

# School District Spending on Professional Development: Insights Available from National Data (1992-1998)

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## ABSTRACT

This descriptive analysis provides new insights into the amount U.S. school districts spend on teacher professional development. A measure of professional development expenditures is analyzed using three panels of data from the U.S. Census Bureau. Findings reveal that districts devote approximately three percent of total general expenditures to professional development activities, which equates to approximately \$200 per pupil. These findings were quite stable during the 1990's and thus reflect a fairly flat trend in new investments in teacher training and quality enhancement. Findings are reported by state, school district size, and urbanicity.

## INTRODUCTION

There has been much recent discussion and debate about the appropriate level of investment that needs to be made in teacher professional development. The consensus in the literature has been that public schools invest at relatively modest levels compared with other sectors of the economy.<sup>1</sup> For example, the National Commission on Teaching and America's Future indicated that spending lev-

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els on professional development in public school districts were estimated to be between 1 and 3 percent of the base budget.<sup>2</sup> Within the popular press, the tendency is to emphasize the lower of these two figures. For example in the May 24, 2000 issue of *Education Week*, Dennis Sparks and Stephanie Hirsh state unequivocally that “despite the power of professional development to improve teaching, the typical school district allocates less than one percent of the budget for such activities.”<sup>3</sup> Moreover, there have been recurring questions about the quality of the professional development that is typically offered to practicing teachers. The literature suggests that the quality of professional development within the field of education is highly varied and tends on average to fall short of reasonable expectations.<sup>4</sup>

We enter into this debate frustrated with our ability to compare notions of *appropriate* spending levels with *actual* patterns of professional development spending. In this article we focus on the more foundational issue—current expenditure patterns. The purpose of this study is to illustrate and discuss the present and past levels of spending on professional development activities, within U.S. public education systems, using existing national data. Specifically, we rely on three panels of data (1992, 1995, and 1998) from two national surveys of public school districts, to establish baseline measures of professional development spending. Our findings reveal that U.S. school districts do devote approximately 3 percent of total general expenditures to teacher professional development, which equates to an annual sum of approximately \$200 per pupil. Furthermore, we find that this pattern of spending remained quite stable throughout the 1990s, however small and rural districts continue to spend far less than larger and more urbanized districts.

This focus on professional development spending is both timely and foundational for the study of educational finance. The 1990s’

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1. National Commission on Teaching and America’s Future, *What Matters Most: Teaching for America’s Future* (New York: National Commission on Teaching and America’s Future, 1996).

2. National Commission on Teaching and America’s Future (1996):40.

3. Dennis Sparks and Stephanie Hirsh, “Strengthening Professional Development,” *Education Week*, 24 May 2000, p. 42 and 45.

4. Judith Warren Little, “Teachers’ Professional Development in a Climate of Educational Reform,” *Educational Evaluation and Policy Analysis* 15 (1993): 129-151; Thomas Corcoran, *Helping Teachers Teach Well: Transforming Professional Development*. CPRE Policy Brief (New Brunswick, NY: Consortium for Policy Research in Education, 1995); Judith Renyi, *Teachers Take Charge of Their Learning: Transforming Professional Development for Student Success* (Washington, DC: National Foundation for the Improvement of Education, 1996).

era of educational reform included new efforts to monitor student learning progress, as well as a substantial focus on teacher quality enhancement. While State efforts to assess and influence content through new learning standards are well documented, less is known about the breadth of efforts to improve the practice of teaching.<sup>5</sup> Has the 1990s' era of educational reform brought about new investments in the teaching labor force? We propose that changes in the level of investment in teacher professional development can offer insights into the extent of state and for that matter national education reform on this issue. These findings can also offer comparative value by examining trends from organizations in other industry sectors. According to annual reports from the American Society for Training and Development, spending on employer-provided training grew in the late 1990's.<sup>6</sup> Did schools keep pace?

Second and equally important is the concern over valid measures of teacher quality enhancement programs. Our effort is part of a larger study being conducted by the Center for the Study of Teaching and Policy.<sup>7</sup> The larger study includes a series of case studies in four states that will permit analysts to go well beyond what is possible to accomplish using national data sets. This nested and sequential nature of the data collection and analysis makes good sense given the sometimes-elusive nature of the available fiscal data on professional development activities.

There are numerous conceptual as well as operational difficulties that surround efforts to estimate spending on professional development. For example, programs are not always operated out of local school districts, and yet the existing accounting systems tend to be oriented around the school district as the unit of analysis. Some states provide summer institutes for teachers and the costs for these institutes may be accounted for within a state agency's

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5. Eric Hirsh, Julia Koppich, and Michael Knapp, *Revisiting What States are Doing to Improve the Quality of Teaching: An Update on Patterns and Trends* (Seattle: Center for the Study of Teaching and Policy, University of Washington, 2001).

6. Laurie Bassi and Mark Van Buren, "The 1999 ASTD State of the Industry Report," *Training and Development Journal* 3 (1999).

7. The Center for the Study of Teaching and Policy (CTP), housed at the University of Washington, is a consortium of five universities which has been created to investigate the relation between excellent teaching and policymaking at national, state, and local levels. The mission of CTP is to investigate the relation between excellent teaching and policymaking. CTP was founded in 1997 and is funded for five years by the National Institute for Educational Governance, Finance, Policymaking, and Management of the Office of Educational Research and Improvement (OERI) in the U.S. Department of Education. For more information, visit the CTP web site at <http://depts.washington.edu/ctpmail/target.html>.

budget. The agency in question may vary depending on the state and depending on the type of service being provided.

In addition, upward adjustments are sometimes made to teacher salaries based on professional development activities. When these adjustments are made to the teachers' base salary, taxpayers are committing themselves to a stream of pay-outs that will continue over the remaining years of service for each of the involved teachers. In a study of the Los Angeles School District, Ross<sup>8</sup> found that 22 percent of district spending on professional development was due to salary point credits. The present value of this stream of benefits is relevant to a calculation of investment in teacher professional development, but it could be misleading to policy makers to suggest that these dollars need to be paid in any given budget period.

Similarly, there are opportunity costs to consider that are sometimes difficult to capture. Consider a case where a teacher leaves his or her classroom for a professional development activity and is replaced by a substitute teacher. The conventional way to account for this cost is to determine the cost of hiring the substitute teacher and to include this as part of the cost of conducting the professional development. But suppose it is the case that on average substitute teachers are not as effective as the teachers they replace. In other words, suppose, that on average students do not learn as much in the hands of the substitute teachers as they would have in the hands of their regular teachers. Conceptually, this foregone learning is a relevant cost of the professional development, but it is typically not considered in cost calculations. In a similar vein, there are also potential costs associated with "early release days", or those days when students are dismissed early from the school day in order for teachers to have time at school for professional development activities. Both examples are additional conceptions of professional development costs that are difficult to quantify and measure.

