Development," in Lindle, Petrosko and Pankratz (Eds.) *1996 Review of Research on the Kentucky Education Reform Act*, pp. 191-209. Frankfort, KY: Kentucky Institute for Education Research.

Cohen, D. K., and D. L. Ball (1996). "Capacity and Building Capacity for Instruction." Paper presented at the annual meeting of the American Education Research Association. New York.

Cohen, D. K., and H. C. Hill (1998) "State Policy and Classroom Performance: Mathematics Reform in California." *CPRE Policy Briefs*. Philadelphia, PA: Consortium for Policy Research in Education, University of Pennsylvania.

Consortium for Policy Research in Education (1997). *Policies and Programs for Professional Development of Teachers: Profile of the States*. Philadelphia, PA: Author.

Corcoran, T., and M. E. Goertz (1995). "Instructional Capacity and High Performance Standards," in *Educational Researcher*, 24(9), pp. 27-31.

Curry, B., and T. Temple (1992). *Using Curriculum Frameworks for Systemic Reform*. Alexandria, VA: ASCD.

Darling-Hammond, L. (1996). "Teaching and Knowledge." In Sikula, J. (Ed.), *Handbook of Research on Teacher Education*, second edition. New York: Association of Teacher Educators.

David, J. (1997). "The Role of Standards-Based Assessment in Schoolwide Instructional Improvement: Necessary, Perhaps, But Not Sufficient." Paper prepared for the New Standards Evaluation Steering Committee. Palo Alto, CA: Bay Area Research Group.

Davis, M., D. McDonald, and B. Lyons (1997). *A Preliminary Analysis of the Kentucky Distinguished Educator Initiative: A New Approach to Educational Change*. Report prepared for the Kentucky Department of Education. Frankfort, KY: Kentucky Department of Education.

Elmore, R. F. (1993). "The Development and Implementation of Large-Scale Curriculum Reforms." Paper prepared for the American Association for the Advancement of Science. Washington, DC: AAAS.

Elmore, R. F., C. Abelmann, and S. H. Fuhrman (1996). "The New Accountability in State Education Reform: From Process to Performance." In Ladd, H. L. (Ed.) *Holding Schools Accountable* (pp. 65-98). Washington, DC: The Brookings Institution.

Firestone, W. A., M. E. Goertz, and G. Natriello (1997). *The Struggle for Fiscal Reform and Educational Change in New Jersey*. New York, NY: Teachers College Press.

Fuhrman, S. H. (1993). "The Politics of Coherence," in S. H. Fuhrman (ed.) *Designing Coherent Policy: Improving the System* (pp. 1-34). San Francisco, CA: Jossey-Bass.

Fuhrman, S. H., and D. Massell (1992). *Issues and Strategies in Systemic Reform*. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

Fuhrman, S. H., and J. A. O'Day. (1996). *Rewards and Reform: Creating Educational Incentives That Work*. San Francisco, CA: Jossey-Bass, Inc.

Fuhrman, S. H., and A. Rosenthal (Eds.). (1981). *Shaping Education Policy in the States*. Washington, DC: Institute for Educational Leadership.

Goertz, M. E. (1995). "Systemic Reform in Michigan." *Studies of Systemic Reform, Volume II: Case Studies*. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

Goertz, M. E., and T. Chun (1997). "Is This the Main Stream Yet? State Education Policy Designs for All Students." Paper presented at the Association for Public Policy Analysis and Management, Washington, DC. November 7, 1997.

Goertz, M. E., R. E. Floden, and J. A. O'Day. (1995). *Studies of Systemic Reform*. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

Herman, R., and S. Stringfield (1997). *Ten Promising Programs for Educating All Children: Evidence of Impact*. Arlington, VA: Educational Research Service.

Koretz, D. et. al. (1996). *Perceived Effects of the Maryland School Performance Assessment Program*. Los Angeles, CA: National Center for Research on Evaluation, Standards and Student Testing.

