



Examining context and challenges in measuring investment in professional development: A case study of six school districts in the Southwest region



Institute of Education Sciences
U.S. Department of Education



Examining context and challenges in measuring investment in professional development: a case study of six school districts in the Southwest Region

September 2008

Prepared by

Jay G. Chambers, Ph.D.
American Institutes for Research

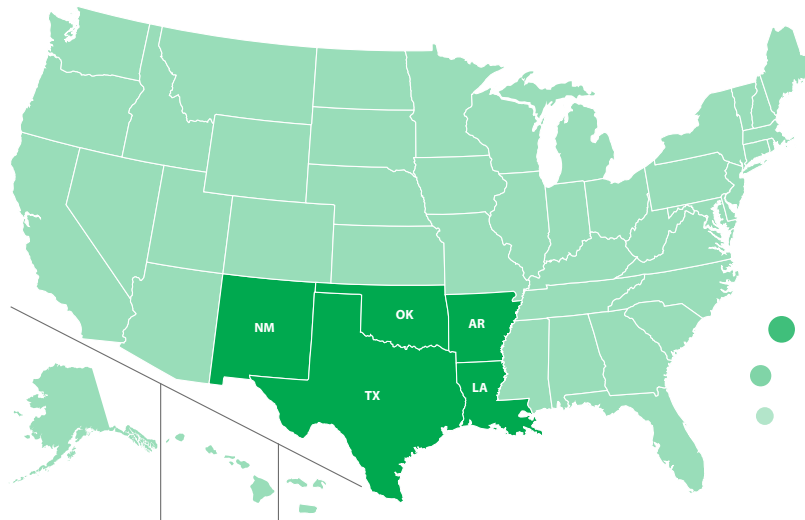
Irene Lam, M.A.
American Institutes for Research

Kanya Mahitivanichcha, Ph.D.
University of Hong Kong



Institute of Education Sciences

U.S. Department of Education



Issues & Answers is an ongoing series of reports from short-term Fast Response Projects conducted by the regional educational laboratories on current education issues of importance at local, state, and regional levels. Topics of Fast Response Projects change to reflect new issues. Topics are identified through lab outreach and requests for assistance; from policy-makers and educators at state and local levels; and from communities, businesses, parents, families, and youth. All Issues & Answers reports meet the standards for scientifically valid research of the Institute of Education Sciences (IES).

September 2008

This report was prepared for the IES under contract ED-06-CO-0017 by Regional Educational Laboratory Southwest administered by Edvance Research, Inc. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.

This report is in the public domain. While permission to reprint this publication is not necessary, it should be cited as follows:

Chambers, J. G., Lam, I., & Mahitivanichcha, K. (2008). *Examining context and challenges in measuring investment in professional development: a case study of six school districts in the Southwest Region* (Issues & Answers Report, REL 2008–No. 037). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

This report is available on the Regional Educational Laboratory web site at <http://ies.ed.gov/ncee/edlabs>.

Examining context and challenges in measuring investment in professional development: a case study of six school districts in the Southwest Region

This study is an exploratory inquiry into the context and challenges of measuring investment in professional development in six Southwest Region school districts. The study estimated annual spending of approximately \$150–\$600 per pupil—or 2–9 percent of total spending. These figures likely underestimate the full investment in professional development in these districts because of the inability to track more integrated professional development activity that is a natural part of a teacher’s work day or week.

This descriptive analysis illustrates some of the challenges in measuring investment in professional development and concludes by highlighting a promising strategy—using online data systems—that might improve the accuracy of spending estimates and the tracking of expenditures.

Previous literature defines two categories of professional development: traditional professional development, such as workshops, conferences, and college courses for credit, and integrated professional development, such as teacher collaboration during common planning periods, teacher mentoring, academic coaches, observation of others, and individual

research projects. This study adapts the conceptual framework established by Odden et al. (2002) to derive cost estimates of professional development in the sample districts.

Data sources were identified for six districts in four states in the Southwest Region—two in Arkansas, two in New Mexico, one in Oklahoma, and one in Texas—to determine how much these districts were spending on professional development.

Before initial contact with the targeted districts, state and district policies and practices likely to influence investment in professional development were investigated. The four states covered by this study require districts to develop formal plans for implementing professional development. These planning documents were obtained from the six districts in advance of data collection and helped identify the potential financial implications of implementing professional development. For example, the documents delineated district plans for the number of in-service days for various staff, district support for other training and for advancing teacher licensure, and the use of academic coaches and mentoring to train and support teachers and other professional staff.

The framework from Odden et al. (2002) was used to identify data sources that could estimate the six districts' total investment in professional development and disaggregate the total by object of expenditure (for example, personnel and nonpersonnel resources), function (instruction, instructional support, and administration), and source of funding. Based on these six districts' data, an estimated 2–9 percent of district spending was allocated to

professional development activities. As with previous studies, this probably underestimates investment because of the difficulty of obtaining accurate data on professional development that is more integrated into the daily and weekly work of teachers. Future research could explore how feasible online systems would be for obtaining more accurate data on the time allocation of education professionals to better estimate the cost of professional development.

September 2008

TABLE OF CONTENTS

Why this study?	1
Overview of the study	1
Literature review and conceptual framework	4
Types of professional development	4
Conceptual framework for deriving estimates	6
State policies and practices that influence professional development	7
State requirements for district improvement plans	7
Professional development and certification requirements	7
State strategies for supporting professional development	8
District policies and practices related to professional development	8
District improvement plans	8
Organization of professional development at the district level	9
Professional development delivery strategies	9
District strategies for supporting professional development	10
District tracking of professional development	11
District spending on professional development	11
Estimated district spending on professional development	11
District personnel and nonpersonnel spending on professional development	12
Spending by districts by function	13
Funding for professional development by source	14
Conclusions and suggestions for future research	15
Appendix A Recruitment of districts in the study's sample	17
Appendix B Cost analysis framework	18
Appendix C Policies and characteristics of state and district professional development	21
Notes	28
References	30
Boxes	
1 Sample selection process, characteristics of districts, and data collection procedures	2
2 Traditional and integrated types of professional development activities	5
Tables	
1 Estimated professional development spending in six study districts, 2005/06	12
2 Estimated personnel and nonpersonnel professional development spending by districts as a share of professional development spending, 2005/06 (percent)	13
3 District estimated expenditures on professional development, by function, 2005/06 (percent)	13

4	Estimated funding by districts for professional development, by source, 2005/06 (percent)	14
B1	A cost structure for professional development	19
C1	District-level planning and implementation of professional development: characteristics and policy dimensions	21
C2	State-by-state comparison of professional development policies and requirements	24

This study is an exploratory inquiry into the context and challenges of measuring investment in professional development in six Southwest Region school districts. The study estimated annual spending of approximately \$150–\$600 per pupil—or 2–9 percent of total spending. These figures likely underestimate the full investment in professional development in these districts because of the inability to track more integrated professional development activity that is a natural part of a teacher’s work day or week.

WHY THIS STUDY?

The No Child Left Behind (NCLB) Act of 2001 places special emphasis on ensuring that every child has access to highly qualified teachers. States are required to set standards so that all teachers—both those in core academic subjects and those who teach students with limited English proficiency and students with disabilities—are highly qualified.

State and district decisionmakers have encouraged and funded strategies for professional development for teachers and education leaders, and NCLB targets substantial federal funding to support such activities. To be successful, however, investment in professional development must be managed and implemented properly. States and districts must identify effective strategies that directly improve teachers’ knowledge, skills, and practices, and then measure the associated costs so that funds are invested in the most effective strategies. This report presents the results of an exploratory inquiry into the complexities of measuring investment in professional development in six school districts in four Southwest Region states.

Meetings with stakeholders in the region identified a need for information about the cost effectiveness of various professional development activities. The Southwest Regional Educational Laboratory proposed this study to learn more about how to collect the necessary expenditure and cost data to support such analyses.

OVERVIEW OF THE STUDY

This study had four steps. The first was a literature review to define professional development, identify what techniques previous researchers had used to measure investment in professional development, and provide some benchmarks for previous estimates of spending on professional development.

Second, a sample of six districts—two in Arkansas, two in New Mexico, one in Oklahoma, and one in Texas—was selected to participate in the study (see box 1 for a detailed description of the

BOX 1

Sample selection process, characteristics of districts, and data collection procedures

Ten school districts in the Southwest Region were initially contacted to participate in this study (see appendix A for details). The intent was to recruit nine districts,¹ with at least one from each of the five states in the region, that differed in size and poverty level and that would be willing to participate. Initially, districts from which data had been collected for the Targeting and Resource Allocation Component of the National Longitudinal Study of the No Child Left Behind Act, conducted for the U.S. Department of Education, were targeted. Target districts in Louisiana were dropped because of Hurricane Katrina.

Four of the ten districts agreed to participate, and two more were recruited. The final sample consisted of two districts in Arkansas, two in New Mexico, one in Oklahoma, and one in Texas, covering four of the five states in the region. As an exploratory study, the aim was to obtain an in-depth understanding of investment in professional development in a limited number of

districts, so the final, smaller sample size was considered adequate. The sample was not intended to be nationally or regionally representative.

The sample districts varied in location, size, and student characteristics (see table). The largest districts enrolled more than 10,000 students. The smallest districts enrolled 2,500–5,000 students. Students eligible for free or reduced-price lunch—a measure of student poverty—varied from 30 percent to 90 percent.

Working with a sample of districts that volunteered for the study enhanced the ability to access district-level data. Better access to data and the cooperation of district officials were critical for the study.

