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Elm Street School:
A Case Study of Professional Development Expenditures

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Abstract

This article addresses the question of how much is spent on teachers' professional development. A review of the literature finds two problems that have frequently led to inaccurate estimates of professional development spending: 1) the accounting codes that are used in many studies provide little description of spending, and 2) studies generally focus on district or state expenditures for professional development, but do not collect data on school-level spending. These problems are compounded by the fact that studies define professional development

spending differently, and thus it is difficult to compare findings across studies. In an effort to begin to address this problem, this study utilizes a detailed cost structure to analyze both district and school site expenditures on professional development across cost categories. The study found that school-level expenditures were a significant source of professional development for teachers. This has implications for the methodologies used to estimate current professional development expenditures and what level of expenditures would be necessary to generate dramatic improvements in student achievement.

In a climate of standards-based reform, schools are being called upon to assure that all students achieve to high standards. While most experts agree that extensive staff development will be necessary to improve instruction so this goal can be realized (Birman et al., 2000; Corcoran, 1995; Hertert, 1997; Killeen, Monk and Plecki, 2000; Little, 1993), few studies have identified effective professional development and even fewer have documented the professional development costs associated with implementing powerful, focused reform. This article shows how building knowledge about the level and structure of professional development spending necessary to achieve the goals of standards-based reform requires three changes in research design. First, a methodology needs to be developed that improves on traditional data used to identify spending. Second, it is necessary to have an analytical framework to understand the types of spending on professional development. Finally, it is important to accurately estimate the professional development resources available at schools, which are frequently the focus of standards-based reform and which can make decisions to augment or decrease the professional development resources available to teachers.

This case study extends a methodology developed by Hawley-Miles (Miles et al., 1999; Miles and Hornbeck, 2000) and her colleagues to collect district-level data on professional development spending to the school level and analyzes that data using the professional development cost structure developed by Odden, Archibald, Fermanich and Gallagher (2001). This case study was part of a larger research project that examined several urban districts' spending on instructional improvement. It is an early step of a broader research program that seeks to determine the level of professional development spending and spending strategies that will lead to improved teaching and higher student achievement. This case highlights Elm Street School, a K-8 school in a large urban district in the Mid-West that used professional development as an integral part of a coordinated schoolwide reform. Professional development is defined here as any activity intended to build teacher knowledge, skills and classroom instructional expertise. This includes, for example, workshops, teacher coaching, work with consultants, and the cost of teacher time to participate in activities designed to lead to professional growth; since this case study examines district and school expenditures, it does not cover activities that have no cost for the district or school (for example, course-taking paid for by teachers).

This case study seeks to answer three questions: 1) What is Elm Street's strategy for improving student achievement? 2) How does professional development support this strategy? 3) How does Elm Street allocate resources for professional development? In an attempt to answer these questions, prior research on professional development costs was reviewed. The first section provides an overview of the findings, along with an analysis of the strengths and weaknesses of those studies. The analysis leads to an explanation of

the methodology used to understand Elm Street's resource allocation. Next, Elm Street's educational strategy is explained in light of its district context. Finally, Elm Street's professional development spending is examined in terms of funding sources and the Odden et al. (2001) cost structure.

1. Prior Research

This section discusses eight studies on professional development spending. Taken as a whole, these studies highlight three important issues in this area of research:

- One common source of data is fiscal accounting codes. Studies that rely on this data source generally do not have detailed descriptive information about the nature of the professional development that was purchased. Other studies have sought to avoid this problem by using alternate data sources and focusing on the type of professional development provided to teachers. These studies have generally lacked detailed information about professional development spending.
- Researchers have used different analytical categories when reporting on professional development spending. As a result, it is difficult to make accurate comparisons across studies.
- Most studies have focused on spending at the district level. Few, if any, studies provide information about the professional development resources available at the school level. Since schools can be the locus of much decision-making about professional development, the lack of knowledge about school-level professional development spending may lead to inaccurate estimates of professional development resources available to teachers.

The studies reviewed in this section place the current case study in the research context by highlighting methodological issues and also showing what is currently known about professional development spending.

In one of the first major studies on the costs of professional development, Little et al. (1987) used interviews, surveys and state documents to analyze professional development spending in California in terms of school, district, regional, and state expenditures for participants' time and for the cost of providing the professional development activity. This is a landmark study because of its focused analysis on the quality of professional development and because it attempted a comprehensive analysis of professional development spending. The authors found that, on average, professional development spending equaled approximately 5% of the total classroom costs (or $4,379 per staff member; $6,880 in 2000 dollars).

The analysis provides a good large-scale picture of professional development spending. However, the estimates include the cost of two items that make them problematic: uncompensated teacher time (worth an estimated 60 cents for every dollar spent by the district on professional development); and lane salary increases resulting from credits earned through professional development activities (estimated as 61% of total staff development costs). These two items dramatically increase the estimated expenditures, yet uncompensated teacher time is not a direct cost. More importantly, salary increases are a legal part of teacher contracts and could not be reallocated to professional development strategies. Classifying these expenditures as professional development expenses is not useful for an analysis like the present one, which is focused on the actual

dollars available for professional development at the school site. With the present value of semester credits and uncompensated teacher time excluded from the analysis, Little et al. found that professional development accounted for around 1.4% of total classroom expenditures (or $1,229 per staff member; $1,931 in 2000 dollars). It is also important to note that although Little gathered data on "investment in school-based staff development," she found comparatively few of these expenditures. Since the report does not include survey instruments and interview protocols, it is unclear if such spending was not found because she did not look for school-level discretionary spending or if schools lacked sufficient control over their own budgets to provide professional development.

Little's use of non-budgetary documents allowed her to avoid some of the difficulties that arose in many other studies on professional development expenditures, which utilized budgets as the sole data source. As Chambers (1999) has argued, since accounting codes track resources only by source and expenditure categories created for fiscal accounting purposes, they do not provide meaningful information about many types of expenditures and their results. The lack of descriptive data in typical fiscal accounting systems created difficulties in several studies of professional development spending.

One study that encountered this difficulty was Hertert's (1997) multi-district analysis of professional development spending. Hertert attempted to use district budget data to estimate state and district professional development expenditures, evaluate the connections between spending and improvements in student performances, and suggest ways of reallocating resources to the most effective types of professional development. She originally approached 60 districts for participation, however only 16 kept the data necessary for a basic cost estimate. Of those, none were able to furnish information that would allow her to address the second and third questions in her study. Hertert was able to analyze professional development spending across six categories: professional development office, district conferences/workshops, nondistrict conferences/workshops, inservice training days, university/college coursework, sabbaticals, and temporary assignments. The analysis showed significant variation in districts' professional development spending, ranging from 1.7%-7.6% of net operating expenditures, with an average of 3.6% across districts. The spending level was equivalent to an average of 6.8% of the cost of teacher salaries, including benefits. From this she estimated that per teacher spending would be equivalent to $3385 if the district paid its average teacher $50,000 including benefits ($3,825 in 2000 dollars). Her study is most important, however, from a methodological perspective because it highlights how accounting mechanisms hamper research on professional development spending and the connection to educational outputs, which were the unanswerable parts of Hertert's original question.