While these difficulties and challenges are real, it is also important to gain some basic insights into the current spending practices with respect to teacher professional development, and this is our purpose here. We begin with an overview of the research literature dealing with spending on professional development. We turn next to a discussion about the data and the methods we employed. Our discussion of data handling is detailed in an effort to highlight the practical difficulties involved with professional development cost

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8. Randy Ross, *Effective Teacher Development Through Salary Incentives (An Exploratory Analysis): Research Report* (Washington: RAND Institute on Education and Training, 1994).

accounting. The next section reports findings, and the paper closes with an assessment of implications for future research.

#### LITERATURE REVIEW

The idea that school districts, relative to other economic sectors, invest modestly in teacher professional development has persisted since the 1970's,<sup>9</sup> despite the rather inconclusive nature of academic research on the topic. As Little<sup>10</sup> notes, the research base is almost entirely dominated by brief, descriptive pieces. The minority of current studies focuses on school district level and inter-district descriptions of teacher professional development spending.<sup>11</sup> In perhaps the most comprehensive statewide study of its kind, Little<sup>12</sup> inventoried staff development programs and costs for 30 districts in California, documenting how policy impacts professional development programming. The study determined that local school district dollars are the primary revenue source for professional development activities. By comparison, other studies have chosen one school district to evaluate revenue and expenditure activities that revolve around professional development programming.<sup>13</sup> Of the studies that emerged during the 1980's and early 1990's, great emphasis was placed on comprehensive evaluations of teacher professional development costs as well as policy and programming patterns.<sup>14</sup> Given the small-scale,

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9. W. Robert Houston and H. Jerome Freiberg, "Perpetual Motion, Blindman's Buff, and Inservice Education," *Journal of Teacher Education* XXX (1979): 7-9; David Kearns, "An Education Recovery Plan for America," *Phi Delta Kappan* 69 (1988).

10. Judith Warren Little, "District Policy Choices and Teachers' Professional Development Opportunities," *Educational Evaluation and Policy Analysis* 11 (1989): 165-179.

11. Most research on financing teacher professional development focuses on intra-district spending at the school site level. Several of the studies reviewed here describe the exact location of their school districts of study, such as Alaska or Washington State. Others purport their study areas to be geographically representative of the U.S. as a whole, yet do not name them. Donald Orlich and Allen Evans, "Regression Analysis: A Novel Way to Examine Staff Development Cost Factors" (paper presented at the annual meeting of the Pacific Northwest Research and Evaluation Conference, 18th, Tacoma, WA, March 15, 1990); Barbara Miller, Brian Lord, and Judith Dorney, *Staff Development for Teachers: A Study of Configurations and Costs in Four Districts* (Newton: Education Development Center, 1994). R. Elmore and D. Burney (1999); Donald Moore and Arthur Hyde, *Making Sense of Staff Development: An Analysis of Staff Development Programs and Their Costs in Three Urban School Districts* (Chicago: Designs for Change, 1981).

12. Little (1989).

13. D. Moore and A. Hyde (1981).

14. Moore and Hyde (1981); D. Orlich and A. Evans (1990); Richard Elmore and Deanna Burney, "Investing in Teacher Learning: Staff Development and Instructional Improvement in Community School District #2, New York City," in *Teaching as the Learning Profession: Handbook of Policy and Practice*, ed. Linda Darling-Hammond and Gary Sykes (San Francisco: Jossey-Bass Press, 1999).

case study, nature of the research, the literature does not address whether the study areas, districts, or findings are representative of particular states or the nation as a whole. Despite the thinness of the research base, general comments about the magnitude of expenditures on teacher professional development are widespread.

Early fiscal analyses on teacher professional development expenditures demonstrate wide variability in expenditures as a share of total general expenditures for education. In their meta-analysis of four studies from the late 1970's and 1980's, Orlich and Evans<sup>15</sup> found that professional development as a share of the base budget ranged from a low of 2.77 percent to a high of 11.81 percent per year among 14 districts. Of the 14 districts, 12 reported spending less than 7 percent on teacher professional development. Assuming for a moment that the studies are generalizable for all districts, our analysis of their data reveals that the average district spends between 4.23 percent and 7.07 percent ( $p < 0.05$ ; The median was 5.7 percent). By contrast, a study of four urban districts found a much lower spending pattern; between 1.8 percent and 2.8 percent of operating budgets were devoted to teacher professional development.<sup>16</sup> And more recently, an in depth evaluation of teacher professional development activities within New York City's Community School District 2 reported the average share of operating budgets devoted to professional development to be 2.96 percent between 1994-1996.<sup>17</sup> This research was conducted by the National Commission on Teaching and America's Future and the Consortium for Policy Research in Education.

Although the existing studies do not clarify average levels of teacher professional development expenditures by school districts across the U.S., they are still very useful. In sum, they demonstrate that teacher professional development expenditures are likely to be well under 10 percent of overall education expenditures at the school district level. Second, the reported findings indicate both inter and intra-district variability on teacher professional development spending. Third, the geographic spread of the school district study sites indicate possible inter-state and intra-state variability, as well as urban and rural spending variation.<sup>18</sup>

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15. Orlich and Evans (1990).

16. B. Miller, B. Lord, and J. Dorney (1994).

17. R. Elmore and D. Burney (1999).

18. Several of the studies reviewed here describe the exact location of their school districts of study, such as Alaska or Washington State (See Orlich and Evans). Others purport their study areas to be geographically representative of the U.S. as a whole, yet do not name them (see Miller, Lord and Dorney: Moore and Hyde).

In an effort to clarify the three main issues listed above, this report offers an overview of available national teacher professional development fiscal data. Our findings are centrally related to questions of the magnitude and distribution of teacher professional development expenditures across the U.S..

#### DATA AND METHODS

Our data come from two sources: (1) The Census Bureau's Survey of Local Government Finances: School District Finances (F-33) which is a school district fiscal report that is compiled by the U.S. Census Bureau, and (2) the Common Core of Data which is compiled by the National Center for Education Statistics and which includes detailed information about demographic and other aspects of U.S. school districts. We have focused on three years of data: 1991-1992, 1994-1995 and 1997-1998. These panels offered us the most current fiscal and organizational data during the 1990s, for the universe of school districts within the nation.