Data collection strategies and informal interviews with district staff took into account the district's leadership and organization and how they might influence the planning and implementation of professional development. Thus, district organization charts, professional development planning documents, staff professional development records, and other documents were collected. This background

information helped determine whom to interview for fiscal and nonfiscal data.

To identify potentially important data sources, it was important to understand the context of state policies and associated reporting requirements for professional development, which helped determine how professional development was implemented and tracked at the district level. This information helped craft questions for informal interviews with district staff and informed the approach to collect and analyze district documents. Some preliminary information was also available from U.S. Department of Education web sites.

Informal phone interviews with state-level officials were conducted to clarify professional development policies and requirements. These policies also specified the minimum levels of time that teachers and other professional educators were required to spend on these activities. In particular, four questions were pursued:

- Does the state require districts to develop a professional development plan?

(CONTINUED)

Characteristics of sample districts

State and urbanicity	Enrollment ^a	Share of students in poverty (percent) ^a	Share of students who are non-White (percent) ^a	Grade levels
Arkansas, small town	2,500–5,000	60	60	K–12
Arkansas, mid-size city	5,000–10,000	70	80	K–12
New Mexico, small town	2,500–5,000	50	80	PreK–12
New Mexico, suburb	>10,000	30	50	K–12
Oklahoma, suburb	>10,000	30	20	PreK–12
Texas, city	>10,000	90	100	PreK–12

a. To protect district identities, enrollments are presented in broad ranges, and percentages are rounded to the nearest 10 percent.

Source: Authors' analyses based on 2004–05 data from U.S. Department of Education, National Center for Education Statistics (2007), district documents, and interviews with district personnel.

BOX 1 (CONTINUED)

Sample selection process, characteristics of districts, and data collection procedures

- Are professional educators in each state required to receive a specific number of hours of training to maintain certification?
- What kind of data are districts required to collect to ensure that professional staff receive this certification?
- Does the state earmark funds for district professional development?

After the initial contact with each district, administrative staff identified a central point of contact (a study liaison) to find key district staff who could provide the necessary documents and data. An informal interview was used and varied depending on the district's organizational structure. For example, in a district in which professional development was decentralized, the study liaison arranged informal interviews with content directors, division chairs, and department heads responsible for managing the needs assessment and implementing professional development within their purview. These individuals generally had access to budget documents and records, such as staff hours spent on professional development. Most of these interviews were conducted during on-site visits.

Financial staff from each district provided expenditure reports on professional development that contained specific functions (for example, instruction, instructional support, and administration), objects

of expenditure (for example, personnel, tuition and fees, travel, and purchased services), and some details about money spent. Table C1 in appendix C presents data sources for deriving the cost estimates of each component.

Fiscal reports were used in several districts to estimate the costs of professional development because they were the most reliable sources of expenditure data. But some reports provided only aggregated numbers. Although satisfactory for this study, the aggregate data made it impossible to obtain consistent or reliable data on spending by type of professional development activity, subject or content area, and area of special needs—all of which were originally to be studied. The inability to disaggregate data by categories of professional development made it impossible to analyze cost-effectiveness by type of professional development activity.

Estimates from several sources were used to compile a more complete picture of professional development spending in each district. Liaisons at five districts reviewed the data, agreed with the methodology and spending estimates, and verified the accuracy of the information related to state and district professional development requirements.² Despite efforts to develop comprehensive estimates of district investment in professional development, the primary data sources tracked mostly formal, more traditional forms of professional development. Thus, the estimates do not include all the

integrated professional development at the school and individual teacher levels.³ (See box 2 for more information about traditional and integrated professional development.)

A flexible data collection strategy was needed to account for the various ways professional development was organized, managed, and reported across the six districts. A combination of data sources was used, including standard fiscal or payroll reports and documents, detailed budgeting documents from individual departments, interviews with department managers, and other reporting structures (for example, online or other electronic course registration systems) maintained by some districts and focused specifically on professional development. Using multiple data sources to obtain the cost estimates illustrates the complexity of measuring investment in professional development. These districts do not have a single source of data for this information. Thus, cost estimates and their variations were cautiously interpreted because of the potential incompatibility of data sources across districts.

Notes

1. Limiting the sample to nine districts would obviate the need for prior clearance from the Office of Management and Budget.
2. The liaison for the sixth district did not respond to review requests.
3. Although it was difficult to ascertain all expenses related to integrated professional development, some activities (for example, formal mentoring programs) supported by districts were captured through fiscal data (for example, recorded stipends paid to mentor teachers).

selection process as well as the characteristics of the districts and the data collection process). Each district was contacted for data to estimate its investment in professional development. The initial contacts were also used to learn more about state and district policies and practices that were likely to influence investment in professional development activities. State web sites were searched, and state administrators were interviewed to learn more about each state's requirements for and support of professional development. The four states covered by this study require districts to develop formal plans for implementing professional development. These planning documents were obtained from the six districts as a precursor to data collection and helped identify potential data sources and techniques for estimating the resources devoted to professional development. Specifically, these plans helped identify the potential financial implications of implementing professional development. For example, the documents delineated district plans for the number of in-service days for various staff, district support for other training activities and for advancing teacher licensure, and the use of academic coaches and mentoring to provide training and support for teachers and other professional staff.

Third, based on the literature review, the conceptual framework initially developed by Odden et al. (2002) was adapted to derive cost estimates of professional development. The framework classifies cost elements into six categories: teacher (or personnel) time; training and coaching; administration; materials, equipment, and facilities; travel and transportation; and tuition and conference fees. The analysis then sought to identify extant data sources that would permit estimating the sample districts' total investment in professional development and disaggregating investment by object of expenditure (for example, personnel and nonpersonnel resources), function (in effect, instruction, instructional support, and administration), and source of funding. Based

on the six districts' data, an estimated 2–9 percent of district spending was allocated to professional development.

Fourth, to assess data limitations, the conclusions drawn from the various documents, files, and interviews with district staff were reviewed. This analysis suggests that the results of this study, like previous studies, underestimate district investment in professional development because of the difficulty of obtaining accurate data on professional development that is more integrated into the daily and weekly work of teachers. Suggestions for possible future research into areas that might address some of these limitations are offered at the end of the report.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

This section summarizes the literature review on the types of professional development and techniques previous researchers had used to measure investment in professional development and to provide benchmarks for previous estimates of spending on professional development.

Types of professional development

This study defines *professional development* as all activities that help education professionals develop the skills and knowledge required to achieve their school's education goals and meet the needs of students. It is classified into two broad categories: traditional and integrated (sometimes referred to as reform) activities (see box 2).

Studies suggest that integrated professional development activities have a more positive impact on teacher skills and knowledge because they allow sustained, intensive, and active learning, and teachers tend to integrate such learning into their daily professional lives (Garet et al. 1999; Garet et al. 2001). In addition, several experts have suggested that integrated activities may be better suited to how teachers learn and change

Integrated professional development activities have a more positive impact on teacher skills and knowledge because they allow sustained, intensive, and active learning

BOX 2

Traditional and integrated types of professional development activities

Traditional professional development activities are structured, occur outside the classroom, and are not necessarily incorporated into a teacher's daily professional life. They often involve education leaders, professors of education, consultants, or other experts imparting knowledge to teachers in a formal setting, during scheduled hours, and over a defined period of time. Examples (adapted from Garet et al. 1999) include:

- Conferences, both in and out of district. Out-of-district conferences may be provided by professional organizations, regional centers, state departments of education, or other organizations.
- College courses for credit.
- Workshops or institutes, both in and out of district.

Most traditional professional development activities are short and involve less active learning (a top-down approach to disseminating knowledge) and less collaborative interaction among peers. Although these types of activities can raise teacher awareness and deepen knowledge and skills, they have been criticized

as being ineffective in providing teachers with the tools to foster meaningful changes in student practices (Loucks-Horsley et al. 1998).

Integrated professional development activities are more incorporated into teachers' daily professional lives than traditional professional development activities. Integrated activities involve more active learning and occur continually, allowing more sustained learning. Examples (adapted from Garet et al. 1999) include:

- Study groups in which teachers engage in regular, collaborative discussions on specific topics (focused mostly on content) to further their knowledge in disciplines or pedagogical approaches.
- Collaborative networks for meeting other teachers and discussing topics of interest (for example, in person or electronically or locally, regionally, nationally, or internationally).
- Teacher mentoring, coaching, lead teaching, or observation in a one-on-one situation, usually in the classroom, in which teachers work with more experienced teachers over an extended period.
- Immersion or internship activities through which teachers

work with other professionals in specific industries or labor settings related to their content area.

- Teacher resource centers that provide professional development materials and are staffed by a lead or resource teacher.
- Participation in school committees or task forces that focus on curriculum improvement, student assessment, or self-directed learning activities (for example, reading professional journals or browsing the Internet for information about content-related research).
- Individual learning activities that allow teachers to reflect on their teaching practices and the students they serve and that foster sustained learning.

Most discussions about professional development focus on teachers because of the critical and unique role it plays in their daily and direct contact with students. However, all types of education staff—including school administrators and instructional support personnel—can benefit from both formal and informal professional development activities, because such activities involve sharing experiences, observing others, and networking with other professionals in similar positions.

their teaching practices (Darling-Hammond 1996; Little 1993; Loucks-Horsley et al. 1998). Integrated models of professional development are also more likely to align with the professional goals and needs of teachers (Darling-Hammond 1997). A

national survey conducted by the U.S. Department of Education (1999) found that many teachers believe that integrated professional development activities are more helpful than traditional forms of professional development.