Lichtenstein, G., M. McLaughlin, and J. Knudsen (1991). Teacher Empowerment and Professional Knowledge. New Brunswick, NJ: Center for Policy Research in Education, Rutgers University.

Little, J. W. (1993). "Teachers' Professional Development in a Climate of Educational Reform." CPRE Policy Briefs. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

Loucks-Horsley, S. (1997). "The Role of Teaching and Learning in Systemic Reform: A Focus on Professional Development." Draft paper prepared for a meeting at the Learning Development Research Corporation, Pittsburgh, PA.

Lusi, S. F. (1997). The Role of State Departments of Education in Complex School Reform. New York, NY: Teachers College Press.

Massell, D. (1994). "Determining National Content Standards." Massell, D. and M. W. Kirst (Eds.) Education and Urban Society, 26(2).

Massell, D. (1995). "What We Know About Assessing What Students Know: A Literature Review on Alternative Assessment." Unpublished paper. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

Massell, D., and S. H. Fuhrman. (1994). Ten Years of State Education Reform, 1983-1993: Overview with Four Case Studies. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

Massell, D., and M. W. Kirst (1994). "Determining National Content Standards: An Introduction." Education and Urban Society, 20(2), 107-118.

Massell, D., M. W. Kirst, and M. Hoppe (1997). "Persistence and Change: Standards-Based Systemic Reform in Nine States." CPRE Policy Briefs. Philadelphia, PA: Consortium for Policy Research in Education, University of Pennsylvania.

McLaughlin, M. W. (1987). "Lessons from Past Implementation Research." Educational Evaluation and Policy Analysis, 9(2): 171-178.

McLaughlin, M. W. (1991). "The RAND Change Agent Study: Ten Years Later." In A. R. Odden (Ed.) Education Policy Implementation. Albany: State University of New York Press.

McLaughlin, M. W., and J. Talbert (Eds.) (1993). Teaching for Understanding: Challenges for Policy and Practice. San Francisco: Jossey-Bass.

McMillen, M. M., S. A. Bobbitt, and H. F. Lynch (1994). "Teacher Training, Certification, and Assignment in Public Schools: 1990-91." Paper presented at the annual meeting of the American Educational Research Association, New Orleans, Louisiana, as cited in National Commission on Teaching and America's Future, 1996 op cit.

Miles, M. B., and A. M. Huberman (1984) *Analyzing Qualitative Data: A Source Book for New Methods*. Beverly Hills, CA: Sage Publications.

Moses, M. (1996). "Freedom with Accountability." *Insight Magazine, 10* (3). Houston, TX: Texas Association of School Administrators.

Musick, M. (1997). "Setting Education Standards High Enough." Atlanta, GA: Southern Regional Education Board. http://www.sreb.org/MiscDocs/ set_stand.html.

National Board for Professional Teaching Standards (1994). *Toward High and Rigorous Standards for the Teaching Profession*. Washington, DC: Author.

National Commission on Teaching and America's Future (1996). *What Matters Most: Teaching for America's Future. Report of the National Commission on Teaching and America's Future*. New York: Author.

National Governors' Association (1986). *A Time for Results*. Washington, DC: Author.

O'Day, J. A., M. E. Goertz, and R. E. Floden (1995). "Building Capacity for Education Reform." *CPRE Policy Briefs*. New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

O'Sullivan, C. Y., C. M. Reese, and J. Mazzeo (1997) *NAEP 1996 Science Report Card for the Nation and the States*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Petrosko, J. (1997) "Assessment and Accountability" in Lindle, Petrosko and Pankratz (Eds.), *1996 Review of Research on the Kentucky Education Reform Act*, pp. 3-50. Frankfort, KY: Kentucky Institute for Education Research.

Reese, C. M., K. E. Miller, J. Mazzeo, and J. A. Dossey (1997). *NAEP 1996 Mathematics Report Card for the Nation and the States*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Reich, R. B. (1988). *The Power of Public Ideas*. Cambridge, MA: Ballinger,

Resnick, L. B. (1987). *Education and Learning to Think*. Washington, DC: National Academy Press.