The F-33 report includes both revenue and expenditure data. We had hoped to make use of revenue data but quickly discovered that it is difficult to disentangle the various parts of the revenue streams into school districts. While it is possible to identify revenues from individual federal programs like Title I, Goals 2000, and the Eisenhower grants, it is not possible to identify the portion of each grant that is earmarked for professional development activities.

We have therefore focused on the expenditure side of the ledger, and we have made use of a category of expenditure that encompasses a range of professional development activity, regardless of the source of revenue. Specifically, we have focused on a data element called: "Instructional Staff Support," which is defined by the Census Bureau to include:

Supervision of instruction service improvements,  
curriculum development, instructional staff training,  
and media, library, audiovisual, television, and com-  
puter-assisted instruction services.

According to definitions in the NCES Financial Accounting for Local and State School Systems<sup>19</sup> instructional staff support is composed of two main categories: Improvement of Instruction Services and Educational Media Services. The former clearly encapsulates an intuitive conception of expenditures for teacher support

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19. William Fowler, *Financial Accounting for Local and State School Systems* (Washington, D.C.: U.S. Department of Education, Office of Research and Improvement, 90-096R).

services or staff development. Items for this section include:

- a. Activities concerned with directing, managing, and supervising the improvement of instructional services.
- b. Activities that assist instructors in designing curriculum, using special curriculum materials, and learning of techniques to stimulate and motivate students.
- c. Activities that involve improving the occupational health or professional training of instructional staff, including expenditures for workshops, demonstrations, school visits courses for college credit, sabbatical leave, and travel leaves.

The second major component, Educational Media Services, includes expenditures for activities related to managing and directing educational media, school library services, and audiovisual services. The intent of this component is to capture costs associated with use and preparation of those devices, content materials, methods or experiences used for teaching and learning purposes. The emphasis here is not on training of instructional staff to use the library services or other audiovisual materials, *per se*, but rather on the general personnel and materials costs involved with preparing audiovisual and other media for use by staff and students. Textbooks are not intended to be charged to this component.

Wedding the expenditures of educational media and instructional staff support adds to a broad interpretation of professional development spending. We recognize the fact that interpretations of traditional staff improvement spending (workshops, in-service training, etc.) are clouded when items such as media services are included in a variable such as instructional staff support. However, we feel that the variable is still likely to underestimate true staff improvement spending. This point underscores the importance of the recent progress made by Rice<sup>20</sup> in the development of a new cost accounting model for teacher staff development. In her model, Rice contrasts traditional conceptions of staff development, with emergent conceptions of how staff improvement resources are allocated.<sup>21</sup> She notes that new models must track the associated costs in providing activities like joint planning opportunities for teachers and providing additional time for instructors to analyze and discuss

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20. Jennifer King Rice, "Recent Trends in the Theory and Practice of Teacher Professional Development: Implications for Cost" (paper presented at the Annual Conference of the American Education Finance Association, Seattle, WA, March 18-20, 1999).

21. For an earlier, yet similar discussion of alternative conceptions of staff development costs see David Monk and Brian Brent, "Financing Teacher Education and Professional Development," in *The Handbook of Research on Teacher Education*, ed. John Sikula, Thomas Buttery, and Edith Guyton (New York: Simon and Schuster Press, 1997).



test data. Clearly, if school districts provide additional planning periods for new teachers to meet with their mentors a new cost is incurred that should fall under an accounting of staff improvement expenditures. However, without a clear sense of the time costs involved with newer definitions of professional development, we cannot precisely know the effect on total spending on staff improvement. Despite this limitation, the identification of instructional staff support in the F-33 data set met our criteria for finding a school district level estimate of total spending on staff development expenditures.

While we would have preferred to focus on the individual elements of this amalgam, the data as they are presently collected do not permit this type of disaggregation. Our response is to be explicit about what is being included and to be cautious in the comparisons we make with other estimates of on-going investments in teacher professional development. We also place emphasis on longitudinal comparisons on the grounds that the growth we observe in the broad construct gives some reasonable insight into the growth being experienced within each of the components.

#### FISCAL DATA ON STAFF DEVELOPMENT EXPENDITURES: MERGING THE F-33 AND CCD FOR DATABASE CREATION

In order to isolate standard operating school districts from other administrative units surveyed in the F-33, we relied heavily on the database creation steps defined by O'Leary and Moskowitz.<sup>22</sup> The recommended steps affords researchers the unique ability to join CCD and F-33 datafiles, and allows for more precise screening of non-standard school districts, like regional education agencies, community colleges and non-operating districts.

Even with the basic database development steps, our research still required handling of those records with missing data for instructional staff support. Unfortunately, the F-33 does not differentiate a missing value for that of a value equal to zero. During the F-33 universe years, approximately one-third of all states report some level of missing values for the instructional staff support. Our research identified those with missing values above 15 percent relative to the total number of school districts in the modified dataset. Rather than impute values for the missing records, four states in 1997-1998 were removed from the study, including California, Michigan, Nebraska, and North Dakota.

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22. Michael O'Leary and Jay Moskowitz, "Proposed Good Practices for Creating Databases from the F-33 and CCD for School Finance Analyses," in *Selected Papers in School Finance 1995*, ed. William J. Fowler, Jr. (Washington, D.C.: National Center for Education Statistics, 1997).

Our interest in making comparisons across time led to a number of data handling difficulties. In our preliminary analyses, not reported here, several states displayed dramatic growth rates during the study years; this was particularly apparent in Tennessee and New Jersey. It is unlikely that the database methodology applied here was the reason for these seemingly erratic statistics.<sup>23</sup> In the course of this research we learned that school districts across eleven states reported incomplete data to the Census Bureau on instructional staff support. In 1994-95, those states were California, Montana, Nebraska, Nevada, and North Dakota; In 1991-92, those states were Alaska, Arizona, Massachusetts, Maine, New Jersey, and Tennessee. Despite efforts by the Census Bureau to impute values for districts in these States, we thought it more prudent to remove them from the longitudinal findings.<sup>24</sup>

#### GEOGRAPHIC COST INDEX

Comparison of school districts across rural and urban continuums, as well as region, requires standardization of educational costs. For school districts these differences arise from several sources including variation in the salaries that must be paid to hire and retain teachers as well as variation in the extent and nature of the educational services being delivered. Controlling for costs also affords a proximate measure by which to adjust expenditures by geography.<sup>25</sup>

We used Chambers' 1998 Geographic Cost of Education Index (GCEI) to adjust for regional differences in instructional staff development expenditures that stem from differences in the cost of

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23. The database methodology appears to be sound and unrelated to any unusualness in the findings, for a number of reasons. First, the GCEI is highly stable for the vast majority of states, including NJ and TN, for the study years. This means that the cost adjustments are not disproportionately affecting states in one year, but not the other. Second, neither state experienced dramatic enrollment change. Holding investments in instructional staff support constant, growth in enrollment would be expected to decrease per pupil expenditures on this line, thereby dramatically decreasing the statistic. Third, neither New Jersey nor Tennessee has significant problems with missing records for our targeted instructional staff support variable. Similarly, each state was relatively unaffected by the initial database reduction steps. Tennessee retained virtually all its districts, while New Jersey lost approximately 10 percent of its districts.