Conceptual framework for deriving estimates

Because of the variety of ways in which professional development occurs, measuring investment in it requires understanding the organization, planning, and implementation of professional development at the district level. Identifying the resources and costs associated with each type of professional development activity is important if different kinds of activities have different levels of effectiveness on teachers' instruction.

Professional development appears in a variety of places in district budgets—though not always clearly identified as such. For example, district fiscal systems rarely systematically identify the time teachers spend in professional development before and after school, at in-service training, or at planning or mentoring activities with other professional staff. This complicates measuring investment in professional development and makes calculating a comprehensive total of investment more difficult.

To identify professional development spending, expenditures and cost estimates from a variety of data sources must be combined. All the structure and components of activities must be identified and measured (see, for example, Levin 1983; Chambers and Parrish 1994). Because program budgets often poorly reflect the total costs of a particular intervention or service, this approach avoids problems by delineating, counting, and costing out the specific personnel resources devoted to particular activities (Levin and McEwan 2001).

Odden et al. (2002) provide a framework for organizing cost data on professional development activities with six core cost components (teacher time; training and coaching; administration of professional development; materials, equipment, and facilities; travel; and tuition and conference fees) and two optional elements (future salary obligations, and

research and development). The framework has been used and adapted to estimate district- and school-level expenditures in professional development, providing benchmarks of previous estimates of spending on professional development (Archibald and Gallagher 2002; Fermanich 2002; Miles et al. 2004).

Archibald and Gallagher (2002) examine professional development activities at an urban high school. Based on budget and planning documents and interviews with school and district personnel, they estimate that the high school's teachers received \$9,711 (or \$10,882 in constant 2006 dollars) of professional development resources; 98 percent was spent on teacher time and training or coaching.

Fermanich (2002) examines both district- and school-level information (including district budget and planning documents, and interviews with district and school officials) and concludes that schools spent a "significant amount on professional development," with an average of \$7,700 (\$8,629 in constant 2006 dollars) per teacher. Moreover, the expenditures varied greatly, from \$2,900 to more than \$16,000 (or \$3,250 to \$17,930 in constant 2006 dollars) per teacher, in part reflecting the school's academic performance, availability of discretionary school funds, and the preferences of school staff.

Miles et al. (2004) also applies this framework. Spending on professional development among districts in this study range from \$2,100 to \$7,900 per teacher (\$2,240 to \$8,430 in constant 2006 dollars)—or 2.2–6.9 percent of district budgets.¹

Before Miles et al. (2004), a few research studies had used different approaches and data sources to estimate professional development expenditures by districts and states. Many of the studies used national databases, fiscal reports from districts, or interviews with district officials to examine such spending. Findings inevitably varied considerably because studies used different definitions and methodologies (for example, Hertert 1997;

Because of the variety of ways in which professional development occurs, measuring investment in it requires understanding the organization, planning, and implementation of professional development at the district level

Little et al. 1987; Killeen, Monk, and Plecki 2002). Although most studies identified some of the elements of investment in professional development, the framework developed and applied by Odden et al. (2002) provides a more systematic structure for organizing and coding the data (Miles et al. 2004). This study uses Odden et al.'s (2002) framework because of the prominent role that teacher time plays (and for that matter, the time of other professional educators) in estimating the funds devoted to professional development activities.

STATE POLICIES AND PRACTICES THAT INFLUENCE PROFESSIONAL DEVELOPMENT

State requirements for and policies on professional development can significantly influence how districts plan and allocate resources (see table C2 in appendix C for a comparison of professional development requirements and policies among the four states in this study). Many such decisions have financial and managerial implications for planning and organizing professional development programs.

This section summarizes some of the state policies and practices that influenced the implementation of professional development activities in the four states in this study. Particular attention is paid to factors that inform data collection in the districts.

State requirements for district improvement plans

The four states in this study require districts to develop a school improvement plan that addresses district- or school-level professional development needs. The Arkansas Comprehensive School Improvement Plan includes a section on professional development. In Oklahoma, until 2006/07, each school district had to submit a comprehensive local education plan to the state every six years, including a plan for professional development needs, to meet accreditation requirements. In New Mexico and Texas district improvement plans generally include dimensions related to professional development needs and strategies.

Professional development and certification requirements

The four states in this study designate professional development as a prerequisite for professional staff to renew certification. Arkansas, Oklahoma, and Texas require a minimum amount of professional development for teachers and administrators to renew their licenses. Arkansas, New Mexico, and Texas require teachers and administrators to develop an individual professional development plan to address improvement needs and strategies. Arkansas, Oklahoma, and Texas have specific guidelines on content focus (subjects or instructional strategies). All four states expect districts and teachers to document or report professional development activities. Although these plans generally describe the goals, types, and (sometimes) hours of professional development, they rarely contain data in a format that permits quantitative analysis.

- Arkansas' Rules Governing Professional Development require all teachers and administrators to participate in 60 hours of professional development a year to renew their professional licenses (Arkansas State Department of Education 2005).
- New Mexico does not require teachers to accumulate a specific number of hours of professional development.² Professional development is aligned with the three-tiered licensure system (Public Schools Reform Act 2003). The system, also aligned with the NCLB Act, links salaries and promotions to classroom work and training, supports ongoing professional development through mentoring, and requires teachers to develop annual plans to engage in professional development. New Mexico also requires districts to provide a mentoring program to new teachers, which is a cornerstone of advancement from level 1 to level 2 of the system.

The four states in this study require districts to develop a school improvement plan that addresses district- or school-level professional development needs

- In Oklahoma all teachers and administrators must accumulate 75 hours of professional development within five years.
- To renew certification, teachers in Texas must accumulate 150 hours of continuing professional education within five years (Texas State Board for Educator Certification 1999). Teachers who complete their certification after September 1, 1999, must renew it every five years.

Texas also has two statewide initiatives related to professional development. First, the Texas Beginning Educator Support System requires districts to provide professional development to new teachers and principals. Second, teachers are appraised through the Professional Development and Appraisal System, which asks teachers to report their professional development activities and show how they are related to content areas, district and school goals, and student needs.

State strategies for supporting professional development

The states in this study use a variety of strategies to support professional development, including earmarking state funds to encourage professional development, providing professional development activities, and legislating professional development requirements for teachers. Only Arkansas and Oklahoma earmark state funds for professional development, including funding for mentoring programs for new teachers.³ Texas does not fund professional development activities at the state or

district levels but does provide the Texas Beginning Educator Support System induction model for new teachers and principals.⁴ Similarly, New Mexico does not earmark funds for professional development. Although New Mexico includes some support for professional development in the equalization formula used to compute district appropriations, the state

does not require these funds to be used directly for professional development.⁵

All four states facilitate, organize, and sponsor professional development activities, such as workshops and conferences, in partnership with statewide professional associations and education consultants. Examples include New Mexico's list of approved consultants whom districts can hire to help teachers advance through the licensure system (New Mexico Public Education Department n.d.-b) and Arkansas' online program that makes professional development activities available to individuals, schools, and districts.

Responding to the state certification renewal requirements, district administrators are required to provide a certain number of in-service hours to enable staff to acquire the professional development needed to renew a professional license.⁶ (The following section examines how these requirements translate into cost burdens for districts.) In New Mexico the licensure system is tied to salary and promotion, so teachers have a strong incentive to participate in professional development that counts toward their advancement. Arkansas and Oklahoma have specific time requirements for professional development and provide financial support to help districts develop high-quality professional development programs.

DISTRICT POLICIES AND PRACTICES RELATED TO PROFESSIONAL DEVELOPMENT

This section looks at how districts in this study's sample planned, implemented, supported, and tracked professional development.⁷ This section also describes the nature of some of the professional development activities being offered and the factors considered when collecting the data and developing the expenditure estimates.

District improvement plans

As required by the four states in this study, each of the six districts had a planning document that

The states in this study use a variety of strategies to support professional development, including state funds, providing professional development activities, and legislating professional development requirements for teachers

laid out its professional development needs and strategies. Except in the Oklahoma district, teachers (and other professional staff when applicable) are required to develop a professional development plan that identifies individual improvement needs, professional development targets, and strategies to achieve these targets.

Organization of professional development at the district level

In four of the six districts the day-to-day activities related to professional development are decentralized across various divisions, departments, and content areas. For example, in the large urban district in Texas every department designs, delivers, and posts its own training courses and evaluates its own activities. In the Arkansas small town district content coordinators responsible for professional development have considerable latitude in planning and delivering professional development and collaborate often with principals and teachers.

Although some activities and planning functions are decentralized, five of the six districts have an office of professional development with a director to help coordinate reporting and oversight functions. In three districts administrators reported that the position was relatively new, resulting from a reorganization of professional development activities intended to increase the importance of professional development and coordination of such activities within the district. The directors generally oversaw planning and implementation and coordinate with various divisions to determine professional development needs.

One responsibility of the professional development director is to ensure that the district improvement or professional development plan complies with state requirements. The director often approves professional development activities, works with staff to meet recertification requirements, and documents staff development hours. Although the position was not established solely because of reporting and compliance needs, this responsibility is a component of professional development spending.

Professional development delivery strategies

The six districts in this study pursue multiple strategies to deliver professional development that supports the overall education goals of the district and meet the needs of individual staff. A review of the district improvement plans revealed these strategies:

- Offer in-service days or other incentives (stipends, release time) for professional development.
- Organize a mentor or teacher induction program for new teachers.
- Hire academic coaches and content chairs to support professional development.
- Hire consultants and presenters to organize or provide professional development.
- Use the train-the-trainer model, an integrated professional development activity.