Killeen, Monk and Plecki (2000) also attempted to understand districts' spending on professional development but chose to use two major national datasets, the Census Bureau's Survey of Local Government Finances: School District Finances (F-33), and NCES's Common Core of Data-Longitudinal File to produce nationally generalizable results. The study analyzed expenditures categorized as 'instructional staff support,' which provided the nearest approximation to professional development. Unfortunately, in one dataset this category also included items such as library, television, audio-visual, and computer-assisted instruction, which are not professional development. Further, much central office instructional support is also supervisory activities, which do not fit into a general definition of professional development. In conjunction with Hertert's work, this study clearly shows some of the challenges of attempting to quantify professional

development spending in districts and schools using the data available in current fiscal accounting systems.

Killeen, Monk and Plecki (2000) found that district spending for professional development ranged from 1.27-8.10% of total general district expenditures, with the average district spending 2.76% percent of its budget for professional development. While this range may seem large, most states' average district spending on professional development was between 2-5.2%, with only six states averaging below 2% and only Kentucky averaging above 5.2%. The average per pupil expenditure on professional development across states was $192 ($223 in 2000 dollars).

Other studies have discussed professional development costs but have focused more on describing and analyzing the nature, and extent of professional development opportunities. Garet et al. (1999) conducted a major study of professional development under the Eisenhower program, a federal math and science education initiative under Title II of the Elementary and Secondary Education Act. Eisenhower funding sought to improve students' math and science achievement through teacher training. Garet et al. conducted a nationally representative survey of teachers participating in the Eisenhower Professional Development Program to determine the characteristics of effective professional development, which they defined as professional development that leads to changes in teacher knowledge and practice that produced increases in student achievement. They found that effective professional development has six main features:

1. form (professional development should be school-based and job embedded);
2. duration (long-term and ongoing professional development is better);
3. collective participation (it is beneficial to have groups of teachers from the same school or department share the professional development experience);
4. content focus (teaching strategies should be combined with enhanced content knowledge of what is being taught);
5. active learning (opportunities for teachers to become engaged in their own learning are important);
6. coherence (professional development should be aligned with state standards, assessments, teachers' goals and school and district context).

They found that few teachers participated in highly effective professional development and that one of the main reasons was the higher cost. While districts spent an average of $185 per teacher ($197 in 2000 dollars) on typical professional development under the Eisenhower program, they found that exemplary projects in the Eisenhower Program spent approximately $512 per teacher ($529 in 2000 dollars) to provide effective professional development. The increased cost was typically for providing professional development of longer duration, and frequently included more active and embedded learning than the workshops that characterize traditional professional development. Though the study provides very useful information on the features of effective professional development, there is little explanation of how these costs were determined, which limits the usefulness and generalizability of the cost estimates. Furthermore, the estimate is for professional development in only one subject area, and must, therefore, be seen as a probable underestimate of the overall cost of professional development.

In their study of professional development in New York City's District 2, Elmore and Burney (1997) found that the district spent approximately $1,300 per teacher ($1,427 in 2000 dollars) on professional development, or 3% of the district's operating budget.

Elmore and Burney provide more detail than most on how the money is spent, by dividing overall spending into four categories: teacher compensation, contracted services, professional development lab, and materials. Yet they do not provide enough detail to analyze the expenditures in terms of how money was spent within those broad categories. For example, it is impossible to determine how much teacher compensation spending was for stipends for teachers attending professional development activities as opposed to the cost of substitutes to provide teachers release time. Additionally, one might want to know within contracted services, how much was spent on one-time workshops as opposed to ongoing coaching. Since other components of the ongoing study in District 2 demonstrate positive outcomes from the district's strategy, it would be very useful to have a systematic cost methodology so that District 2's spending on various professional development strategies could be compared to other districts.

Miller, Lord and Dorney (1994) presented a cross-case analysis of professional development in four districts. They used district-level interviews, principal interviews, and teacher interviews to build an in-depth understanding not available through analyzing budget data alone. However, they only presented a rough estimate of the percentages of spending on professional development. For example, in analyzing salary costs, they estimated that 15% of principals' time was a professional development cost, yet provided no explanation for how they arrived at this estimate. Their results are shown in Table 1.

Table 1
Miller, Lord and Dorney's Estimates of Professional Development Spending

District	Cost per Regular Classroom Teacher at time of the study (in 2000 dollars)	Cost as a Percentage of Operating Budget
Large	$ 3,529 ($4,462)	2.3%
Large	$ 1,755 ($2,219)	1.8%
Medium	$ 2,706 ($3,421)	2.0%
Small	$ 3,528 ($4,461)	2.8%

They broke down this spending into six categories: baseline (staff development office); district and school-level staff development salary; materials and services, travel, consultants, and miscellaneous; substitutes; externally funded programs; and personal contributions. These categories add little to our knowledge about how money is spent and since they did not explain in detail how these were derived and did not analyze the spending categories within externally funded programs, it is difficult to make meaningful comparisons to other studies.

Miles (Miles et al., 1999; Miles and Hornbeck, 2000) presented a more detailed approach to tracking districts' professional development spending. In a study of Boston's professional development spending, Miles, et al. (1999) analyzed professional development spending in light of two key concerns: 1) how closely professional development resources were aligned with the district's improvement plan; and 2) how well they matched the National Partnership for Excellence and Accountability in

Teaching (NPEAT) principles for effective professional development. They began by collecting budget data from all sources, and tentatively coding this data by district role (e.g. professional development, accountability, curriculum development and support), function (e.g. salary, stipend), and source (federal, state, local, private). They then interviewed heads of all relevant district departments to determine what activities were related to professional development. This allowed them to include costs, such as the salary for staff who designed professional development, that are not included in some analyses. Their interviews also enabled them to gather data on:

- The sources of professional development funds;
- The type of professional development activities purchased (e.g. consultant, staff salary, etc.);
- The topic of professional development activities;
- The locus of control for the professional development funds;
- The percentage of time district personnel spent on developing or providing professional development.

These data gave Miles et al. a refined understanding of Boston's professional development spending that enabled them to analyze spending by type, topic, control and source. They determined that the district spent over $23 million per year ($4,894 per teacher and principal; $5,170 in 2000 dollars) on professional development, or 3.8% of their total budget. Furthermore, by comparing this spending to district goals and NPEAT's principles for effective professional development, Miles et al. were able to make recommendations for how Boston could reallocate resources to improve the effectiveness of their spending.