Smith, M. S., and J. A. O'Day (1991). "Systemic School Reform." In S. H. Fuhrman and B. Malen (eds.) *The Politics of Curriculum and Testing*, pp. 233-267. Bristol, PA: Falmer Press.

Spillane, J. (1996). "Districts Matter: Local Educational Authorities and State Instructional Policy." *Educational Policy, 10*(1).

Sroufe, G. E. (1967). "Selected Characteristics of State Departments of Education." In R. F. Campbell, G. E. Sroufe, and D. H. Layton (eds.) *Strengthening State Departments of Education*, pp. 18-28. Chicago, IL: Midwestern Administration Center, The University of Chicago.

Tyson-Bernstein, H. (1988). "The Academy's Contribution to the Impoverishment of American Textbooks." *Phi Delta Kappan, 70*, 193-198.

Walker, D. (1990). *Fundamentals of Curriculum*. Saddlebrook, NJ: Harcourt, Brace, Jovanovich.

Wilkerson and Associates. (1997). *The 1996 Statewide Education Reform Survey*. Frankfort, KY: Kentucky Institute for Education Research.

Wilson, S. M. (1997a). California Dreaming: "Whatever happened to mathematics reform in California?" Paper presented at the research pre-session of the National Council for Mathematics Teachers, St. Paul, MN.

Wilson, S. M. (1997b). "I Am Part of All that I Have Met: Toward a Better Understanding of Teacher Learning." The Alba Thompson Memorial Lecture at the annual meeting of the Psychology of Mathematics Education Association, Normal, IL.

Appendix A
Status of Standards and Assessments in the Eight States

	STANDARDS	TESTING
CA	• A 1995 law created the State Commission for the Establishment of Academic Content and Performance Standards (CEACP) to create voluntary K-3 standards in reading, writing, and mathematics and to establish graduation requirements by January, 1998. • Since the early 1970s, the State Board of Education (SBE) has adopted curriculum frameworks to guide textbook selection. They are advised by the Curriculum Commission. These activities are continuing. In late 1997, the SBE adopted new mathematics frameworks with a basic skills focus. • Law also allows districts to adopt their own standards. • The state department of education adopted its own draft content and performance standards for the superintendent's Challenge Initiative in which a group of districts participate. • The Business Roundtable developed standards for high school and graduation.	• In 1994, the performance-based *California Learning Assessment System* (CLAS) was suspended. • A 1995 law authorized the *California Assessment of Academic Achievement* (CAAA) for assessment of academic subjects in grades 4, 5, 8, & 10. CAAA had two components, a *Pupil Incentive Testing Program* offered districts $5/pupil incentive to administer a locally-selected, SBE-approved norm-referenced test in grades 2-10. The second component will be a statewide test in grades 2-11. In late 1997, the SAT-9 was selected.

	STANDARDS	TESTING
CO	• In 1995, the SBE adopted *Colorado Model Content Standards,* its "first tier" model content standards in mathematics, reading/writing, science, history, and geography; performance standards were adopted in 1996. "Second tier" standards in visual arts, music, physical education, foreign languages, economics, and civics will be adopted in 1998. • Districts were required to adopt local standards that "meet or exceed" state content standards by 1996-97.	• In 1996-97, the *Colorado Student Assessment Program* was administered in reading/writing for grade 4. The test design was amended by the legislature in 1997 and will be phased in over a five-year period. It will eventually include mathematics and science in grades 3, 5, and 8. • A 1993 state law requires local assessments aligned with local content standards in at least grades 4, 8, and 10.
FL	• In 1996, the SBE adopted *Sunshine State Standards* in language arts, mathematics, science, social studies, the arts, foreign languages, and health/physical education.	• In 1996-97, the *Florida Comprehensive Assessment Test* (FCAT), which is aligned with state standards and covers reading and mathematics for grades 4, 5, 8, and 10, was field-tested and was expected to be fully implemented in 1997-98. • In 1995-96, the *High School Comprehensive Test* was made more rigorous and is required for graduation. • *Florida Writes!* is administered in grades 4, 8, and 10. • Districts must select and administer a norm-referenced test in reading and mathematics in grades 4 and 8.