The six districts offer in-service days as part of the employment contract, meaning that staff members receive their regular salary when they attend professional development sessions.⁸ The number of in-service days ranges from 5 (30 hours) in Oklahoma to 10 (60 hours) in Arkansas; these days accommodate the number of annual professional development hours required for state licensure (15 hours in Oklahoma and 60 hours in Arkansas). The Oklahoma district offers twice as many hours annually as required for state license renewal (in effect, 30 hours in a single year, compared with an average of 15 hours a year over five years). Although New Mexico does not require a specific number of professional development hours, the two New Mexico districts offer five in-service days to provide professional development opportunities

In four of the six districts in the study the day-to-day activities related to professional development are decentralized across various divisions, departments, and content areas

to staff, totaling 30 hours in one district and 35 in the other. In terms of salaries and benefits paid to teachers, the in-service days accounted for 30–70 percent of professional development spending in the six districts. The Texas district was the only one in the study’s sample that mandated participation in other professional development activities outside the regular workday.

All six districts in the study used integrated professional development activities. They all provide teacher induction and mentoring programs, specifically to support new teachers. Mentor teachers receive stipends as compensation for their time. Five of the six districts use the train-the-trainer model, and the other district just started. The train-the-trainer model in a school setting refers to training or mentorship programs that are designed to train teachers who will in turn train other teachers.

Five of the six districts employ academic coaches or teacher or resource specialists to work with teachers. These coaches generally support and train teachers through classroom observations, lesson planning, modeling teaching strategies, and team teaching. In addition, the coaches collaborate with teachers, assisting and guiding student data assessment.

The districts differ in their reliance on consultants and statewide or regional associations to provide professional development opportunities. The Oklahoma district relies mainly on internal content coaches, content chairs, and coordinators to train staff (for example, workshops). The two Arkansas districts extensively use services provided by the regional education services cooperative and activities offered by the state. The two Arkansas districts subscribe to these services generally by paying an annual fee based on the number of teachers, who are the main clients of these regional cooperatives.

Although the professional development activities reported by the districts include both traditional

and integrated activities, the cost estimates presented here do not fully capture the time teachers engaged in integrated professional development. Unfortunately, the districts in this study generally maintained more complete documentation only on traditional types of training (for example, number of teachers attending workshops and related expenses). And the districts maintained very little documentation (for example, records of the number of hours, number of teachers, and so on) on integrated types of professional development activities, because these activities commonly occur at the school level and were not reported or tracked at the district level. However, the costs of some integrated types of professional development were accounted for by documenting the costs of mentors and academic coaches.

District strategies for supporting professional development

The six districts in this study use a variety of strategies to encourage staff to meet relevant certification and professional development requirements. Districts provide staff release time and stipends, pay for substitute teachers and conference expenses, and tie salary increases to professional development. While these strategies encourage participation in professional development, they often carry cost burdens. For example, providing release time to teachers often means that the district needs to provide substitute teachers.

In addition to in-service days as part of the employment contract, the six districts compensate staff for time spent in professional development outside the contract days. Arkansas law requires districts to pay the hourly rate for mandated professional development beyond the 60 hours of in-service activities. In one district the stipend was \$15 an hour.

Three districts link salary increases to professional development. For example, teachers in the Oklahoma district are eligible for a one-step salary increase after accruing 225 hours of professional development. But the district does not generally

All six districts in the study provide teacher induction and mentoring programs, specifically to support new teachers

pay stipends to teachers when professional development hours count toward the 225. As noted in the literature review, researchers have found that professional development spending increases substantially when future salary incentives are included.

Districts generally provide release time and substitute teachers for staff who attend professional development activities during the school day. But the professional development plan in one district specifically indicates that staff should attend professional development outside the regular instructional day to avoid disrupting the teaching schedule. Most professional development takes place in nonteaching times during the regular school day (for example, between classes, during lesson planning periods), after school, on weekends, or during the summer. Professional development activities such as mentoring often occur after school and are seldom completely documented, even at the individual level.

District tracking of professional development

The six districts in this study use various approaches to document professional development. Four districts were at different stages of planning or implementing an online reporting and registration system. As of 2005/06 only the Oklahoma district had a comprehensive electronic system to track professional development with some detail. The reporting system monitors activities by purpose, goal, objective, grade level, and content area. The system also tracks all within-district activities and any preapproved, out-of-district activities in which staff are involved, including integrated types of professional development.⁹

Two other districts had an online software application that resembled a course registration system. Teachers log on to this system to register for specific training courses, workshops, and seminars and print their records as proof of participation. District administrators can also print summaries of teacher participation and track the hours for each activity. These new systems are set up mainly to track traditional professional development

activities—such as courses, workshops, seminars, and classes—and not necessarily integrated professional development activities, such as mentoring, self-study, or discussion groups.¹⁰

As of 2005/06 only the Oklahoma district had a comprehensive electronic system to track professional development with some detail

DISTRICT SPENDING ON PROFESSIONAL DEVELOPMENT

This section presents the findings related to district spending on professional development and examines variations across districts and by personnel and nonpersonnel categories, functional categories, and funding sources.

Estimated district spending on professional development

During 2005/06 spending on professional development among the six school districts in this study was approximately \$150–\$600 per pupil—or 2–9 percent of the district budget and \$2,475 to \$8,670 per full-time-equivalent teacher (table 1).¹¹ These figures are comparable to those reported by Miles et al. (2004), who report a range of \$2,240–\$2,430 in constant 2006 dollars—or 2.2–6.9 percent of district budgets.

The two Arkansas districts spent a higher percentage of their budget on professional development than the other districts did. This is consistent with the higher number of professional development hours required in Arkansas.

The professional development spending estimates in table 1 include personnel and nonpersonnel resources associated with the following:

- Coordination and administration of professional development at the district level.
- Participation in or provision of professional development involving teachers (including academic coaches and mentor teachers).

TABLE 1

Estimated professional development spending in six study districts, 2005/06

State and urbanicity	In-service time for professional development provided by district	Number of professional development hours required by state for licensure	Professional development spending per full-time-equivalent teacher ^a (\$)	Professional development spending per student (\$)	Professional development spending as a share of total budget (percent)
Arkansas, small town	10 days (60 hours)	60	6,726	565	8.6
Arkansas, mid-size city	10 days (60 hours)	60	8,670	599	7.1
New Mexico, small town	5 days (30 hours)	0	3,132	223	2.4
New Mexico, suburb	5 days (35 hours)	0	3,007	151	1.8
Oklahoma, suburb	5 days (30 hours)	15	2,578 ^b	149	2.9
Texas, city	5 days (35 hours)	30	2,475	159	1.9

a. Professional development dollars per full-time-equivalent teacher is a common metric used for comparison across districts, because approximately half of all district budgets are spent on teachers—the primary instructional resource. The numerator in this ratio, however, includes spending for professional development on some nonteaching staff, including instructional support staff and administrators.

b. Because Oklahoma records expenditures through its district accounting system with detailed use of district accounting and object codes and because the state has a comprehensive professional development tracking system, these estimates may be more accurate than those for districts that do not have comprehensive expenditure records or data systems.

Source: Based on data obtained from district expenditure reports, planning documents, payroll data, and information from districts' professional development tracking databases (see appendix B).

- Provision of professional development for school leadership staff, instructional support staff, and pupil support staff.

District personnel and nonpersonnel spending on professional development

Personnel costs include costs associated with time spent providing or receiving professional development by various categories of education staff. Estimates of the personnel costs associated with professional development include:

- Teacher time on professional development, such as the number of in-service days in the district or the number of hours documented in the professional development records supplied by divisions.
- District administrator time managing and planning professional development.

- Salaries and benefits paid to instructional coaches or teacher specialists who provide mentoring or teacher training.

- Pay for substitute teachers.

- Stipends for teachers who participate in professional development using their own time (based on the average teacher's pay and the pay scale of district administrators, the calculated hourly wages for different categories of staff, and the calculated wage rate inclusive of benefits).

Nonpersonnel costs include:

- Conference and tuition fees.
- Travel.
- Supplies and materials.

- Contracted services pertaining to the delivery of professional development.

Personnel spending ranged from 63 percent of professional development spending in New Mexico to 92 percent in Oklahoma (table 2). The Oklahoma district, by contrast, spent 8 percent on nonpersonnel costs, which included external consultants and purchased services. Interviews with professional staff there revealed that the district relies mostly on salaried staff, such as instructional coaches and content coordinators, to provide teacher training. The costs of salaried staff are estimated under personnel costs based on the amount of time they spent on professional development and curriculum improvement activities.

Spending by districts by function

Five districts provided detailed information about professional development by function. They spent 62–85 percent of their professional development

resources on the delivery of professional development activities for or by instruction personnel (table 3). The spending breakdown was not available for the Texas district because its expenditure file contained broad categories, such as curriculum

TABLE 2

Estimated personnel and nonpersonnel professional development spending by districts as a share of professional development spending, 2005/06 (percent)

State and urbanicity	Personnel spending	Nonpersonnel spending
Arkansas, small town	78	22
Arkansas, mid-size city	71	29
New Mexico, small town	63	37
New Mexico, suburb	79	21
Oklahoma, suburb	92	8
Texas, city	85	15

Source: Based on data obtained from district expenditure reports, planning documents, payroll data, and information from districts’ professional development tracking databases (see appendix B).