In later work, Miles and Hornbeck (2000) expanded on this methodology to compare spending on professional development across four urban districts and the broader concept of instructional and school support across two of those districts. Their definition of instructional and school support included all activities undertaken on the part of a school district to support high quality instruction: professional development, accountability, curriculum development and support, special program monitoring and compliance, information systems, district student services and community outreach. These were included to the degree that they supported instructional improvement. For example, spending on information systems that allows schools to better analyze student performance data and tailor reform to specific needs would be considered instructional support; information systems spending that went to monitor student attendance would not be included. Miles and Hornbeck used interviews with department heads and other key personnel to determine how much each department spent on instructional support, and combined the data to learn how much the districts spent on professional development and instructional support.

They found that there was substantial variation across the districts in terms of the overall level of professional development spending as well as how money was spent. The districts spent between 2.4%-4.3% of their operating budget on professional development, not including the cost of contracted inservice training days. When these were included, the range was 2.4%-5.9% of the district operating budget, or from $2,010-$6,628 per teacher ($2,078-$7,002 in 2000 dollars). Additionally, district spending was frequently fragmented across many departments rather than focused on the districts' highest priority areas. Finally, district spending differed by strategy. While some districts invested heavily in workshops or subsidizing university course-taking,

others spent a higher proportion on stipends for teachers to take on responsibilities outside of traditional teaching.

While Miles' studies provided significant detail on district costs and strategies, they did not trace district expenditures to the school level. In districts that have decentralized school funding, the school general fund budget, as well as any other budgets controlled at the school level, could be an additional source of professional development spending. By extending Miles' methodology to include a school-level analysis, this case study of Elm Street provides a more complete picture of the resources used at a given school.

As can be seen, past studies on the costs of professional development have struggled with at least one, and usually more than one, of the following issues:

- The study provided information about professional development activities but provided little information about costs;
- The study identified costs, but lacked rich data on the nature of the professional development activities, or data on the different categories of expenditures that comprise total costs;
- The study identified costs, but did not use a systematic methodology that enables comparisons to other research;
- The study had no data on how schools supplemented or reduced district-level professional development resources available to teachers.

The first problem has created an overall scarcity of information about professional development expenditures and costs. The second is quite pervasive in the literature because analyses of school and district spending have typically tracked resources from source to accounting code expenditure, which provides little information on the nature of the professional development spending. The lack of a systematic methodology for identifying costs is even more problematic because of the first two problems: since few studies provide a desirable level of detail on both strategies and expenditures on professional development, it would be highly beneficial to be able to make meaningful comparisons across studies.

Finally, the majority of studies have analyzed *district* spending on professional development, since districts have traditionally been thought of as the source of most staff development resources. Schools, however, are increasingly playing a prominent role in supporting instructional improvement. They serve as the site of many of the more innovative professional development strategies, like on-site coaching and peer mentoring, which are more likely to have the characteristics of effective professional development identified in Garet, et al. (1999). Many schools also have control over at least a portion of their budget and are allocating some of these resources to professional development. Conversely, they can also choose to disregard recommendations for spending money on professional development instead purchasing something else, thus reducing professional development spending. For these reasons it is necessary to include school-level professional development expenditures in the analysis of how professional development resources can be used to improve instruction and student learning. This study addresses these issues.

2. Framework

Based on prior research, the following goals were set for the study: to develop a

methodology that would provide a good estimate of the total professional development expenditures at the school site and information on the nature of professional development activities; to use a systematic framework for analyzing professional development costs.

This case study builds on Elmore and Burney's (1997), Miller, Lord and Dorney's (1994), and Miles' (Miles et al., 1999; Miles and Hornbeck, 2000; Miles, 2001) methodologies, but takes them a step further by tracking district spending on professional development to the school site, collecting data on school-level expenditures for professional development and analyzing expenditures in terms of a clearly articulated cost structure. Even though the resource picture at Elm Street is quite complex, the methodology outlined below made it possible to develop an in-depth understanding of the sources and deployment of professional development resources at Elm Street. The next section explains the cost structure that was used to analyze professional development resources from both levels.

In a review of literature on the costs of professional development, Odden, et al. (2001) built on the Garet et al. (1999) and Elmore and Burney (1997) studies (among others) to create a systematic framework for analyzing the costs of professional development. Looking across these existing studies they identified six types of school and district professional development expenditures: 1) teacher time, 2) training and coaching, 3) administration, 4) materials, equipment and facilities, 5) travel and transportation, and 6) tuition and conference fees. This cost structure provides a way to identify, calculate and analyze the professional development resources that districts and schools make available to teachers at a given school site. Table 2 presents the Odden, et al. (2001) cost structure, which is used in the remainder of the article to identify and analyze professional development expenditures at Elm Street. For a more detailed explanation of the elements of the cost structure and a general example of how to calculate expenditures see Odden, et al. (2001).

As will be seen in this case study, the cost elements provide a meaningful level of detail on how money is spent for professional development at the district and school level. It covers all expenses necessary to produce and carry out a broad range of professional development activities. The usefulness of this sort of framework for making comparisons across studies becomes most apparent when analyzing the studies by Miller, Lord and Dorney (1994), Miles, et al. (1999) and Miles and Hornbeck (2000). Although these studies use somewhat similar methodologies, it is difficult to draw conclusions across studies about the level and effectiveness of professional development spending without a shared analytic framework. The next section explains how data were collected for this study.

Table 2
A Cost Structure for Professional Development

Cost Element	Ingredient	How Cost is Calculated
Teacher Time Used for Professional Development	**Time within the regular contract:** 1. -when students are not present before or	1. teachers' hourly salary times the number of student free hours used for pd

	after school or on scheduled in-service days, half days or early release days 2. -planning time **Time Outside the regular day/year:** 3. -time after school or on weekends 4. -release time provided by substitutes	2. the cost of the portion of the salary of the person used to cover the teachers' class during planning time used for pd 3. the stipends or additional pay based on their hourly rate that teachers receive to compensate them for their time 4. substitute wages
Training and Coaching	**Training** 1. -salaries for district trainers 2. -outside consultants who provide training; may be part of CSRD **Coaching** 3. -salaries for district coaches including on-site facilitators 4. -outside consultants who provide coaching; may be part of CSRD	1. sum of trainer salaries 2. consultant fees or comprehensive school design contract fees 3. sum of coach and facilitator salaries 4. consultant fees or comprehensive school design contract fees
Administration of Professional Development	1. **Salaries** 2. **Overhead**	1. Salary for administrators of professional development programs times the proportion of their time spent administering the programs