24. The Census Bureau indicated that individual records in these states were estimated one of two ways. If a minority of school districts in the state could be accurately estimated based off of share ratios from other districts in the state, those ratios were used to impute the missing records. Alternatively, some records in states were imputed using national share ratios, if that state was representative of the entire nation. Missing records were not imputed for some states, mainly the ones we identified earlier, because of uniqueness in their structure, i.e. extremely small, rural districts in Montana. Sharon Meade of the Governments Division, U.S. Census Bureau, described these database limitations to Kieran Killeen on July 1999.

25. Jay Chambers, *Working Paper: Geographic Variations in Public School's Costs* (Washington, D.C.: U.S. Department of Education+ National Center for Education Statistics, Working Paper 98-04).

key inputs into the educational process. Chambers used a hedonic wage model to predict cost differences for each U.S. school district. The GCEI relies on three main input categories: certified school personnel, non-certified school personnel, and non-personnel inputs like supplies, furnishings, utilities and contract expenditures.<sup>26</sup> The GCEI is available for the years 1990-1991 and 1993-1994. These index years were matched to our databases the years 1991-1992 and 1994-1995 respectively. The 1993-1994 index was also applied to the 1997-1998 database. The implication of this mismatch is truly unknown, though likely to be small for two reasons. Chambers' research indicates an extremely high correlation of GCEI indices over a period of six years, indicating that GCEI estimates for one year may be suitable estimates for another year. Second, local economies on the whole tend to shift in period fashion, rather than abruptly. Therefore, changes on a year to year basis will likely be small and of minimal impact on school input costs. These two points are assumptions and limitations with our database creation. As more specific cost of education indices become available, we will readjust our database. Chambers does note that the GCEI tends to minimize differences between school districts in terms of expenditures,<sup>27</sup> which would mean measurement of expenditure inequality in our database will likely be smaller than in reality.

#### CHOOSING REPORTING STATISTICS AND INTERPRETING RESULTS

We are primarily concerned here with comparisons of staff improvement expenditures across states and across time. Comparison of resources by place requires standardization by population size. We report on findings in per pupil terms as well as in terms of the share of the total general fund expenditures.<sup>28</sup> Tables 1, 2 and 4

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26. Chambers (1998).

27. Chambers (1998).

28. This research reports its findings in per pupil terms as is conventional in school finance literature. However, per pupil expenditures do not intuitively capture an expenditure item that deals almost exclusively with expenditures for teacher development and improvement. Staff improvement dollars are allocated by the population size of the teaching staff. Of course, the size of the teaching staff is relative to policy variables and enrollment size. A statistic that compares expenditures on staff development standardized by instructional staff size would be both interesting and useful. Several issues made it difficult to construct this statistic. It is neither clear in the F-33, nor in the general staff development literature, how staff development dollars are allocated across school district employees. Typically, it is assumed that the vast majority of dollars go towards the teaching staff. However, to what degree administrative aides, administrators, and other specialized school district personnel receive staff development dollars to improve instruction is unclear. In all likelihood school district allotment formulas for staff improvement dollars are likely to be more similar than different across the U.S.

report district averages by category (e.g. state, urbanicity, enrollment category); The longitudinal analysis in Table 3 draws comparisons between states and across time using a weighted average; this statistic was chosen in order to complete the longitudinal analysis.

#### FINDINGS

Throughout the 1990's, our findings demonstrate that spending on instructional staff support hovers near 3 percent of total general expenditures. In this first section we focus on a description of these spending patterns during the 1997-1998 school year. We then turn to a description of the longitudinal findings and emphasize the stability of this measure throughout the 1990's.

As seen in Table 1, Delaware is the lowest spending state with 1.34 percent of its general fund being devoted to instructional staff support. The high spender in 1997-1998 was the District of Columbia, with a percentage in excess of 8.5 percent. The modal level of investment was on the order of 2.8 percent, and the distribution across the states was slightly skewed such that relatively few states spent either less than 2 percent (Delaware, Vermont, Maine, Nevada and Oklahoma) with some tendency for the right hand tail of the distribution to be larger and more elongated. More specifically, eight states plus the District of Columbia spent more than 4 percent of their general expenditure budget on instructional staff support in 1997-1998 (Louisiana, Alaska, Virginia, Tennessee, Georgia, Florida, New Mexico, and South Carolina). The national average of the state shares was 2.82 percent for the nation as whole in 1997-1998.

Table 1 also reports state-by-state comparisons of spending per pupil on instructional staff support. We can see from the table that the rankings of the states are modestly affected by whether the level of investment is measured by shares or by cost adjusted per pupil figures. Oklahoma, South Dakota and Delaware remain at the bottom of the rankings regardless of which method is used. At the upper end of the spending range, the ranking remains similar, although there are a few states where spending in an absolute sense ranks higher than spending in a percentage share sense. For example, New Jersey, Rhode Island, Maryland, Wisconsin and New York all spend in excess of \$250 cost adjusted dollars per pupil on instructional staff support while their percentage figures are all below 4 percent. Both Maryland and Wisconsin spend at a dollar level that is comparable to South Carolina, while in percentage terms South Carolina ranks second in the nation.

We are also interested in the degree of variability in spending on instructional staff support *within* each of the states we studied.