TABLE 3

District estimated expenditures on professional development, by function, 2005/06 (percent)

Function	Arkansas, small town	Arkansas, mid-size city	New Mexico, small town	New Mexico, suburb	Oklahoma, suburb
Instructional staff ^a expenditures	85	78	71	69	62
For or by instructional staff and other coaches	63	52	71	61	44
By instructional coaches for teachers	22	26	0	8	18
Administrative expenditures	13	15	20 ^b	23 ^b	33
Administration of professional development	8	8	—	—	28
For district administrators	3	4	—	—	2
For school principals	2	3	—	—	3
Instructional or pupil support	2	7	9	7	5
For instructional support staff	1	4	8	6	1
For pupil support staff	1	3	1	1	4

— is not available.

Note: Components may not sum to 100 percent because of rounding. The spending breakdown was not available for the Texas district because its expenditure file contained broad categories, such as curriculum development and instructional improvements, that could not be disaggregated.

a. Instructional staff are teachers, teacher aides, and instructional coaches. Instructional support staff include librarians, media specialists, and other instructional technology staff. Pupil support staff include counselors, health professionals, social workers, parental involvement liaisons, and others who provide such school services.

b. Data were available only at the aggregate level for this combination of functions.

Source: Based on data obtained from district expenditure reports, planning documents, payroll data, and information from districts’ professional development tracking databases (see appendix B).

development and instructional improvements, that could not be disaggregated. Expenditure files for the other five school districts used distinct codes, such as employee training, so information could be broken down by object codes (see table 3).

The expenditures on instructional personnel include the personnel costs associated with teachers, coaches, and teacher aides (when available) and their participation in or delivery of professional development activities, as well as the nonpersonnel costs associated with the delivery of such activities. Districts used up to 26 percent of all professional development expenditures to hire coaches (or teacher specialists) to train teachers, mostly those in such specific content areas as mathematics, science, or literacy and reading. Districts used the remaining portion of professional development to fund the districts' administration (or coordination) of professional development activities and the delivery of professional development for district administrators, school principals, instructional support staff (for example, librarians and media specialists), and pupil support staff (for example, counselors and social workers). The Arkansas districts allocated the highest percentage (22 percent and 26 percent) of professional development investment to hiring instructional coaches. Instructional staff other than coaches and teacher specialists constituted 44–71 percent of professional development expenditures among the five districts.

The remaining portion of professional development spending went to district administration (or coordination) of professional development activities (13–33 percent) and the delivery of professional development to district administrators, school principals, instructional support staff, and pupil support staff (2–9 percent).

The Oklahoma district spent the highest proportion (28 percent) on district-level administration and coordination of professional development activities. These district administrative personnel spent the majority of their time coordinating professional development activities, overseeing content coaches, and in some instances, training teachers.

The salaries and benefits of these personnel (including the director of professional development) were classified under the curriculum development function code in the district's fiscal files. This fact highlights a caveat in interpreting the findings in table 3: the percentages reported were influenced not only by the districts' spending patterns across functions but also by how districts coded their itemized spending in their accounting systems.

Funding for professional development by source

Professional development activities in the districts were funded largely through state and local funds, ranging from 58 percent to 89 percent of the total. Funding from federal sources ranged from 11 percent to 42 percent (table 4).

Although most professional development funding came from state and local sources, two federal sources—Title I Part A (Grants to Local Education Agencies) and Title II Part A (Teacher and Principal Training and Recruitment Fund)—were also repeatedly cited. According to administrative staff from the New Mexico small town district, most of the district-sponsored professional development activities are funded through Title I Part A, Reading First, and Title II Part A. Similarly, for the two Arkansas districts about a third (32 percent and 37 percent) of investment in professional development is funded through federal sources. The Arkansas

TABLE 4

Estimated funding by districts for professional development, by source, 2005/06 (percent)

State and urbanicity	Source	
	Federal	State and local
Arkansas, small town	32	68
Arkansas, mid-size city	37	63
New Mexico, small town	42	58
New Mexico, suburb	11	89
Oklahoma, suburb	28	72
Texas, city	26	74

Source: Based on data obtained from district expenditure reports, planning documents, payroll data, and information from districts' professional development tracking databases (see appendix B).

mid-size district supports professional development through funds from Title I Part A, Title II Part A, Gaining Early Awareness and Readiness For Undergraduate Programs, and Title IV Part A (Safe and Drug Free Schools and Communities). The Arkansas small town district uses funds from Title I Part A, Title II Part A, Title II Part D (Enhancing Education through Technology), and Title VI Part B (Individuals with Disabilities Education Act).

The records used to estimate personnel costs of professional development by source did not permit the use of revenue source codes. Employee time spent in different activities (for example, providing classroom instruction compared with receiving training) could not be uniformly divided among revenue source codes. Aggregate data were often used when such a division was not possible. Thus, for this analysis the distribution of funding sources for personnel costs was estimated based on the assumption that personnel cost funding matches the composition of district budget; that is, if 10 percent of a district's budget comes from federal funds and 90 percent from state and local funds, then 10 percent of personnel costs are allocated to federal funds and 90 percent to state and local funds.¹²

Because of the estimation technique applied to personnel expenditures, the overall estimates of the contribution from federal sources to professional development expenditures may not be entirely accurate. For comparison, the breakdown of nonpersonnel expenditure by source was analyzed: federal sources accounted for 36–87 percent of professional development expenditures. These figures paint a very different picture of the support for professional development derived from federal sources when personnel and nonpersonnel expenditures are combined.

CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

With its emphasis on putting a highly qualified teacher in every classroom, the NCLB Act has clearly motivated states and local education

agencies to invest in professional development. A major objective of this study was to explore extant data sources that measure district investment in professional development. Accurately measuring professional development costs and disaggregating data by type of activity (for example, workshops, conferences, internships, resource centers) will be important to analyzing the cost-effectiveness of these investments.

Given the results of previous research on the comparative effectiveness of integrated and traditional professional development, future research that focuses on obtaining better and more accurate data on time allocation for education professionals may be particularly beneficial.

At the time of this study, four of the six districts were in various stages of planning or implementing an online system to track professional development activities. According to district administrators, two of these systems primarily record the more traditional types of professional development activities, such as workshops, conferences, and courses. Future research should explore the potential for these types of electronic or web-based tracking systems to help districts measure both traditional and integrated professional development activities.

Several features are important when evaluating the extent and nature of professional development: the ability to identify the purpose or objective of the activity, the content of the activity, the classification of the activity as traditional or integrated professional development, and the time spent on the activity. A better understanding of these features could result in more complete estimates of the funds spent. One solution is a flexible coding

Given the results of previous research on the comparative effectiveness of integrated and traditional professional development, future research that focuses on obtaining better and more accurate data on time allocation for education professionals may be particularly beneficial

system (in effect, one that allows users to add codes or subcodes) that could capture a larger variety of professional development activities as well as other uses of time that help districts and staff manage their time more effectively.

Future research on this topic can explore online systems for reporting professional development activities and include a feasibility analysis of such systems. Districts could use such a system to develop a rich database on professional development and analyze investments over time and against student outcomes. Implemented across districts

with consistent functionality and features, such a system could provide a comprehensive picture of professional development and enable state policymakers and other stakeholders to understand how districts are responding to state professional development initiatives.

But such a system could also be a major investment in professional development and a financial cost burden for districts. Costing out the system's development—including the initial design, planning, implementation, and evaluation—would be a study in its own right.

APPENDIX A
RECRUITMENT OF DISTRICTS IN
THE STUDY'S SAMPLE

This study explores the feasibility of applying a cost methodology to estimate professional development spending in six purposively selected school districts in the Southwest Region during the 2005/06 school year. The study plan originally called for including nine school districts in Arkansas, Louisiana, New Mexico, and Texas—specifically, nine districts that were part of the original study sample in the Targeting and Resource Allocation Component (TRAC) of the National Longitudinal Study of No Child Left Behind.¹³ These districts provided expenditure reports for 2004/05 that were used to examine preliminary resource trends and data limitations (for example, whether professional development spending could be identified). The expenditure reports analyzed under the TRAC study informed what additional documents or data sources would be needed to

more accurately estimate spending on professional development.

The nine districts were contacted in July 2006, and by September 2006 four (two from Arkansas, one from New Mexico, and one from Texas) had agreed to participate. The others declined for various reasons, including recent organizational changes in district leadership. Two replacement districts were added, one in New Mexico and one in Oklahoma. These districts were not part of the TRAC study but expressed interest after learning about this study through professional contacts with the study team. Thus, the final sample for the study consisted of six districts: two in Arkansas, two in New Mexico, one in Oklahoma, and one in Texas. Although six districts is less than the number hoped for, the final sample size was adequate for this exploratory study, which sought to gain an in-depth view of the investment in professional development in a limited number of districts.

APPENDIX B

COST ANALYSIS FRAMEWORK

This study adapted six elements from the cost methodology developed by Odden et al. (2002): teacher time; training and coaching; administration of professional development; materials, equipment, and facilities; travel and transportation; and tuition and conference fees (table B1). Although available data did not allow all six categories to be used, the full framework is presented here to provide a comprehensive overview of the elements that constitute professional development expenditures. How costs identified by Odden et al. were captured and limitations in the available data are also discussed.

Teacher time

Teacher time is a large component of professional development costs. But as the interviews revealed, such time is not often identified clearly as part of professional development and is difficult to estimate. The cost of teacher time can involve stipends as incentives for obtaining professional development, payments for additional days added to the school year or hours added to the school day, and payments for some portion of planning time allocated to mentoring or collaborative meetings with other staff.