		2. Overhead or supplies necessary to administer programs
Materials, Equipment and Facilities Used for Professional Development	1. **Materials** 2. **Equipment** 3. **Facilities**	1. materials for pd, including the cost of classroom materials required for CSRDs 2. equipment needed for pd activities 3. rental or other costs for facilities used for professional development
Travel and Transportation for Professional Development	1. **Travel** 2. **Transportation**	1. Costs of travel to off-site pd development activities 2. Costs of transportation within the district for professional development
Tuition and Conference Fees	1. **Tuition** 2. **Conference Fees**	1. Tuition payments or reimbursement for university-based pd 2. Fees for conferences related to pd

3. Methodology

The data collection for this study began in conjunction with Miles' (2001) multi-district analysis of expenditures on instructional improvement. First data were collected on instructional and school support at the district level. As in Miles' earlier work, instructional and school support was defined as all district supports for high-quality instruction, including professional development. The analysis began with the entire district general fund budget as well as those from all other public and private sources of funding for the district. Line items such as transportation costs, which were clearly unrelated to instructional improvement, were eliminated. The remainder of the analysis had six main steps:

- a) District-level interviews were used to develop an understanding of which expenditures were related to instructional and school support and to code spending in all departments within the various categories of instructional support: professional development, accountability, curriculum development and support, special program monitoring and compliance, information systems, district student services and community outreach. Interviews were conducted with the people in charge of many departmental and categorical budgets including: quality improvement, career in teaching, administration, curriculum & assessment, magnet, vocational education, accountability, teacher leadership, professional development, Title I, Title II, and special education, among others. The interviews provided data on which district initiatives supported instructional and school support, the type of spending each related line item represented, and the percentage of salary costs for relevant individuals that should be considered instructional and school support.
- b) At this point, the focus narrowed to those expenditures within instructional and school support that had been defined as professional development. This included, for example, district literacy coaches, stipends paid by the district for lead teachers, the costs of comprehensive school reform design contracts, salary costs for those coordinating professional development, consultant fees, materials costs, and the district's professional development center. The analysis includes the cost of teacher time within and outside of the regular contract. In this case, it did not include teacher inservice days, since the district has none. As explained earlier, the cost of salary advancements due to professional development credits and the cost of uncompensated teacher time were not included.
- c) For each line item, several types of data were collected: the description, source, control (e.g. district, school), type (e.g. consultant fee, stipends), topic (e.g. literacy, standards), form of delivery (e.g. school-based coaching, workshop). With this level of detail, it was possible to sort data according to general initiative (e.g. literacy, standards, teacher leadership) as well as by cost element (teacher time, training and coaching, administration, materials, equipment and facilities, travel and transportation, and tuition and conference fees).
- d) Professional development costs from all district budgets were then allocated, where possible, to the school level. The cost of each initiative was divided by participating schools based on the staff and overhead costs in one of three ways:
    - By participating school—for example, if twenty schools participated in a literacy program, the overhead costs for the entire coaching program would be split evenly amongst the twenty schools. If, within that program, five schools shared a literacy coach, each school was 'charged' for 1/5 of that coach's salary.
    - By pupil at each participating school—for example, one initiative provided a block grant to participating schools based on student enrollment. The number of pupils at each participating school was multiplied by the per pupil funding formula to determine the resource level at the school;
    - By participating teacher—for example if the district offered an after school workshop that cost $1,000 to produce and five teachers attended, each of their schools would be 'charged' $200.

      The precise method for doing this for each initiative is explained in a later section.

- e) Once district-level spending was tracked to the schools, resources from the site budget and categorical programs were analyzed. Line item budgets were available for both the school general fund and Title I (the federal grant that provides supplemental educational funding for low-income students) budgets. For Title VI (the federal class size reduction initiative), Obey-Porter (the federal comprehensive school reform demonstration project), Literacy Today (a state literacy initiative) and TechNow (a state technology initiative) only total allocations were available. All of these sources were added to the district information to generate a preliminary estimate of resources controlled by the school. The next step ascertained how much of these resources were used for professional development.
- f) Using the data collected in the earlier steps, preliminary and follow-up phone interviews were conducted with the principal to verify information, identify how categorical dollars were used and determine how the school allocated discretionary dollars for professional development at the school site. The interviews also provided an understanding of the school's educational strategy and how resources were deployed to achieve school goals. At all stages, data was gathered by cost structure elements.

These data provided three types of information: Qualitative information on the school's goals and strategies; A comprehensive resource use picture; Descriptive data that enabled this analysis to move beyond accounting codes to an understanding of the professional development strategies and their cost.

The combination of these three types of data makes it possible to present professional development spending at Elm Street School utilizing the cost structure developed by Odden, et al. (2001). Additionally, as becomes apparent in the next section, these allow for a transparent explanation of how cost estimates were developed. Finally, this methodology and cost structure makes it possible to overcome the barriers typical accounting practices create to understanding the relationship between professional development and educational strategies.

4. District And School Context

Elm Street School is in the Cincinnati Public Schools, a moderately large, urban district in the midwest. In the mid 1990s the district had relatively low achievement, but has made a significant attempt to generate improvements by focusing on school accountability, coordinated reform, teacher leadership, and instructional improvement. Cincinnati's accountability system categorizes schools into five performance categories, the lowest of which can trigger 'redesign,' the district's school reconstitution plan. Redesign schools receive a new principal, who hires lead teachers. Together they select a new staff, who are required to implement the comprehensive school reform model chosen by the school's redesign committee (made up of four members chosen by the district and four members chosen by the teachers' union). Cincinnati has also supported the adoption of comprehensive school reform models in many schools in the district that are not redesign schools.

Cincinnati has several other strategies for improvement in addition to comprehensive school reform. The district has invested significantly in teacher leadership through its shared decision-making and lead teacher programs. Additionally, the district provides ongoing teacher coaching on literacy and aligning instruction to standards for schools that

participate in either of these initiatives. Furthermore, the district provides mentors for new and struggling teachers, and hosts teacher-interns from a local university. Finally, the district contracts with an independent staff development agency to provide workshops and training for teachers on topics that the district identifies as important for instructional improvement. Cincinnati's initiatives have made significant district resources available to school sites undertaking reform, and have focused schools' efforts on raising student achievement to the district's standards.

In the 2000-2001 school year, Elm Street School had approximately 400 students in grades K-8, almost all of whom qualified for free and reduced lunch; 20% of the students participated in special education. Additionally, the student body was highly mobile, with about a 50% student turnover rate during the course of the school year. In 1998, Elm Street chose to implement Expeditionary Learning Outward Bound [ELOB] to improve student performance, even though it was not a redesign school. ELOB is a comprehensive school reform design that utilizes authentic, integrated instructional units to support students' academic skills and personal growth. For the past three years, ELOB has provided significant professional development for the staff so that they can meet the goals of the model.