TABLE 1  
 VARIATION IN STATE SPENDING ON INSTRUCTIONAL STAFF SUPPORT<sup>1</sup>: A STATE BY STATE COMPARISON, 1997-1998

STATE <sup>2</sup>	Enrollment	Cummulative District Expenditures on Instructional Staff Support (ISS in Thousands)	Total General Expenditures (TGE in Thousands)	Average District ISS Expenditures as a Percentage of General Expenditures <sup>3</sup>	Average District ISS Expenditures Per Pupil <sup>3</sup>	Coefficient of Variation
<i>Nation</i>	37,704,027	9,077,745	274,097,818	2.82	198	52.0 <sup>4</sup>
Alabama	739,321	126,328	3,794,862	2.88	145	36.8
Alaska	130,633	82,146	1,565,017	4.39	651	66.3
Arizona	794,221	130,122	4,658,109	2.33	141	53.0
Arkansas	456,355	72,853	2,170,896	2.82	129	40.4
Colorado	686,360	151,217	4,633,546	2.71	187	60.0
Connecticut	515,141	158,720	5,538,079	2.38	248	62.5
Delaware	105,697	11,184	857,718	1.34	102	59.6
District of Columbia	77,111	67,654	769,751	8.79	877	NA
Florida	2,292,161	709,676	14,555,251	4.92	281	26.3
Georgia	1,375,980	370,113	8,393,014	4.59	246	27.2
Hawaii	189,887	36,044	1,262,876	2.85	190	NA
Idaho	244,403	34,983	1,235,973	2.66	142	49.4
Illinois	1,967,308	461,544	15,501,644	2.43	169	80.8
Indiana	985,690	162,093	7,093,109	2.01	132	46.2
Iowa	501,054	87,968	3,018,049	2.52	149	47.4
Kansas	468,980	103,240	2,757,450	3.09	183	43.7
Kentucky	645,232	133,939	3,602,546	3.49	185	44.6
Louisiana	774,561	150,053	3,918,293	4.23	204	28.6

TABLE 1 (CONTINUED)  
 VARIATION IN STATE SPENDING ON INSTRUCTIONAL STAFF SUPPORT<sup>1</sup>: A STATE BY STATE COMPARISON, 1997-1998

STATE <sup>2</sup>	Enrollment	Cumulative District Expenditures on Instructional Staff Support (ISS in Thousands)	Total General Expenditures (TGE in Thousands)	Average District ISS Expenditures as a Percentage of General Expenditures <sup>3</sup>	Average District ISS Expenditures Per Pupil <sup>3</sup>	Coefficient of Variation
Maine	211,613	36,068	1,541,608	1.75	130	53.7
Maryland	830,744	235,493	6,666,666	3.79	280	18.3
Massachusetts	805,818	221,074	8,170,780	2.53	241	49.5
Minnesota	820,211	252,821	6,379,406	3.34	236	75.5
Mississippi	503,635	77,815	2,216,047	3.73	159	36.4
Missouri	901,668	195,301	5,423,841	3.13	168	61.5
Montana	162,040	29,574	899,063	2.35	146	89.4
Nevada	296,261	51,753	1,930,046	1.82	135	78.6
New Hampshire	194,270	36,990	1,454,342	2.16	177	57.6
New Jersey	1,213,634	368,067	15,278,057	2.14	264	61.1
New Mexico	322,742	92,579	1,742,857	5.05	336	55.6
New York	2,820,808	707,285	33,598,403	3.06	364	64.0
North Carolina	1,230,010	208,222	7,071,418	3.18	183	29.8
Ohio	1,846,585	497,531	12,073,197	3.36	203	62.3
Oklahoma	623,174	81,093	3,004,141	1.96	95	72.4
Oregon	520,290	112,257	3,471,818	2.70	188	56.0
Pennsylvania	1,791,100	378,096	15,387,235	2.40	198	44.0
Rhode Island	152,356	44,554	1,346,551	3.06	272	44.5

TABLE 1 (CONTINUED)  
 VARIATION IN STATE SPENDING ON INSTRUCTIONAL STAFF SUPPORT <sup>1</sup>: A STATE BY STATE COMPARISON , 1997- 1998

STATE <sup>2</sup>	Enrollment	Cummulative District Expenditures on Instructional Staff Support (ISS in Thousands)	Total General Expenditures (TGE in Thousands)	Average District ISS Expenditures as a Percentage of General Expenditures <sup>3</sup>	Average District ISS Expenditures Per Pupil <sup>3</sup>	Coefficient of Variation
South Carolina	648,084	177,922	3,831,099	5.05	289	28.8
South Dakota	133,698	18,538	665,924	2.06	100	61.1
Tennessee	876,693	205,566	4,561,501	4.56	217	37.9
Texas	3,888,021	881,014	24,259,614	2.65	168	68.1
Utah	480,811	70,731	2,217,799	2.74	146	68.2
Vermont	99,216	18,533	928,286	1.68	168	57.6
Virginia	1,110,815	377,720	7,562,514	4.50	281	59.5
Washington	991,235	293,340	7,384,375	3.08	219	55.4
West Virginia	300,737	44,059	1,882,564	2.14	133	47.6
Wisconsin	880,799	294,593	7,176,683	3.83	303	34.8
Wyoming	96,504	19,280	645,779	2.94	220	38.5

Source: U.S. Census Survey of Local Government Finances: School District Expenditures (F-33), 1997-1998.

Notes:

- (1) The expenditure data were adjusted using Chambers 1998 Geographic Cost Index
- (2) The following states were removed from the analysis due to a high proportion of missing values in 1997-1998: California, Michigan, Nebraska, and North Dakota
- (3) The simple average is calculated as the average value per school district.
- (4) The coefficient of variation is calculated as the standard deviation divided by the mean, multiplied by 100. The average reported here is taken across all states (n = 47)

Table 1 reports a state by state comparison of internal variation in spending on instructional staff support. We rely upon the coefficient of variation (standard deviation divided by the mean with the quotient multiplied by 100) to depict the level of internal variability for each state. One of the advantages of this statistic is that it is scaled to correct for differences across the states in the mean level of spending. More to the point, the statistic is often used to discuss spending inequalities between districts.

Table 1 indicates a significant degree of variation from one state to the next in the degree of consistency across districts in the level of spending on instructional staff support. Overall the vast majority of states report inequitable conditions in terms of instructional staff support spending among districts. Among the states operating multiple school districts, the state with the lowest coefficient of variation is Maryland, and other states with relatively low coefficients of variation include: Florida, Georgia, Louisiana, South Carolina and North Carolina. Maryland's coefficient of variation is 18.3. This means that in terms of instructional staff support spending per pupil, approximately two-thirds of all school districts in Maryland are within 18.3 percent of the statewide average. While certainly low compared to other states, a coefficient of variation of 10 or higher is generally considered to be inequitable.<sup>29</sup> States with a great deal of internal variability and hence inequity include many central and central-west states such as Texas, Utah, Oklahoma, Minnesota, Nevada, Illinois and Montana.

Combining the level and variation statistics, we find that a number of states fall into extreme categories on both dimensions. For example, Oklahoma and Nevada reported relatively low levels of spending on instructional staff support but high levels of inter-district variation at those spending levels. In contrast, states like Maryland, Florida, South Carolina and Wisconsin all spend at relatively high levels with a lower variation across the districts.