This study tries to account for the portion of teacher time allocated to professional development based on available records and information. For example, the number of in-service days included in the teacher contract was used to estimate the cost of teacher time. Stipends and other payments are reflected in the accounting records (coded specifically under professional development or curriculum improvement). Mentor teachers (see below), however, often spend far more hours than their stipend covers. Thus, relying on district fiscal records would underestimate the full cost of this type of activity. In addition, teacher planning (or administrative) time and teacher time spent outside the regular school day on other types of professional development activities were not

captured because districts do not systematically track these activities.

Compared with traditional types of professional development, such as workshops, integrated types of professional development are hard to track. Although some integrated types of professional development show up in a district's expenditure records (for example, spending on a new teacher mentor program), many other informal activities are simply unaccounted for in the district's fiscal documents.

Training and coaching

Training and coaching refer to the cost of employing district coaches, mentor teachers, and consulting teachers who work closely with regular teachers to provide ongoing and sustained professional development opportunities, including classroom observation, lesson planning, and evaluation of student test scores to identify needs. Identifying these staff in district records can be a challenge because district payroll or fiscal data do not generally distinguish these staff from other classroom teachers. In addition, districts commonly code these personnel under regular instruction instead of professional development. Positions such as external consultants are easy to identify because they often appear on the district's expenditure report in line items titled *contracted services*. To estimate the costs, districts were asked to provide a separate list of coaching staff. Efforts were then made to systematically estimate the portion of their coaching staff time spent on planning and providing professional development activities.

Administration of professional development

District administrators provide support in organizing, managing, and overseeing professional development. Experts believe that strong instructional leadership and coordinated management are important in ensuring that high-quality professional development takes root (Porter, Birman, and Garet 2000). In the district-level administrative cost of professional development this study included specific positions, such as

TABLE B1

A cost structure for professional development

Cost element	Elements	How cost is calculated	Data sources
Teacher (or personnel) time	<p>Time within the regular contract:</p> <ul style="list-style-type: none"> When students are not present (before or after school or on scheduled in-service days, half days, or early release days). Planning time or administrative time. <p>Time outside the regular school day or year:</p> <ul style="list-style-type: none"> Time after school or on weekends. Release time provided by substitutes. 	<ul style="list-style-type: none"> Hourly salary times the number of student- (or duty-) free hours used for professional development. Cost of the person used to cover the teacher's class (or staff responsibilities) during planning time used for professional development. Stipends or additional pay based on the hourly rate that teachers receive to compensate them for their time or that provides compensation for specific professional development investments made by the individual. Substitute teacher wages. 	<p>Survey of time:</p> <ul style="list-style-type: none"> Survey or time log for hours and payroll or salary and benefit schedule for pay rate. Survey or time log. <p>Payroll and fiscal records:</p> <ul style="list-style-type: none"> Payroll and fiscal files or survey. Payroll, fiscal files, or principal survey.
Training and coaching	<p>Training:</p> <ul style="list-style-type: none"> Salaries for district trainers. Fees for outside consultants who provide training (may be part of the Comprehensive School Reform Demonstration Program; CSRD). <p>Coaching:</p> <ul style="list-style-type: none"> Salaries for district coaches (including on-site facilitators). Fees for consultants who provide coaching (may be part of CSRD). 	<ul style="list-style-type: none"> Sum of trainers' salaries. Consultant fees or comprehensive school design contract fees. Sum of coach and facilitators' salaries. Consultant fees or comprehensive school design contract fees. 	<p>Payroll and fiscal records:</p> <p>Training:</p> <ul style="list-style-type: none"> Salaries for employees who provide training. Contracted services of trainers or CSRD contract fees. <p>Coaching:</p> <ul style="list-style-type: none"> Salaries of coaches and facilitators. Contracted services for coaches and facilitators.
Administration	<p>Salaries</p> <p>Overhead</p>	<ul style="list-style-type: none"> Salary for administrators of professional development programs times the proportion of time spent administering the programs. Overhead or supplies necessary to administer the programs. 	<p>Payroll and fiscal records:</p> <ul style="list-style-type: none"> Apportionment of time and allocations within the fiscal reporting system for the division or branch of the district office responsible for administration, development, and coordination of professional development activities.
Materials, equipment, and facilities	<p>Materials</p> <p>Equipment</p> <p>Facilities</p>	<ul style="list-style-type: none"> Materials for professional development, including the cost of classroom materials required for CSRD grant programs and equipment needed for professional development activities. Rental or other costs for facilities used for professional development. 	<p>Fiscal records:</p> <ul style="list-style-type: none"> Supplies, materials, equipment, rental, or other facility costs associated with professional development.

(CONTINUED)

TABLE B1 (CONTINUED)

A cost structure for professional development

Cost element	Elements	How cost is calculated	Data sources
Travel and transportation	Travel Transportation	<ul style="list-style-type: none"> Costs of travel to off-site professional development activities. Costs of transportation within the district for professional development. 	Fiscal records
Tuition and conference fees	Tuition Conference fees	<ul style="list-style-type: none"> Tuition payments or reimbursement for university-based professional development. Fees for conferences related to professional development. 	Fiscal records

Source: Adapted from Odden et al. (2002) and Miles et al. (2004).

director of professional development, and a portion of the time of curriculum division heads who plan and implement professional development for their division. In small districts the superintendent or assistant superintendent might also be directly involved in administering professional development. Because administrator time is rarely accounted for accurately, the study team and district study liaison went systematically through the list of district leadership (based on the district's organizational structure) to identify relevant staff and estimate the time devoted to professional development based on the liaison's understanding

of an administrator's scope of work or on informal conversations with the administrators.

Other nonpersonnel costs that support professional development

Other nonpersonnel costs that support professional development include materials, equipment, and facilities; travel and transportation; and conference and tuition fees. The data sources for estimating these costs were mostly fiscal records and expenditure reports, which were often coded to staff development or curriculum improvement.

APPENDIX C

POLICIES AND CHARACTERISTICS OF STATE AND DISTRICT PROFESSIONAL DEVELOPMENT

TABLE C1

District-level planning and implementation of professional development: characteristics and policy dimensions

	Arkansas, small town	Arkansas, mid-size city	New Mexico, small town	New Mexico, suburb	Oklahoma, suburb	Texas, city
Organization: how does the district plan and implement professional development activities?						
Professional development planning documents						
District improvement plan	Yes (Arkansas Comprehensive School Improvement Plan)	Yes (Arkansas Comprehensive School Improvement Plan)	Yes	Yes	Yes (Comprehensive Local Education Plan)	Yes
Staff individual professional development/ learning plans	Yes	Yes	Yes	Yes	No (unless the teacher is in an improvement plan)	Yes
Director of professional development	Yes (new position as of 2006/07)	No (assumed by assistant superintendent)	No	Yes (as of 2006/07)	Yes (new position within past three years)	Yes
Professional development delivery strategies						
District investment in academic coaches or content chairs	Yes	Yes	No	Yes	Yes	Yes
Hiring of consultants or presenters	Yes	Yes	Yes	Yes	Yes	Yes
Teacher mentoring or induction program for new teachers	Yes	Yes	Yes	Yes	Yes	Yes
Number of in-service days (hours) provided to teachers or other professional staff	10 days (60 hours)	10 days (60 hours)	5 days (30 hours)	5 days (35 hours)	5 days (30 hours)	5 days (35 hours)
Professional development reporting or tracking system						
Electronic reporting system	Yes, as of 2006/07, similar to a course registration system	No	No	Yes, as of 2006/07	Yes, track mainly by purpose, objective, goal, content, and grade level; track formal activities	Yes, as of 2006/07, similar to a course registration system
Tracking of within-district professional development (hours in workshops)	Yes	—	—	Yes	Yes	Yes

(CONTINUED)

TABLE C1 (CONTINUED)

District-level planning and implementation of professional development: characteristics and policy dimensions

	Arkansas, small town	Arkansas, mid-size city	New Mexico, small town	New Mexico, suburb	Oklahoma, suburb	Texas, city
Tracking of out-of-district professional development	No	—	—	Yes, schools track professional leave slips	Yes, if pre-approved	No
Tracking of reform or integrated activities (such as mentoring)	No	—	—	Yes, mentoring tracked through sign-in sheets	Yes, if pre-approved	No
District incentives						
District incentives to encourage professional development	Yes	Yes	Yes	Yes	Yes	Yes
In-service days paid for by district	Yes	Yes	Yes	Yes	Yes	Yes
Stipends provided	Yes	Yes	Yes	Yes	Yes (if not counted toward salary increments)	Yes
Substitutes provided	Yes	Yes	Yes	Yes	Yes	Yes
District reimbursed for professional development–related expenses, such as travel and conference fees	Yes	Yes	Yes	Yes	Yes	Yes
Salary increments related to professional development participation	No	No	Yes	Yes	Yes	No
Staff participation in professional development						
When does professional development take place?						
In-service days	Yes	Yes	Yes	Yes	Yes	Yes
After school, weekends, summer	Yes	Yes	Yes	Yes	Yes	Yes
During school day (between classes, lesson planning)	Yes	Yes	Yes	Yes	Yes	Yes
Participation in professional development organized by state and other professional associations outside the district	Yes	Yes	Yes	Yes	Yes	Yes
Types of professional development activities						
Traditional types (for example, workshops and conferences)	Yes	Yes	Yes	Yes	Yes	Yes

(CONTINUED)

TABLE C1 (CONTINUED)

District-level planning and implementation of professional development: characteristics and policy dimensions