In addition to ELOB, Elm Street has created a multi-faceted literacy model with the assistance of an outside consultant. The model was designed to mesh with ELOB, and has been reviewed by ELOB consultants. It has several components: Two assessment programs (one of which is computer-based) to determine student reading level, with corresponding reading materials at each student's level; 90-minute literacy blocks; Four instructional assistants to work with teachers on literacy and provide small group instruction; One-on-one reading tutoring offered by teachers and teacher-interns for struggling students in the six weeks leading up to state testing.

Elm Street has also made several structural changes to provide individual attention to help students succeed in their academic program. The first of these changes is reduced class size. Elm Street has 25.6 FTE teachers, creating an overall student to teacher ratio of less than 16:1. Class sizes are reduced in the elementary grades to the following levels: Kindergarten: 13 to 1; Elementary: 15-17 to 1; 7th and 8th grade: 24 to 1. The smaller classes in the elementary grades facilitates teachers' use of developmentally appropriate practices. Additionally, teachers were organized into three teams (K-3, 4-6, and 7-8 grade) to facilitate collaborative work. Elm Street also used looping and multi-age classes so that students and teachers could spend several years working together.

Finally, the school has changed the allocation of time throughout the school day to provide teachers with at least 75 minutes a week of guaranteed common planning time. Students are in school from 7:30-1:45 daily. Under the old schedule, teachers were required to be in school from 7:15-2:15 daily; now the teacher day begins daily at 7:30. Since the teacher day starts 15 minutes later, 75 minutes of teacher contract time is accumulated each week and used for meetings on Wednesday afternoon, when teachers remain until 3:30. This provides teams with 75 minutes of common planning time each week, which were typically used for work on ELOB curriculum development.

The principal noted that the combination of these strategies provides a "seamless" education for students. Students have opportunities to build close relationships with teachers, receive instruction tailored to their individual needs, and participate in authentic

learning activities. To support this instructional program, Elm Street invested a significant amount of money in professional development, much of which focused on implementing ELOB, the literacy model or aligning instruction to standards. The next section outlines the various sources of professional development spending at Elm Street.

5. Sources of Professional Development Spending at Elm Street

Elm Street received federal, state, local and private funding. The school site had significant control over the budgets from some sources, whereas other available resources were controlled at the district level. Unlike earlier studies that focused on data from one level, this case study tracks district and school expenditures on professional development from federal, state, local and private sources. Given the complexity of the data, it is useful to think of two categories of professional development spending that provide professional development resources to Elm Street:

1. District spending on the infrastructure to support professional development (such as the salaries of central office administrators of professional development programs, clerical support, equipment, and supplies) and on professional development activities and programming that are provided to school staff. This category can further be divided into two groups:
    - a. Trackable funds: some district spending on professional development can be reasonably tracked to the schools that receive the direct benefit of the resources. Of district spending on professional development, $7.4 million dollars (approximately 73%) of district spending fell into this category. This includes spending on district-funded coaches that work with schools on instructional improvement, mentors for new teachers, courses provided by the district professional development academy and funds earmarked for adoption of CSRD's. This article provides significant detail on this category of spending;
    - b. Untrackable funds: some district spending on professional development occurs in a manner such that it is *not* possible to track which schools receive the direct benefit of the resources. Of district spending on professional development, $2.7 million dollars (or 27%) fell into this category. It was not allocated to the school level for one of the following reasons:
        - Spending was designed to build individual or district-level rather than school-level capacity (for example district support for individuals to pursue National Board certification) and so could not be accurately tracked to a given school;
        - Funds were controlled by neither the district or school (for example, the contractually mandated, union-controlled professional development fund);
        - Spending was too fragmented to be accurately allocated to the school level;
        - While funding was allocated for professional development, the dollars had not yet been spent.

      For these reasons it was not possible to accurately allocate this district spending to the school level.
2. The other category of professional development spending at Elm Street includes all school-initiated professional development activities funded from schools' own discretionary budgets. This would include a school's use of Title I money to hire a

facilitator or coach to provide teachers training and support in implementing a CSRD, structuring planning time to provide teachers time within the school day for professional development, or using the school's general fund budget for materials or travel expenses for professional development.

The upcoming sections explain the sources of trackable district-level and school-level professional development resources at Elm Street.

District-Level Support for Professional Development at Elm Street

Elm Street participated in most of Cincinnati's professional development initiatives, including literacy coaching, standards coaching, teacher leadership, teacher mentoring, and the teacher intern program. Individual staff members also took courses on various topics offered by the district. Table 3 lists the district initiatives in which Elm Street participated, the strategy used for allocating the cost to Elm Street, and the cost estimate of the resources Elm Street received. All estimates include the cost of fringe benefits where applicable.

Table 3
District-Level Professional Development at Elm Street

Initiative	Allocation Method	District-wide Expenditure per Initiative	Elm Street Resource Estimate
Teacher Leadership	Teacher stipends allocated per teacher to participating schools; other initiative costs allocated evenly across participating schools	$1,195,963	$25,999
Staff Development Agency Courses	Agency costs allocated proportionally across schools based on prior year course-taking patterns	$942,950	$22,960
Standards Alignment Coaching	Costs allocated to participating schools based on coach's salary	$414,348	$15,936
Teacher Intern Program	Salary and stipend costs allocated to participating schools	$219,475	$15,190
Literacy Coaches	Costs allocated to participating schools based on coach's salary	$405,674	$ 9,998
Peer Mentoring	Costs allocated across schools based on number of new hires/intervention teachers at each school	$632,746	$ 6,004

Eisenhower Math and Science Workshops	Allocated proportionally across schools based on teacher participation in courses	$343,371	$ 1,576
Total District-controlled Professional Development resources at Elm Street:			**$97,663**

In sum, the district provided Elm Street's teachers with an average of $3,815 in professional development resources ($97,663 ¸ 25.6 teachers = $3,815).

As previous research has shown (Miles & Hornbeck, (2000); Miles, et al., (1999); Elmore & Burney (1997); Hertert, 1997; Miller & Lord, (1994)), districts utilize multiple sources of funding for professional development. Cincinnati is no exception. As Table 4 shows, Cincinnati used federal programs, state and local tax revenues and private donations to fund professional development.