The rather large degree of variation within states afforded us to examine basic correlates of instructional staff support expenditures. In prior studies, we focused on the pronounced variation in spending among urban and rural school districts during the 1994-1995 school year.<sup>30</sup> Table 2 reports school district spending on instruc-

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29. According to the Consortium for Policy Research in Education, a coefficient of variation of 10 or less is considered to be equitable. See <http://www.wcer.wisc.edu/cpre> for more information.

30. Kieran Killeen, David Monk, and Margaret Plecki, "Spending on Instructional Staff Support Among Big City School Districts: Why are Urban Districts Spending at Such High Levels?" *Educational Considerations* 28 (2000): 18-26.



tional staff support along a measure of school district size and urbanicity. This table indicates that spending on instructional staff support increases consistently as school district enrollment increases. In terms of the simple averages, school districts with enrollments greater than 6,000 students, devote 28 percent more of their budget to instructional staff support and 28 percent more in per pupil terms than the national average. Consistent with this finding, we find that urban school districts both spend more in per pupil terms and devote a greater share of their budget to instructional staff support than do less urban school districts. Urban districts exhibit these patterns at levels above the national average, whereas suburban and rural districts tend to spend at levels closest to the national average. The urbanicity scale used here identifies three categories of the metropolitan continuum. Our prior research relies on a more robust urbanicity scale and also unveils similar “urban effects” in more densely populated school districts like those in large towns and villages.<sup>31</sup>

In the last set of analyses we turn our attention to changes in instructional staff support spending during the 1990s. Our approach is to report the same per pupil and proportions for each panel year, including 1991-1992, 1994-1995 and 1997-1998 (See Table 3). We report nominal differences, rather than percentage growth rates in order to simplify the discussion. In order to discuss significant changes in the percentage of the budget devoted to professional development (a ratio) we turned to using the weighted average in a chi-square test for trend. Weighted averages tend to be slightly larger than the simple average,<sup>32</sup> but allow us to use an appropriate test for trend.

Overall, we observed a slight growth in instructional staff support spending during the 1990s. The measure is stable and consistent over time. As a share of total budgeted expenditures across the nation, instructional staff support increased by 0.25 percent, that is from 3.07 percent in 1991-1992 to 3.31 percent in 1997-1998. Twenty-three states reported an increase of less than 0.50 percent, and 17 states actually reported a decrease. Those with increases at least twice the national average include the District of Columbia, New Mexico, Kansas, Louisiana, and Wisconsin. By contrast, Kentucky, Hawaii, Oregon, New Jersey and North Carolina, decreased their shares quite significantly. We are also able to report changes in instructional staff support spending per pupil, but do so cautiously.

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31. K. Killeen, D. Monk, M. Plecki (2000).

32. Tables that include both the simple and weighted averages by state are available upon request from the authors.

TABLE 2  
INSTRUCTIONAL STAFF SUPPORT EXPENDITURES <sup>1</sup> BY DISTRICT SIZE <sup>2</sup> AND URBANICITY, <sup>3</sup> 1997-1998

Urbanicity	Unit of Observation	Cummulative District Expenditures on Instructional Staff Support (ISS in Thousands)	Total General Expenditures (TGE in Thousands)	Average District ISS Expenditures as a Percentage of General Expenditures <sup>4</sup>	Average District ISS Expenditures Per Pupil
Nation		9,077,745	274,097,818	2.82	198
<i>School District Enrollment</i>	<i>District Count</i>				
1 - 500	3,263	130,598	5,749,613	2.16	160
501 - 1200	2,647	397,721	14,682,863	2.73	182
1201 - 2750	2,780	1,087,635	36,294,774	3.05	211
2751 - 6000	1,785	1,682,184	53,029,692	3.27	237
6001 +	1,179	5,779,607	164,340,877	3.59	253
<i>Urbanicity<sup>1</sup></i>	<i>Enrollment Count</i>				
Urban	10,663,096	2,831,115,154	81,848,929,163	3.62	258
Suburban	18,370,270	4,596,923,924	141,869,684,823	2.83	230
Rural	8,670,661	1,649,705,699	50,379,203,62	2.75	171

Source: U.S. Census Survey of Local Government Finances: School District Expenditures (F-33), 1997-1998;

Notes:

- (1) The expenditure data were adjusted using Chambers 1998 Geographic Cost Index
- (2) The enrollment data was drawn from the F-33 database; The district size categories were computed by the authors.
- (3) The metro status area is the NCES classification of the agency's service area relative to a Metropolitan Statistical Area, where: Urban = A school district that primarily serves a central city of an MSA; Suburban = Serves an MSA but not primarily its central city; Rural = Does not serve an MSA
- (4) The simple average is calculated as the average value per school district.

Spending per pupil increased from \$168 to \$241, for an added total of \$72 by 1997-1998. This nominal change amounts to a 43 percent increase, but is likely to be smaller given changes in inflation over this period. We also pursued a chi-square test for trend across our three panels of data, for each state.<sup>33</sup> In this procedure, we tested whether a positive or negative linear trend existed in the data. As expected, we observed no significant trend in our share ratios. Among the handful of states with strong positive or negative growth on a per pupil basis (e.g. the District of Columbia and Kentucky), we observed statistically significant trends ( $p < 0.01$ ).<sup>34</sup> In total, we observe that spending on instructional staff support grew slightly during the 1990's (between 1995 and 1998) and was relatively stable during the latter years of the decade (between 1995 and 1998), with only a handful of States reporting sizable changes.

A comparison of spending variability within states during the 1990's also reveals very little change in spending on instructional staff support. Table 4 reports the coefficient of variation (COV) for the study years by state. The national COV average across states remains stable at approximately 50 percent. Maryland, with the lowest amount of spending variability in 1998, actually decreased that variability during the 1990's—moving from the fifth lowest to the number one slot in six years. Other low variability states like Florida, Georgia, Louisiana and South Carolina showed very little change. States with a great deal of variability like Illinois remained this way during the 1990's. Interestingly, spending on instructional staff support among Texas school districts became more similar during the 1990's. Though a great deal of variability persists, relative to the national average, Texas school districts experienced dramatic changes over this period.

#### CONCLUDING REMARKS: IMPLICATIONS FOR RESEARCH AND POLICY

The findings reported here help to clarify magnitudes and trends in school district spending on instructional staff support activities. Until now, case study research offered limited insight into school district investments on staff improvement relative to total expenditures. Furthermore, this new research helps to describe school district spending patterns at the national level.

In terms of traditional conceptions of professional development activities, our study uncovered three main findings. First, based on

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33. Loyd Fisher, *Biostatistics: a Methodology for the Health Sciences* (New York: John Wiley and Sons, Inc, 1993): 253-255.