	Arkansas, small town	Arkansas, mid-size city	New Mexico, small town	New Mexico, suburb	Oklahoma, suburb	Texas, city
Integrated types	Mentoring or coaching, teacher collaboration, book study, some train-the-trainer models	Mentoring or coaching, train-the-trainer model, study groups, teacher collaboration, networking	Mentoring or coaching, teacher collaboration, train-the-trainer model	Mentoring or coaching, teacher collaboration, train-the-trainers model, study groups	Mentoring or coaching, train-the-trainers model, teacher collaboration/vertical team, study groups, observation advisory/task force groups	Mentoring, networking, study groups, task force, teacher resource center
Data sources: what data sources were used to estimate professional development spending?						
District or division expenditure or other fiscal reports	Yes	Yes	Yes	Yes	Yes	Yes (mainly division budgets)
Staff in-service or professional development records (staff time)	Yes	No (estimates used)	No (estimates used)	No (estimates used)	Yes	No (estimates used)
Expenditure data on academic coaches ^a	No (estimates used)	No (estimates used)	No	No (estimates used)	Yes	No (estimates used)
Expenditure data on administrators' time ^b	No (estimates used)	No (estimates used)	No (estimates used)	No (estimates used)	Yes	No (estimates used)
Others (interview notes)	Yes	Yes	Yes	Yes	Yes	Yes

a. The professional development spending on academic coaches was estimated for four of the five districts based on interviews with district officials or other personnel records from which the number of full-time equivalents of these personnel and an estimate of annual salary and benefits associated with these staff were obtained.

b. For five of the six districts professional development spending on administrators was estimated based on interviews with district officials who provided the proportion of administrator time spent administering and monitoring professional development. Salary and benefit data were also provided by district officials.

Source: District documents and personal communication with district personnel.

TABLE C2

State-by-state comparison of professional development policies and requirements

Policy	Arkansas	New Mexico	Oklahoma	Texas
Specific state policy on professional development?	<p>Yes.</p> <p>The most recent one is the Arkansas Rules Governing Professional Development of July 2005.</p> <p>Historically, professional development has been addressed in the Arkansas Comprehensive School Improvement Plan (ACSIP).</p>	<p>Yes.</p> <p>The 3-Tiered Licensure System ensures high teacher quality through accountability and professional support.</p> <p>The state Public Education Department's professional development framework defines professional development, describes the requirements for the framework, explains the guidelines for designing professional development programs, and provides resources for professional development.</p>	<p>Yes.</p> <p>Every 6 years, each school district submits to the state a Comprehensive Local Education Plan (CLEP); the professional development plan is a part of CLEP.</p> <p>Effective in 2006/07, the state requires that the district's professional development program be directed toward increasing academic achievement and high school graduation rates and reducing college remediation rates.</p>	<p>Yes.</p> <p>State law requires districts to budget adequate time and financial resources to support a comprehensive staff development program that is guided by the school improvement plan.</p> <p>Two statewide programs directly relate to professional development:</p> <ul style="list-style-type: none"> • Teacher appraisal through the Professional Development and Appraisal System. • Mandatory professional development for new teachers and principals.
State requirement for a district professional development plan?	<p>Yes.</p> <p>This is addressed in the ACSIP.</p>	<p>Yes.</p> <p>This is addressed in the District Improvement Plan.</p>	<p>Yes.</p> <p>The professional development plan is embedded in the CLEP.</p>	<p>Yes.</p> <p>This is addressed in the District Improvement Plan.</p>
State requirement for an individual professional development plan?	<p>Yes.</p> <p>Each certified staff member must develop annually an individual professional development plan.</p>	<p>Yes.</p> <p>Teachers develop a professional development plan, in consultation with the school principal, that outlines personal benchmarks associated with the nine teacher competencies.</p> <p>To advance from one licensure level to the next, teachers must submit a Professional Development Dossier (PDD) to the state Department of Education for review after completing three to five years of successful teaching.</p>	<p>No.</p> <p>An individual professional development plan is a district-level decision.</p>	<p>Yes.</p> <p>The Professional Development and Appraisal System includes a section that lets teachers highlight their professional development activities.</p> <p>All teachers track their participation in professional development activities in their individual professional development plan.</p>

(CONTINUED)

TABLE C2 (CONTINUED)

State-by-state comparison of professional development policies and requirements

Policy	Arkansas	New Mexico	Oklahoma	Texas
Professional development linked to certification requirements?	Yes.	Yes.	Yes.	Yes.
Time requirement for professional development or certification renewal?	Yes. Certified administrators and teachers must fulfill annually a 60-hour professional development program to renew their professional licensures.	No. Aside from the professional development plan and PDD, the state does not have specific guidelines on the number of hours required for professional development and license renewal. However, teachers must advance from level 1 to level 2 within five years to continue teaching in the state. ^a	Yes. Teachers and administrators must accrue 75 points, or hours of professional development, within a five-year period to obtain recertification.	Yes. Teachers must complete at least 150 hours of continuing professional education every five years to renew their certificates.
Specific content emphasis on professional development?	Yes. To receive professional credit for participating in professional development activities, teachers must attend activities that are related to any of the 13 focus areas. ^b The 60 hours of professional development must also include a certain number of hours in education technology, parental involvement for teachers, and Arkansas history (for anyone who teaches the content). Administrators must receive training in data disaggregation, instructional leadership, and fiscal management.	Yes. Teachers across the state are evaluated annually in nine areas or competencies during a three-year period (New Mexico Public Education Department n.d.-c). ^c	Yes. Oklahoma Senate Bill 1493 (2006) requires professional development activities to include components on classroom management and student discipline strategies; outreach to parents, guardians, or custodians of students; special education; and racial and ethnic education.	Yes. Staff development provided by the district may include training in technology, conflict resolution, discipline strategies, and instruction for students with disabilities (Education Code 21.451; 19 TAC 153.1011). For certificate renewal, at least 80 percent of continuing professional education activities must focus on standards (for example, content area knowledge/skills, special needs population, and instructional techniques). The Professional Development and Appraisal System appraises teachers in eight domains, focusing on content areas and competencies (Texas State Board for Educator Certification 1999). ^d

(CONTINUED)

TABLE C2 (CONTINUED)

State-by-state comparison of professional development policies and requirements

Policy	Arkansas	New Mexico	Oklahoma	Texas
State incentives to support professional development?	<p>Yes.</p> <p>Professional development funding is provided each year.</p> <p>The state Department of Education provides professional development activities directly to schools and districts, often in partnership with regional education cooperatives.</p> <p>The state is developing an online professional development program that makes professional development activities available to individuals, schools, and districts.</p>	<p>Yes.</p> <p>The state calculates a certain amount of professional development money in the equalizations formula used to compute district budgets.^e</p> <p>Recently, the state authorized additional funding for salary increases for teachers who develop competency and advance through the state's licensure system.</p> <p>The state provides a list of approved consultants whom districts can hire to assist teachers with their advancement.</p> <p>Statewide associations, organizations, and universities offer seminars and resources for teachers.</p>	<p>Yes.</p> <p>The Oklahoma Legislature, through the state Department of Education, provides annual funding on an average daily attendance basis to districts to support professional development programs.</p> <p>Districts may also receive mentor teacher stipends.^f</p> <p>Each year, the department facilitates, sponsors, and organizes various professional development activities.</p> <p>The state legislature also appropriates funding to support seven Professional Development Centers in the state to provide information, resources, and support to state educators and promote quality instruction and overall school improvement.</p>	<p>Yes.</p> <p>Texas Beginning Educator Support System (TxBESS), an initiative of the State Board for Educator Certification, is a comprehensive induction program providing training and support for new teachers.</p> <p>The TxBESS model includes training materials that districts can use for standards-based training and mentoring for new teachers.</p>

(CONTINUED)

TABLE C2 (CONTINUED)

State-by-state comparison of professional development policies and requirements

Policy	Arkansas	New Mexico	Oklahoma	Texas
Documentation and reporting requirements?	Yes. Districts must report to the state through the state's reporting system, verifying that staff have met the 60-hour professional development requirement for licensure.	Yes. The PDD, along with observations from the school's principal and a recommendation from the district's superintendent, is filed electronically with the state (New Mexico Public Education Department n.d.-a).	Yes. Since July 2006, districts are no longer required to submit the professional development plan as part of the CLEP; instead, districts will report the following information to the state department of education: <ul style="list-style-type: none"> • District-level professional development needs. • Activities completed. • Expenditures. • Results achieved for each school year, by each goal. 	Yes. Every teacher in Texas keeps a log of participation in professional development activities in his or her individual professional development plan, which is kept at the schools as a record for the Professional Development and Appraisal System and also for certificate renewals and compliance.

a. To advance from level 2 to level 3, teachers must have at least three years of successful teaching experience at level 2 and submit an additional PDD to the state.

b. Content (for grades K–12) instructional strategies; assessment; advocacy/leadership; systemic change process; standards, framework, and curriculum alignment; supervision; mentoring and coaching; education technology; principles of learning/developmental stages; cognitive research; parent involvement; and building a collaborative learning community.

c. Accurately demonstrate knowledge of the content area and approved curriculum; appropriately use a variety of teaching methods and resources for each area taught; communicate with and obtain feedback from students in a manner that enhances student learning and understanding; comprehend the principles of student growth, development, and learning and apply them appropriately; effectively use student assessment techniques and procedures; manage the education setting in a manner that promotes positive student behavior and a safe and healthy environment; recognize student diversity and create an atmosphere conducive to the promotion of positive student involvement and self-concept; demonstrate a willingness to examine and implement change; and work productively with colleagues, parents, and community members.

d. Active, successful student participation in the learning process; learner-centered instruction; evaluation and feedback on student progress; management of student discipline; instructional strategies, time/materials; professional communication; professional development; compliance with policies, operating procedures, and requirements; and improvement of all students' academic performance.

e. Despite this, the state does not require the funds to be used for professional development.

f. In 2005/06 and 2006/07, the state legislature appropriated \$700,000 for mentor-teacher stipends and more than \$16 million for staff development (Oklahoma State Department of Education 2006).