Table 4
Sources of District-Level Professional Development at Elm Street

Initiative	**Federal**	**State/Local**	**Private**	**Total**
Teacher Leadership		$ 25,999		$ 25,999
Staff Development Agency Courses	$ 5,419	$ 17,541		$ 22,960
Standards Alignment Coaching	$ 8,653	$ 4,590	$ 2,693	$ 15,936
Teacher Intern Program		$ 15,190		$ 15,190
Literacy Coaches		$ 9,998		$ 9,998
Peer Mentoring		$ 6,004		$ 6,004
Eisenhower Math and Science Workshops	$ 1,576			$ 1,576
Total	**$15,648**	**$ 79,322**	**$ 2,693**	**$ 97,663**
Source Percentage of Total	16%	81%	3%	100%

As Table 4 shows, federal dollars support 16% of the district-level professional development spending at Elm Street. One significant source of federal funding in Cincinnati is Title I, the federal compensatory education program. The federal government recommends that 2.5% of Title I money be used for professional development. Cincinnati used some of their Title I money to fund staff development agency courses and standards alignment coaching at Elm Street. Title II, also known as the Eisenhower Program, provides funding for professional development in math and science. Cincinnati used this funding to sponsor several district workshops in which individual teachers at Elm Street chose to participate.

The largest source of dollars for Cincinnati's professional development initiatives were state and local funds, which provide 81% of the district-level professional development resources at Elm Street. Finally, the district resources used at Elm Street were supplemented slightly by private donations, which were added to federal, state and local funding for the standards initiative.

School-Controlled Support for Professional Development at Elm Street

At the school level, Elm Street utilizes funding from federal, state and local, and private sources for professional development. Elm Street was awarded $75,000 grant from the Obey-Porter program, a federal program that supports the implementation of comprehensive school reform designs. All Obey-Porter funds were spent on implementing ELOB, which is considered here to be a form of professional development. Since Obey-Porter grants are applied for by individual schools, this is an excellent example of how school-level actions can increase the resources available for professional development in the school.

Elm Street also participated in the federal Title I program. The school received $293,150 in Title I funding for the 2000-2001 school year, but spent none of this for professional development even though the federal guidelines recommended spending 2.5% for professional development. In contrast to the Obey-Porter example, this shows how school discretion can be used to reduce professional development spending at a school. This decision should be seen in light of an overall context of significant professional development expenditures at Elm Street, and district-level use of Title I funds for professional development.

Cincinnati distributes funding for Literacy Today, a state program designed to improve literacy instruction. Even though the literacy program carries no professional development requirements, Elm Street spent $8,000 (of the $30,000 at its disposal) to provide substitutes so teachers could participate in literacy professional development. Cincinnati also participated in TechNow, a state educational technology initiative. The state recommended that 30% of this money at each school be spent on technology professional development. The data showed that Elm Street spent all of its TechNow funds to purchase computers, but that teachers accessed technology training through district-sponsored workshops.

State and local funds also provided Elm Street with its general fund budget, which in addition to paying staff, materials and operating expenses, was the largest single source of professional development funding at Elm Street. By reallocating teacher time within the contract week, Elm Street was able to provide $63,983 in teacher time for professional development without additional costs. While adding this teacher time into an estimate of Elm Street's expenditures on professional development significantly increases the level of general fund spending, as mentioned earlier in the discussion of teacher time, including this resource use in our estimate makes it possible to compare how different schools and districts create time for teachers to engage in professional development. For purposes of comparison, however, estimates of professional development spending without including teacher time within the regular contract are included in a later section. In addition to using time after school for professional development, Elm Street paid $7,770 from the school general fund to provide for

substitutes to release teachers during the school day to participate in professional development activities.

Elm Street also used $38,900 from its general fund to pay for travel expenses for teachers attending ELOB conferences and workshops. In addition, Elm Street received a $2,500 grant from a private group to pay for the costs of travel and materials for conferences. Table 5 shows the sources of professional development funding at the school level, including the cost of teacher time within the regular contract. (Tables 7 and 8 show how the cost of teacher time within the regular contract influences estimates of professional development costs). Professional development spending at Elm Street, like at the district level, comes from several sources.

Two factors are most notable. The first is the large contribution of a single federal program, Obey-Porter, to professional development spending at Elm Street. Since all schools participating in CSRD's pay contractual fees, Elm Street would have had to either acquire additional resources from a different source or reallocate other resources in the school budget if it had not received that grant.

Table 5
Sources of School-Level Professional Development at Elm Street

Description	**Federal**	**State/Local**	**Private**	**Total**
CSRD participation	$ 75,000			$ 75,000
Substitutes for teacher release		$ 15,770		$ 15,770
Teacher time after school within the regular contract		$ 63,983		$ 63,983
Travel		$ 38,900	$ 2,500	$ 41,400
Total	**$ 75,000**	**$118,653**	**$ 2,500**	**$196,153**
Source Percentage of Total	38%	61%	1%	100%

Second, Elm Street contributes an average of $7,662 per teacher of professional development resources to the district-level spending. This highlights the importance of conducting school-level professional development spending analyses in districts that have decentralized budgeting. It is worth noting that while the findings are not generalizable to other schools in the district, other schools in the broader study also used site discretionary funds to dramatically increase professional development resources for their teachers (Fermanich, 2001).

Other Resources for Professional Development at Elm Street

Elm Street also has other resources that support professional development that were not quantified in this study. More specifically, there were three major types of additional staff development resources at Elm Street that were not included in the analysis:

- As mentioned earlier, 27% of Cincinnati's professional development spending could not be tracked to the school level. Across the district, this is equal to an average of $1,038 per teacher. This could be added to the tracked spending for a

sense of the total per teacher cost of Elm Street's professional development opportunities, as is done on the next page.

- Additionally, since Elm Street participated in the teacher intern program with a university, teachers were eligible to apply for individual grants from the university to support their own course-taking. Since these are outside of district and school control and no records of participation were obtained, this study did not include them.
- Finally, previous research (especially Little (1987), which attempted to quantify this resource) found that uncompensated teacher time was a significant resource for professional development. At Elm Street this included, among other things, graduate classes that several teachers took at a local university, and uncompensated collegial work on instruction outside of the contract day. However, since the neither the district nor the school site bears any of this cost, it was not included in the analysis.

Leaving these activities out of the analysis potentially leads to an underestimate of professional development resources at Elm Street; however, accurately quantifying these resources is outside the scope of this study. Table 6 presents a summary table presenting total, per teacher and per student professional development resources at Elm Street at both the district and school level.

Table 6
Professional Development Resources at Elm Street by Level

Locus of Control	**Percentage Spending per level**	**Total Professional Development Spending**	**Total per Teacher**	**Total per Student**
School level	67%	$196,153	$ 7,662	$ 491
District level	33%	$ 97,663	$ 3,815	$ 244
Total	**100%**	**$293,816**	**$11,477**	**$ 735**

As Table 6 shows, Cincinnati and Elm Street combined provide for $11,477 per teacher in professional development resources. If the untracked average district-level expenditure per teacher of $1,038 were included, this estimate would be $12,515 per teacher. Since we are unable to definitively track these resources to Elm Street, however, the higher estimate is not used in this study.