34. Detailed findings for these analyses are available upon request from the authors.

TABLE 3  
LONGITUDINAL ANALYSIS OF INSTRUCTIONAL STAFF SUPPORT EXPENDITURES: <sup>1</sup>  
STATE-BY-STATE COMPARISONS <sup>2</sup>, 1991-1992, 1994-1995 AND 1997-1998

States	Change (1998-1992)	Instructional Staff Support Expenditures as a Percentage of General Expenditures (Weighted Averages) <sup>3</sup>			Change <sup>4</sup> (1998-1992)	Instructional Staff Support Expenditures Per Pupil (Weighted Averages) <sup>3</sup>		
		1998	1995	1992		1998	1995	1992
<i>Nation</i>	0.24	3.31	3.32	3.07	72	241	214	168
Alabama	0.03	3.33	3.26	3.30	37	171	168	134
Alaska	0.27	5.25	4.97	-	254	629	375	-
Arizona	-0.15	2.79	2.94	-	0	164	164	-
Arkansas	-0.03	3.36	3.01	3.39	6	160	164	153
Colorado	0.37	3.26	2.64	2.90	59	220	156	161
Connecticut	0.07	2.87	2.71	2.79	109	308	205	199
Delaware	-0.13	1.30	1.36	1.43	21	106	93	85
District of Columbia	4.89	8.79	5.02	3.89	538 **	877	412	339
Florida	0.18	4.88	4.56	4.70	31	310	304	279
Georgia	0.14	4.41	4.06	4.27	59	269	248	210
Hawaii	-0.90	2.85	4.14	3.76	-34 **	190	261	224
Idaho	0.31	2.83	2.51	2.52	35 *	143	126	108
Illinois	0.24	2.98	2.76	2.74	91	235	165	144
Indiana	-0.14	2.29	2.24	2.42	23	164	156	142
Iowa	0.21	2.91	2.69	2.70	11	176	178	165
Kansas	0.67	3.74	3.15	3.07	42 *	220	213	178
Kentucky	-6.11	3.72	8.14	9.83	-234 **	208	487	442
Louisiana	0.56	3.83	3.58	3.27	35 *	194	188	159
Maine	0.11	2.34	2.23	-	19	170	151	-
Maryland	-0.02	3.53	3.33	3.55	64	283	231	220
Massachusetts	0.05	2.71	2.65	-	111	274	163	-
Michigan	-0.18	-	3.12	3.30	25	-	218	193
Minnesota	0.39	3.96	3.83	3.57	77	308	284	231
Mississippi	0.49	3.51	3.47	3.03	39	155	170	116
Missouri	0.34	3.60	3.47	3.26	40	217	203	177

TABLE 3 (CONTINUED)  
LONGITUDINAL ANALYSIS OF INSTRUCTIONAL STAFF SUPPORT EXPENDITURES:<sup>1</sup>  
STATE-BY-STATE COMPARISONS <sup>2</sup>, 1991-1992, 1994-1995 AND 1997-1998

States	Change (1998-1992)	Instructional Staff Support Expenditures as a Percentage of General Expenditures (Weighted Averages) <sup>3</sup>			Change <sup>4</sup> (1998-1992)	Instructional Staff Support Expenditures Per Pupil (Weighted Averages) <sup>3</sup>		
		1998	1995	1992		1998	1995	1992
<i>Nation</i>	0.24	3.31	3.32	3.07	72	241	214	168
New Hampshire	0.43	2.54	2.08	2.12	68 *	190	132	122
New Jersey	-0.44	2.41	2.85	-	58 *	303	245	-
New Mexico	1.05	5.31	4.22	4.27	91 **	287	211	196
New York	0.17	2.11	2.00	1.93	101 *	251	171	149
North Carolina	-0.41	2.94	3.31	3.36	-11	169	194	180
Ohio	0.42	4.12	3.71	3.70	73	269	216	196
Oklahoma	-0.01	2.70	2.50	2.71	9	130	135	121
Oregon	-0.85	3.23	3.63	4.08	-24 **	216	224	239
Pennsylvania	0.02	2.46	2.31	2.44	50	211	165	161
Rhode Island	0.07	3.31	3.18	3.24	108	292	208	184
South Carolina	-0.22	4.64	4.99	4.86	29	275	281	245
South Dakota	0.13	2.78	2.86	2.66	-6	139	172	145
Tennessee	-0.04	4.51	4.54	-	8	234	226	-
Texas	0.01	3.63	3.49	3.62	48	227	205	179
utah	-0.09	3.19	2.87	3.28	31	147	131	116
Vermont	-0.13	2.00	2.12	2.13	18	187	174	169
Virginia	0.32	4.99	4.69	4.67	83	340	296	257
Washington	-0.09	3.97	4.07	4.07	51	296	256	245
West Virginia	-0.19	2.34	2.27	2.53	3	147	158	143
Wisconsin	0.52	4.10	4.21	3.58	95	334	308	240
Wyoming	0.31	2.99	2.73	2.68	22	200	191	178

Source: U.S. Census Survey of Local Government Finances: School District Expenditures (F-33), 1997-1998

Note: (1) The expenditure data were adjusted using Chambers 1998 Geographic Cost Index

(2) The following states were removed from the analysis due to a high proportion of missing values during the study years: California, Montana, Nebraska, Nevada, and North Dakota

(3) The weighted average is calculated as the summation of expenditures per state divided by the total enrollment,

(4) \* indicates  $p < .05$ ; \*\* indicates  $p < .01$

TABLE 4  
COMPARISON OF WITHIN STATE VARIATION IN INSTRUCTIONAL STAFF SUPPORT<sup>1</sup> SPENDING  
PER PUPIL: THE COEFFICIENT OF VARIATION<sup>2</sup> FOR 1992, 1995, AND 1998