Source: Expenditures on professional development are based on data obtained from district expenditure reports, planning documents, payroll data, and information from district's professional development tracking databases.

NOTES

1. These estimates included contracted professional development days, which is consistent with the current study's methodology. Without the contracted time, the per teacher spending on professional development ranged from \$2,100 to \$4,700 (\$2,240 to \$5,015 in constant 2006 dollars).
2. Requirements for professional development for other professional educators could not be identified.
3. In 2005/06 and 2006/07 the Oklahoma legislature appropriated \$700,000 for mentor teacher stipends and more than \$16 million for staff development (Oklahoma State Department of Education 2006). In Arkansas districts received \$50–\$60 per student from the state for staff development (interview with district study liaison, personal communication, October 23, 2006).
4. “The TxBESS Framework defines the act of teaching and introduces teachers to the components of effective practice. The TxBESS Activity Profile provides a structure for reflection in which mentors and other support team members guide beginning teachers to reflect on their own teaching practice. The TxBESS Performance Standards are the basis for the TxBESS Activity Profile (TAP), a case study of beginning teaching” (Texas State Board for Educator Certification 2005, p. 3).
5. These funds derive primarily from money allocated to support the Training and Experience Index, which provides additional money to districts that employ teachers with more training and experience.
6. For example, state officials in Arkansas reported that districts must provide a minimum of 60 hours (or 10 days) of professional development to all certified teachers and administrators. Similarly, although Oklahoma requires certified teachers and administrators to accumulate 75 hours of professional development within five years, districts are required to provide a minimum of five in-service days of professional development training each year.
7. See table C2 in appendix C for the characteristics and policy dimensions of professional development planning and practices in the six districts.
8. Most in-service days occur near the end of the summer. But to be flexible and provide some continuity in professional development opportunities, some in-service days are organized during the regular school year.
9. The data system in the Oklahoma district captures some uncompensated teacher time, but the study approach excluded such costs because the other districts could not produce such a breakdown (interviews with district personnel, November 29, 2006).
10. In 2006/07 another district was implementing a system designed to track professional development that occurs within and outside district boundaries. Table C1 in appendix C shows which districts use electronic tracking systems.
11. Because teachers are the primary instructional resource and usually consume about half of total district budgets, professional development expenditures are often expressed per full-time-equivalent teacher.
12. According to data from the U.S. Department of Education, National Center for Education Statistics (2006), in 2003/04 about 81 percent of school district expenditures (based on all sources of funding) went to personnel costs. Chambers et al. (2000) also report that the largest federal education program, Title I (Part A), spent about 83 percent in personnel categories at the district level and 86 percent at the

school level. The similarity of these percentages suggests that the methodology used to apportion personnel costs among fund sources may roughly represent how federal and local and state contributions are distributed for personnel costs. Examining each funding source from districts to determine the actual distribution of funds used for personnel costs associated with professional development was beyond the scope of this study. Although more accurate data on fund sources for nonpersonnel costs were available, these costs generally constitute only a small proportion of a

district's expenditures. To present a more comprehensive analysis of such sources, the cost of teacher time spent in professional development (for example, in-service hours) was included, and the estimates by funding source were based on the composition of district revenues (as described in the text).

13. The study team initially contacted 10 districts with the hope of recruiting 9 for this study. Limiting the sample to nine enabled data to be collected without prior clearance from the Office of Management and Budget.

REFERENCES

- Archibald, S., & Gallagher, H. (2002). A case study of professional development expenditures at a restructured high school. *Education Policy Analysis Archives, 10*(29). Retrieved August 31, 2006, from <http://epaa.asu.edu/epaa/v10n29.html>.
- Arkansas Department of Education. (2005, July). *Rules governing professional development* (ADE 207). Little Rock, AR: Arkansas Department of Education.
- Chambers, J. G., & Parrish, T. (1994). Developing a resource cost database. In W. S. Barnett (Ed.), *Cost analysis for education decisions: methods and examples* (pp. 7–21). Greenwich, CT: JAI Press.
- Chambers, J. G., Lieberman, J., Parrish, T., Kaleba, D., Van Campen, J., & Stullich, S. (2000). *Study of education resources and federal funding: final report*. Washington, DC: U.S. Department of Education, Office of the Under Secretary, Planning and Evaluation Service.
- Darling-Hammond, L. (1996). What matters most: a competent teacher for every child. *Phi Delta Kappan, 78*(3), 193–200.
- Darling-Hammond, L. (1997). *The right to learn: a blueprint for creating schools that work*. San Francisco, CA: Jossey-Bass.
- Fermanich, M. (2002). School spending for professional development: a cross-case analysis of seven schools in one urban district. *The Elementary School Journal, 103*(1), 27–50.
- Garet, M., Birman, B., Porter, A., Desimone, L., & Herman, R. (with Yoon, K.). (1999). *Designing effective professional development: lessons from the Eisenhower program*. Washington, DC: U.S. Department of Education.
- Garet, M., Porter, A., Desimone, L., Birman, B., & Yoon, K. (2001). What makes professional development effective? The results from a national sample of teachers. *American Educational Research Journal, 38*(4, winter), 915–45.
- Hertert, L. (1997). *Investing in teacher professional development: a look at 16 school districts*. Denver, CO: Education Commission of the States.
- Killeen, K., Monk, D., & Plecki, M. (2002). School district spending on professional development: insights available from national data (1992–1998). *Journal of Education Finance, 28*(summer), 25–50.
- Levin, H. M. (1983). *Cost-effectiveness: a primer*. Newbury Park, CA: Sage.
- Levin, H. M., & McEwan, P. J. (2001). *Cost-effectiveness analysis: Methods and applications*. Thousand Oaks, CA: Sage.
- Little, J. W. (1993). Teachers professional development in a climate of educational reform. *Educational Evaluation and Policy Analysis, 15*(2), 129–151.
- Little, J. W., Gerritz, W., Stem, D., Guthrie, J., Kirst, M., & Marsh, D. (1987). *Staff development in California: public and personal investments, program patterns, and policy choices*. San Francisco, CA: Far West Laboratory for Educational Research and Development and Policy Analysis for California Education.
- Loucks-Horsley, S., Hewson, P. W., Love, N., & Stiles, K. E. (1998). *Designing professional development for teachers of science and mathematics*. Thousand Oaks, CA: Corwin Press.
- Miles, K., Odden, A., Fermanich, M., & Archibald, S. (2004). Inside the black box of school district spending on professional development: lessons from five urban districts. *Journal of Education Finance, 30*, 1–26.
- New Mexico Public Education Department. (n.d.-a). *New Mexico 3-tiered licensure system: requirements and guidelines for the preparation of the New Mexico professional development dossier (PDD) for teachers*. Retrieved February 28, 2007, from <http://www.teachnm.org/docs/PDDGuidelines.pdf>.
- New Mexico Public Education Department. (n.d.-b). *Approved professional providers*. Retrieved February 28, 2007, from http://www.teachnm.org/approved_providers_evaluation.html.

- New Mexico Public Education Department. (n.d.-c). *New Mexico teacher competencies: competencies for licensure level I, II and III assessment criteria*. Retrieved February 28, 2007, from http://www.teachnm.org/nm_teacher_competencies.html.
- Odden, A., Archibald, S., Fermanich, M., & Gallagher, H. (2002). A cost framework for professional development. *Journal of Education Finance*, 28(1), 51–74.
- Oklahoma Senate Bill 1493. Amendatory 70 O.S. 2001, §§3–142. (2006).
- Oklahoma State Department of Education. (2006). *School finance technical assistance document*. Retrieved February 26, 2007, from <http://www.sde.state.ok.us/Finance/TechAsstDoc.pdf>.
- Porter, A. C., Birman, B. F., & Garet, M. S. (2000). *Does professional development change teaching practice? Results from a three-year study*. Washington, DC: U.S. Department of Education.
- Public Schools Reform Act, New Mexico House Bill 212, §§22-1-1. (2003).
- Texas State Board for Educator Certification. (1999). Texas Administrative Code, Title 19, Part VII, §§227–250.
- Texas State Board for Educator Certification. (2005). *Texas Beginning Educator Support System: TxBESS framework—Performance standards and developmental continuum*. Austin, TX: Author. Retrieved February 26, 2007, from <http://www.sbec.state.tx.us/SBECOnline/txbess/framework.pdf>.
- U.S. Department of Education. (1999). *Teacher quality: A report on the preparation and qualifications of public school teachers* (NCES 1999-080). Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- U.S. Department of Education, National Center for Education Statistics. (2006). *Digest of education statistics*. Retrieved August 23, 2007, from http://nces.ed.gov/programs/digest/d06/tables/dt06_165.asp.
- U.S. Department of Education, National Center for Education Statistics. (2007). *Local Education Agency (School District) Universe Survey Data 2004–05*. Retrieved January 24, 2007, from <http://nces.ed.gov/CCD/pubagency.asp>.