6. Cost Structure of Professional Development Spending At Elm Street

The remainder of this article analyzes Elm Street's professional development resources by the six-element cost structure discussed earlier, which provides a framework for understanding how resources were allocated within the school. Table 7 provides a breakdown of all district and school level professional development expenditures at Elm Street. If an ingredient within the cost structure is not listed, Elm Street did not have any expenditures in that category.

Table 7
Expenditures at Elm Street by Cost Element and Ingredient

Cost Element	Ingredient	Description of expense	Cost
Teacher Time	Within Regular Contract	Time after School	$63,983
	Outside regular contract	Stipends	$129
		Substitutes	$15,770
	Total Teacher Time		**$79,882**
Training and Coaching	Training	Purchased Training, including the ELOB contract fee (with conference costs excluded)	$89,290
	Coaching	Salaries of District Coaches	$41,299
		Purchased Coaching	$15,936
	Total Training and Coaching		**$146,525**
Administration of Professional Development	Administrative salaries	Salaries for administration of district professional development programs allocated to participating schools	$5,000
	Overhead	Overhead costs for administering district professional development programs allocated to participating schools	$16
	Total Administration		**$5,016**
Materials, Equipment and Facilities Used for Professional Development	Materials	Materials costs for district professional development programs allocated to participating schools	$761
	Total Materials, Equipment and Facilities		**$761**
Travel and Transportation for Professional Development	Travel	Travel to ELOB conference	$41,400

	Transportation	Transportation costs for district professional development programs allocated to participating schools	$132
	Total Travel and Transportation		**$41,532**
Tuition and Conference Fees	Conference Fees	ELOB conference fees included in the CSRD contract	$20, 100
	Total Tuition and Conference Fees		**$20,100**
Total			**$293,816**

Elm Street had two main types of expenditures for Teacher Time: $63,983 of teacher time within the contract when students were not present was used for team meetings after the student school day; (no planning time provided by specialist teachers was used for professional development); and $15,770 was used for substitutes to provide release time for teachers to attend professional development activities. In addition, the district spent $129 for teacher stipends at Elm Street, as calculated by allocating the teacher stipends expenditures across schools participating in the training program. Purchased training comprised almost 61% of total Training and Coaching expenditures; of the $89,290 for purchased training, $54,900 was for the ELOB contract fee, while the remainder covered a variety of workshops. Most of the coaching expenditures were for salaries of district personnel who provided coaching ($41,299), however, the district hired some consultants as coaches for specific professional development initiatives ($15,936). The majority of Administration expenditures ($5,000) were for salaries of district administrators, however one district program had expenditures for materials necessary to administer the program of which $16 were allocated to Elm Street. Materials expenditures by different initiatives were also allocated across participating schools, for a total of $761 at Elm Street. Elm Street's travel expenses ($41,400) were all related to attending ELOB conferences and training events; the expenditures for transportation ($132) that were allocated to Elm Street covered travel within the district for a particular coaching initiative. Finally, an estimated $20,100 of conference fees were separated from the ELOB contract cost to estimate Elm Street's expenditures for staff to attend professional development conferences.

For purposes of analysis, it is useful to focus on the comparison of spending levels across cost elements, which is shown in Table 8. Of Elm Street's expenditures for professional development, 77% were for either Teacher Time or Training and Coaching. Elm Street had more expenditures for Training and Coaching than any other cost element, spending $89,290 (or 61% of Training and Coaching expenditures) for training and $57,235 (or 39% of Training and Coaching expenditures) for coaching. Most of the Travel and Transportation and Tuition and Conference Fees expenditures were for participation in ELOB. Expenditures for Administration, and Materials, Equipment and Facilities were only a small portion of total professional development expenditures.

Table 8

Resources for Professional Development by Cost Structure

Cost Element	Expenditure	Average Expenditure per Teacher	Average Expenditure per Pupil	Percentage of Total Professional Development Expenditures
Teacher Time	$79,882	$3,120	$200	27%
Training & Coaching	$146,525	$5,724	$366	50%
Administration	$5,016	$196	$13	2%
Materials, Equip. & Facilities	$761	$30	$2	< 1%
Travel & Transportation	$41,532	$1,622	$104	14%
Tuition & Conference Fees	$20,100	$785	$50	7%
Grand Total	$293,816	$11,477	$735	100%

As noted earlier, it is important to include the cost of teachers' time within the school contract as part of a discussion of the cost of professional development. At Elm Street, however, this time had no additional cost. For purposes of comparison, Table 9 shows Elm Street's professional development expenditures excluding teacher time within the regular school day. Excluding the cost of teacher time within the contract, professional development resources at Elm Street appear even more heavily concentrated in training and coaching. Additionally, this comparison shows the extent to which school-level resource allocation decisions enabled Elm Street to direct existing resources in teacher time to professional development without increasing spending.

Table 9
Resources for Professional Development by Cost Structure, Not Including Teacher Time within the Regular Contract

Cost Element	Expenditure without Teacher Time within the Contract	Average Expenditure per Teacher	Average Expenditure per Pupil	Percentage of Total Professional Development Expenditures
Teacher Time	$15,899	$621	$40	7%
Training & Coaching	$146,525	$5,724	$366	64%
Administration	$5,016	$196	$13	2%

Materials, Equip. & Facilities	$761	$30	$2	< 1%
Travel & Transportation	$41,532	$1,622	$104	18%
Tuition & Conference Fees	$20,100	$785	$50	9%
Grand Total	$229,833	$8,978	$575	100%

The professional development expenses for ongoing implementation of a comprehensive school reform initiative appear across four cost elements, including teacher time within the regular contract. The expenditures for travel and transportation and tuition and conference fees, a total of $61,632, enabled teachers to attend the ELOB conference. Additionally, $54,900 of the training and coaching expenditures paid the fee for participating in ELOB; this provided the school with consultants and other support for implementation.

In addition to expenditures for participation in ELOB, the training and coaching expenses covered $67,234 in district coaches across a variety of initiatives, of which $16,000 provide stipends for teachers to provide professional development to their colleagues. Workshops across a variety of topics cost $24,391. Spending for training and coaching at Elm Street was somewhat fragmented, but significant amounts of spending were directed towards major school improvement strategies of comprehensive school reform, improving literacy instruction, and teaching to standards.

Discussion

The methodology of interviewing multiple central office staff as well as the principal to identify professional development expenses at Elm Street helped the researcher gain a more complete picture of spending than would have been possible from an analysis of budget data alone. This methodology provided much more detailed and accurate information about the district program resources available at the school site. Furthermore, this study uncovered some resources that were not apparent from school budget data. One example of this was the clarification of how substitute time is used. Through interviews, it was determined that of the $11,655 Elm Street spent for substitutes, $7,770 went to provide teachers release time for professional development.