	STANDARDS	TESTING
KY	• In 1991, the state adopted *Kentucky's Learning Goals and Valued Outcomes*, which were rewritten in 1994 and renamed as *Learning Goals and Academic Expectations*. Kentucky has standards in mathematics, language arts, writing, science, social studies, arts and humanities, and practical living/vocational technology.	• Since 1992, the state has administered the *Kentucky Instructional Results Information System*, which is aligned with standards. It covers reading, writing, mathematics, science, social studies, arts and humanities, and practical living/vocational studies in grades 4, 5, 7, 8, 11, and 12. An *Alternate Portfolio* is administered for seriously disabled students in grades 4, 8, and 12. • Since 1997, the state has administered *CTBS/5* in reading/language arts and mathematics in grades 3, 6, and 9.
MD	• In 1990, the SBE adopted *Learning Outcomes* for grades 3, 5, and 8 in reading, writing, mathematics, social studies, and science. • In 1996, the SBE adopted *High School Core Learning Goals* in English, mathematics, science, and social studies. "Skills for Success" standards are integrated across subject areas.	• Since 1991, the state has administered the *Maryland State Performance Assessment Program* (MSPAP) in grades 3, 5, and 8. It covers reading, writing, language arts, social studies and science. • Maryland administers the *CTBS/5* in grades 2, 4, and 6 in reading and language arts. • The *Maryland Functional Tests* in reading, writing, mathematics, and citizenship have been required for graduation since 1981. Maryland is developing new *High School Assessments* in English, social studies, mathematics, science, and Skills for Success.

	STANDARDS	TESTING
MI	• In 1995, the SBE adopted model *Michigan Curriculum Framework (Tier I)*, which contains *Michigan Content Standards* and *Draft Benchmarks* in mathematics, language arts, science, and social studies. There are also draft frameworks and model standards in arts education, career and employability, and world languages. • Districts may adopt their own core curriculum standards if they describe how their standards differ from the state model standards.	• Since 1988-89, the state has administered the *Michigan Educational Assessment Program* (MEAP) in reading and mathematics; science was added in 1996, and social studies will be added in 1998-99. Students are tested in grades 4, 5, 7, 8, 10, and 11. Revised versions of mathematics and language arts tests aligned to standards are planned for 2000-01. • In 1996, the state administered the *High School Proficiency Test* in grade 11. It assesses Communication Arts (reading and writing), mathematics, and science.
MN	• The *Graduation Rule* contains two sets of standards: *Basic Standards* in reading, mathematics, and writing and *Profile of Learning* standards, which are performance-based, inter-disciplinary standards in math, reading, writing, science, social studies, and the arts.	• In 1996-97, the state administered *Basic Standards*, basic skills tests in reading and mathematics in 8th grade (writing was administered in 1997-98). These are required for graduation for the class of 2000. Districts may use these or other tests to demonstrate students' performance in basic skills. • Beginning in 1997-98, students also must pass a subset of the *Profile of Learning* standards for graduation. The state has model performance tasks; districts may use these or other tests. • Beginning in 1997-98, the state will administer Minnesota *Comprehensive Assessments*, criterion-referenced tests aligned to the *Profile of Learning* standards, in grades 3, 5, and 8 in reading, mathematics, and writing. These tests are to check student progress toward the standards. • State requires districts to assess in grades 3, 6, and 9 in mathematics and language arts. The state also requires districts to administer performance assessments in high school.