	Coefficient of Variation		
	1992	1995	1998
<i>Nation</i> <sup>3</sup>	51.6	49.1	52.0 <sup>4</sup>
Alabama	28.7	30.5	36.8
Alaska		76.9	66.3
Arizona		69.3	53.0
Arkansas	35.4	34.5	40.4
Colorado	59.0	72.2	60.0
Connecticut	54.8	52.9	62.5
Delaware	53.0	61.1	59.6
Dist. of Columbia	NA	NA	NA
Florida	24.4	25.9	26.3
Georgia	25.1	25.4	27.2
Hawaii	NA	NA	NA
Idaho	43.6	52.1	49.4
Illinois	88.8	80.6	80.8
Indiana	36.6	39.8	46.2
Iowa	51.3	45.8	47.4
Kansas	54.8	49.1	43.7
Kentucky	29.7	30.0	44.6
Louisiana	37.4	26.0	28.6
Maine		54.3	53.7
Maryland	27.1	27.4	18.3
Massachusetts	71.1	51.1	49.5
Michigan	75.3	69.4	
Minnesota	59.3	53.8	75.5
Mississippi	44.4	39.8	36.4
Missouri	62.7	50.7	61.5
New Hampshire	56.7	58.8	57.6
New Jersey	50.9	55.3	61.1
New Mexico	40.9	52.5	55.6
New York	73.0	56.2	64.0
North Carolina	21.1	23.7	29.8
Ohio	56.0	53.0	62.3
Oklahoma	88.8	95.5	72.4
Oregon	58.7	59.1	56.0
Pennsylvania	40.5	37.3	44.0
Rhode Island	38.0	45.3	44.5
South Carolina	24.1	29.2	28.8
South Dakota	40.3	42.3	61.1
Tennessee	51.6	34.9	37.9
Texas	106.4	72.4	68.1
Utah	56.4	47.4	68.2
Vermont	71.3	66.2	57.6
Virginia	44.9	44.6	59.5
Washington	49.3	50.7	55.4
West Virginia	44.4	44.4	47.6
Wisconsin	35.2	32.3	34.8
Wyoming	57.2	39.8	38.5

Source: U.S. Census Survey of Local Government Finances: School District Expenditures (F-33), 1997-1998

Note: (1) The expenditure data were adjusted using Chambers 1998 Geographic Cost Index

(2) The following states were removed from the analysis due to a high proportion of missing values during the study years: California, Montana, Nebraska, Nevada, and North Dakota

(3) The coefficient of variation is calculated as the standard deviation divided by the mean, multiplied by 100.

(4) The average reported here is taken across all states (n = 47)

available national data, U.S. school districts on average direct 3 percent of their annual budget toward professional development activities. Virtually all school districts spend less than 5 percent and relatively few spend less than 2 percent. The earlier estimates which suggest that these percentages are more on the order of 1 percent need to be revised upward.<sup>35</sup> Second, we found little evidence to support the claim that public education shifted substantially greater resources towards professional development during the 1990's. Indeed we found a great deal of stability in the overall spending on instructional staff support in 1992, 1995, and 1998. Overall, we found only slight evidence of a growth in spending on a per pupil basis and as a share of the total budget. These findings contrast with research that shows an upward trend in professional development spending among private sector firms evidenced during the 1990's.<sup>36</sup> Third, we found evidence of variation in spending within states, including higher spending levels among larger and more urban school districts. However, spending variability between districts changed very little during the 1990's. The finding that urban districts spend more resources on instructional staff support may be revealing the presence of greater opportunities for training and development in urban areas.<sup>37</sup> Urban school district organizations, for that matter, may be better able to tap non-district agencies and services to offer training to teachers. Moreover, greater access to higher education in urban areas may be a contributing factor in professional development activity, and therefore expenditure. Clearly this expenditure disparity warrants further research and analysis.

Although our share ratios indicate some degree of consistency across the states, these findings also indicate significant variation within states. More needs to be known about the year to year policy changes for each state that could influence variation in this form of support services. For some states, state level policy decisions about professional development may mandate and drive all professional development expenditures at the local level. For example, some states may simply pass federal aid to local districts for professional development, whereas others may match federal resources with state resources. Other states may allocate state resources for pro-

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35. It is notable that one percent of the general expenditures on K-12 education by public schools is not trivial. For 1997-1998, one percent of total general expenditures amounts to just under three billion dollars.

36. L. Bassi and M. Van Buren (1999).

37. K. Killeen, D. Monk, M. Plecki (2000).

professional development according to enrollment only, whereas others may distribute according to equalization formulas. In contrast, regional spending differences, particularly among Southern states, indicates that structural conditions may also influence spending on professional development. School districts in these states are often aligned closely with contiguous municipal governments. This may indicate the importance of joint school district and county boundaries, or parent government dependence, for teacher professional development spending. Among southern states, these structural characteristics may outweigh or complement other policy effects to contribute to overall spending on professional development. Relations between spending levels, equity indicators, and administrative structures may unveil important contextual determinants of professional development spending. Of particular interest is the degree to which state mandates for accountability reforms may motivate poorly performing districts to invest heavily in teacher professional development. Future analyses may approach this topic by examining relationships between changes in district performance and changes in professional development spending.

It would also follow, that local environmental and fiscal circumstances of the school district also influence expenditures on professional development. School districts in fast growing communities may experience high faculty turnover through retirement, new hires, or promotion. As an external contextual pressure, growth may drive some increases in professional development activity due to the added cost of training new personnel. However, the degree to which the school district may replace its staff with more experienced personnel, at lower wages, may have a mitigating impact. Furthermore, competition for resources between teacher salaries and training of teachers may be both adversarial and complementary depending on certain fiscal and environmental circumstances. Under certain budget constraints, resources for professional development may be easier to under-fund or cut, rather than grow. Fiscal stress may provoke school districts to maintain or even raise expectations that instructional personnel must seek out professional development on their own. Future research will want to examine how budget shortfalls or other forms of fiscal stress factor into programming and budgeting professional development. These points however, are not assessed easily by data available at the national level.

While we are impressed with the learning to be made about investments in professional development using the Census Bureau data, a number of important challenges remain. Perhaps the most significant of these surrounds accounting questions about what to



include/exclude from expenditure categories like “instructional staff support.” As we have indicated, the Census Bureau uses an inclusive category, and it would be desirable to deal with more disaggregated spending categories. Second, it would be useful to link professional development fund sources to professional development expenditures at the district and school level. Richer datasets, like this, would afford researchers the opportunity to trace dollars and examine where disparities may exist, and would enable more detailed analysis of trends over time.

Improving our understanding of the nature and level of expenditures on teacher professional development is particularly salient given the ever-increasing attention focused on improving the quality of instruction. There has been a growing evidentiary base for understanding the elements of effective teacher professional development and its relation to improving student learning.<sup>38</sup> However, very little empirical work exists which improves our understanding of the level and efficacy of fiscal investments in teacher professional development at federal, state, district or school levels. Continuing a focus on improving the available database concerning both the quantity and the quality of investments in teacher professional development is certainly warranted.

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38. David Cohen and Heather Hill, “Instructional Policy and Classroom Performance,” *Teachers College Record* 102 (2000): 294; R. Elmore and D. Burney (1999): Ann Liebermann, “Practices that Support Teacher Development: Transforming Conceptions of Professional Development,” *Teacher Learning: New Policies, New Practices*, ed. Milbrey McLaughlin and Ida Oberman (New York: Teachers College Press, 1996), 185-201.