The most interesting finding of this study is the high level of expenditure per teacher for professional development.

Table 10
Previous Estimates of Professional Development Spending

Author's Name (year)	Spending per Teacher	Spending per Student	Notes

Little, et al. (1987)	$1,931	$93	Excluding the future value of credits and uncompensated teacher time
Hertert (1997)	$3,825		
Killeen, Monk and Plecki (2000)		$223	Did not report spending per teacher
Garet (1999)	$529		Estimate for high quality professional development
Elmore and Burney (1997)	$1,427		
Miller, Lord and Dorney (1994)	$2219-$4461		
Miles, et al (1999)	$5,170		Estimate per teacher and principal ?incl teacher time?
Miles and Hornbeck (2000)	$2078-$7002		Estimate including cost of teacher time within the contract
Elm Street Case	**$11,477**	**$735**	Estimate including cost of teacher time within the contract

Including time within the teacher contract, the district and school spent an average of $11,477 on resources of professional development; excluding this time still left an average of $8,978 per teacher.

Table 10 above shows how these findings compare with earlier research on professional development spending. All dollar amounts have been reported in 2000 dollars, the year from which Elm Street data was collected. Table 10 raises a very important question: Why do the estimates for Elm Street's professional development expenditures appear so much higher than those found in other studies. There are three main reasons.

Unlike much earlier research, Elm Street data was collected using a multi-step methodology. The researcher supplemented budget data, traditionally the main source of data for professional development cost studies, with interviews that enabled the researcher to more accurately determine which expenditures were directly related to professional development. Without these interviews the data would have been much less precise, since current accounting systems are not designed to clearly identify all types of professional development expenditures.

Additionally, data was collected on school discretionary as well as district expenditures for professional development. If only the district-level spending were taken into account, the researcher would have only estimated Elm Street professional development expenditures of $3,814 per teacher or $244 per student. This is within the range found in some other studies, but clearly underestimates the total professional development resources available to Elm Street teachers.

The methodology and cost framework utilized in this study includes teacher time within the regular contract in the estimate. This adds $2,499 to the per teacher estimate of professional development expenditures. Similarly, Miles and Hornbeck (2000) include

district-level spending for teacher time, which includes district-wide inservice days, in their calculations. Since Cincinnati does not include such days in the district contract, the teacher time in our estimates is all provided on the school level. Regardless, with teacher time removed, the estimates fall closer to those estimated in other studies.

Unfortunately, beyond these three reasons it is not possible to tell exactly why the expenditure estimates vary across studies. There are two potential reasons:

1. The districts studied had varying levels of investment in professional development. This possibility is supported by cross-district comparisons such as those by Hertert (1997), Miller, Lord and Dorney (1994), and Miles and Hornbeck (2000), which found significant variation in professional development spending across districts;

2. The data upon which different researchers based their analyses included different items under the category of professional development. This possibility is also supported by existing research. The most notable example would be Killeen, Monk and Plecki (2000) who used a definition of professional development that included a wide range of expenses that fall outside most definitions of professional development, for example audio-visual supplies.

The variation in definitions of professional development embedded in data sources will inherently continue. Unless researchers move beyond the use of traditional accounting codes, however, it will not be possible to disentangle differences in school districts' categorizations of expenses from differences in actual spending for professional development. Once expenditures are clearly identified by researchers, it is important to describe them using a comprehensive cost structure so that expenditures can be described transparently, making it feasible to compare findings across studies.

The Odden, et al. (2001) cost structure helps to provide a substantial level of detail about the nature of spending being studied. Using this cost structure, it is possible to break out the variation caused by different definitions of professional development (for example inclusion of teacher time within the contract or ongoing coaching) from those caused by variations of spending. Use of this framework thus creates estimates that are more empirically and practically useful.

By using the multi-level methodology to collect data and the Odden, et al. (2001) cost structure to analyze the data, it was possible to determine several things about professional development spending at Elm Street.

Elm Street spent a significant amount of money on professional development: $293,816 (or $11,477 per teacher) including teacher time within the regular contract and $229,833 (or $8,978 per teacher) not including teacher time within the regular contract. This amount is much higher than typically recognized. While this finding should not be generalized beyond Elm Street, the use of the cost structure makes it possible to compare the findings to other studies. This leads to the hypothesis that the inclusion of school level spending, which provides 67% of the professional development spending at Elm Street (or 57% not including teacher time within the regular contract) is one of the reasons the estimate is higher than many. Since the school level is the source of such a significant amount of teachers' professional development resources, future studies interested in better understanding professional development resources available to teachers could benefit from a multi-level analysis.

Elm Street utilized $146,525, or 50% of expenditures (67% not counting teacher time within the contract) for training and coaching. Of this, $57,235 was for non-traditional forms of staff development, like on-site, ongoing literacy coaching. This is significant since coaching, facilitating and on-site work with consultants are more likely to contain the elements of effective professional development identified by Garet, et al. (1999) and Odden, et al. (2001). This suggests that analyses of professional development spending that do not include such activities may miss expenditures that are substantial and more likely to be effective than typical one-day workshops.

Elm Street spent very little on teacher time outside of the regular contract. This is partially indicative of the fact that Elm Street restructured time within the teacher contract to regularly provide time for professional development. Interviews also indicated that teachers spend a significant amount of uncompensated time on professional development at Elm Street. Of the spending on teacher time, $15,770 is for substitutes to release teachers for professional development, while only $129—stipends for attending an Eisenhower math and science workshop—compensated teachers for time outside of the school day. While this is very cost efficient in the short term, over the long-term it is unclear if this reliance on uncompensated teacher time will be a sustainable pattern for Elm Street.

8. Conclusion

This study focused on professional development spending at an urban elementary school engaged in focused reform. Budgets and multiple interviews were combined to form a rich data set. The methodology led to a detailed and accurate assessment of professional development spending at both the district and school level. The addition of the school-level expenditure data led to significantly higher estimates of professional development spending, which more accurately reflect the professional development resources available to teachers within a given school than do analyses that only utilize district data. The cost structure analysis yielded useful findings about not just the total professional development costs at Elm Street, but more importantly, the strategic allocation of resources. The cost structure also makes it possible to see how different definitions of professional development shape findings. It is thus an important contribution to the field since widespread use of such a cost structure would facilitate comparing findings across studies.

This project represents an early step of a broader research agenda, which ultimately seeks to identify the level of professional development spending and spending strategies that will enable schools and districts to improve teaching and student learning. Continuing these analyses in a systematic manner and employing the cost methodology defined in Odden, et al. (2001) will yield more data that will add to the extant knowledge on the cost of effective professional development. It would also be interesting to apply this study's methodology to schools that have been successful in generating significant student achievement gains to begin to look at the link between professional development spending and student achievement gains.

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