	STANDARDS	TESTING
TX	• In 1997, the SBE adopted the *Texas Essential Knowledge and Skills* (TEKS) in agricultural science and technology education, business education, English, language arts and reading, fine arts, health science technology education, home economics education, industrial technology education, languages other than English, marketing education, math, science, social studies, trade and industrial education, health and physical education, and technology applications to replace previous *Essential Elements*.	• Since 1990, the state has administered the *Texas Assessment of Academic Skills* (TAAS) in reading, writing, mathematics, science, and social studies in grades 3-8 and at the exit level (usually grade 10). TAAS is aligned with the *Essential Elements* and is being realigned to the new *Texas Essential Knowledge and Skills*. There are also end-of-course exams in biology, algebra, U.S. history (in development), and English (in development).

Appendix B
State-Level Respondents Interviewed, 1996-97

State Department of Education Staff

1. Superintendent or Deputy Superintendent
2. Accountability Director
3. Curriculum Director
4. English Language Arts Curriculum Specialist
5. Mathematics Curriculum Specialist
6. Assessment Director
7. Teacher Preparation, Licensing, and Certification Director
8. Professional Development Director
9. Title I Director
10. Special Education Director
11. Bilingual Education Director
12. School Finance Director
13. Goals 2000 Director

Elected or Appointed Officials

1. State Board of Education President
2. Governor's Education Aide
3. Education Committee Leaders
4. Legislative Staff for Education

Interest Groups

1. Teachers Union Representative
2. Business Community Representative

Appendix C
Florida's 12 Educator Accomplished Practices

Assessment	Uses assessment strategies to assist the continuous development of the learner.
Communication	Uses effective communication techniques with students and all other stakeholders.
Continuous Improvement	Engages in continuous professional quality improvement for self and school.
Critical Thinking	Uses appropriate techniques and strategies that promote and enhance critical, creative, and evaluative thinking capabilities of students.
Diversity	Uses teaching and learning strategies that reflect each student's culture, learning styles, special needs, and socio-economic background.
Ethics	Adheres to the Code of Ethics and Principles of Professional Conduct of the Education Profession in Florida.
Human Development and Learning	Uses an understanding of learning and human development to provide a positive learning environment that supports the intellectual, personal, and social development of all students.
Knowledge of Subject Matter	Demonstrates knowledge and understanding of the subject matter.
Learning Environment	Creates and maintains positive learning environments in which students are actively engaged in learning, social interaction, cooperative learning, and self-motivation.
Planning	Plans, implements, and evaluates effective instruction in a variety of learning environments.
Role of Teacher	Works with various education professionals, parents, and other stakeholders in the continuous improvement of the educational experiences of students.
Technology	Uses appropriate technology in teaching and learning processes.

Appendix D
Maryland's New Design for Teacher Education

In June 1995, the Maryland Higher Education Commission approved its Teacher Education Task Force Report, *The Redesign of Teacher.* The focus of the *Redesign* was to prepare teacher candidates in a way that is both research-based and has a strong clinical component that places pre-service students in the teaching environment. The state's Program Approval process and the development of a network of Professional Development Schools are two of the major mechanisms for achieving these goals. By the year 2000, the Program Approval process will require institutions of higher education to describe the progress they have made in meeting components of the *Redesign*, which include:

- a solid foundation in an academic discipline, either through a degree in a single academic content area, a degree in an academic interdisciplinary or multidisciplinary program, or a performance-based undergraduate teacher education program;

- substantive math, science, and technology backgrounds; and

- an extensive internship in a Professional Development School that provides the candidate with the opportunities to master the combination of theory and practice inherent in the Essential Dimensions of Teaching; to work with children from diverse backgrounds, their parents and their communities; and to work with students with special learning needs and experience inclusive strategies for integrating regular and special education students into their classrooms.

End Notes

1. Cohen, D. K., and D. L. Ball (1996). "Capacity and Building Capacity for Instruction." Paper presented at the annual meeting of the American Educational Research Association.

2. Goertz, M. E., R. E. Floden, and J. O'Day (1995). *Studies of Education Reform: Systemic Reform.* New Brunswick, NJ: Consortium for Policy Research in Education, Rutgers University.

3. Sroufe, G. E. (1967). "Selected Characteristics of State Departments of Education." In R. F. Campbell, G. E. Sroufe, and D. H. Layton (eds.) *Strengthening State Departments of Education,* pp. 18-28. Chicago: Midwestern Administration Center, The University of Chicago.

4. Unlike the other states listed here, the new accountability proposal in Colorado would allow school districts to write their own accountability plan that *could* include reconstitution. Districts would define the criteria locally.

5. Choice was limited in the sense that it did not include private school selections. In Kentucky and Texas, school choice was triggered only for families whose children attended low-performing schools.

6. We do not discuss the role of large suburban and city education departments in providing professional development here. Discussion about these departments was largely absent from the responses of our state-level interviewees, except to note that these were high-capacity organizations that did not need state assistance. After we conduct in-depth research in the districts in years two and three, their role will be considered.

7. The state funds a small proportion ($10,000) of these centers' total operation budget.

8. Participation in these consortia were mandated until 1996, when state law allowed districts to withdraw if they wished.

9. Of course not only states sponsor and nurture networks. For example, the Kentucky Academy for School Executives has a strong network of providers for various professional topics. See discussion of Professional Associations on pages 19 and 20.

10. In 1997, the Kentucky Department of Education established the Kentucky Leadership Academy to expand the training first offered only to Distinguished Educators. Now, administrators from any school may elect to participate.

11. The KERAS Fellows Program ended in 1995, but there is a movement to reinstitute it.

12. To receive these funds, districts had to guarantee that 90 percent or more of their teachers would participate in the in-service programs.

13. Constructivist teaching proposes that students can best learn analytic and problem-solving thinking skills when they are actively involved in the material, have an opportunity to apply what they are learning to meaningful situations, and have the opportunity to explicitly lay out and challenge theories about the way things work (Resnick, 1987).

14. For example, Virginia's content standards were more explicit about content. Some Texas education board members argued for similar documents and wanted grade-by-grade standards. A group of teachers dissatisfied with the state's approach drafted and circulated their own English language arts standards. But many felt strongly that Texas Essential Knowledge and Skills Standards (TEKS) should be a framework for directing—but not determining—local curriculum decisions. In fact, Texas considered preparing a document that would identify materials that districts could use to support TEKS, but the idea was abandoned when it was realized that the guidelines would likely become *de facto* requirements and run contrary to the state's explicit goal of leaving decisions about learning in the hands of decision-makers. Of course Texas remains a textbook adoption state, but it is now producing two lists of materials: one "conforming" and one "non-conforming" to inform people about more options.

15. The role of Distinguished Educators in schools will be more extensively studied over the next few years by another CPRE project on professional development.

16. These workshops were Replacement Unit Workshops on Marilyn Burns Institutes. The latter provided workshops focused on specific math topics in the framework and included math replacement units that Ms. Burns developed. Again, they were consistent with the California reforms.

17. These numbers represent the average of indicators. In 1996, only one elementary school, one middle school, and 18 high schools achieved the satisfactory performance levels on **all** variables with performance standards.

18. By incentives, we include both positive and negative incentives.

19. A 1993 state law in Colorado required that new state tests should provide *school- and district-level* information, while districts assessments would have to provide results for *individual* students in the same subject areas. The state tests would function as a check on whether districts were meeting or exceeding state standards. This design was changed, as will be discussed.

20. Maryland does not have a high school test that provides individual scores. Parents may request individual results for students in lower testing grades, but the test design provides partial and unreliable results so they are not provided on a routine basis.

21. Colorado and Florida required that third grade students pass a reading assessment to be promoted to the next grade. Colorado students could progress in other subjects except reading. In 1997, Florida required districts to provide remedial assistance to these students and allowed districts to suspend instruction in other subjects if so desired.