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Working Paper Series

Assessment and Analysis of School-Level Expenditures

Working Paper No. 96-19

October 1996

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October 1996

Foreword

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Assessment and Analysis of School-Level Expenditures

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October 1996

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TABLE OF CONTENTS

	<u>Page</u>
FOREWORD	iii
ACKNOWLEDGMENTS	xi
EXECUTIVE SUMMARY	xiii
CHAPTER 1: INTRODUCTION	1
CHAPTER 2: RESEARCH ON SCHOOL-LEVEL EXPENDITURES	5
Introduction	5
Review of Studies Using School-Level Finance Data	8
Studies of the Distribution of Expenditures for Different Functions and Objects	8
Studies of Horizontal and Vertical Equity	11
Summary and Conclusions	13
CHAPTER 3: FINANCIAL STRUCTURES USED IN FOUR STATES TO ACCOUNT FOR SCHOOL-LEVEL EXPENDITURES	15
Introduction	15
Unmet Information Needs	15
Strategies for School-Level Data	16
Accounting for Expenditures in a School-Level Collection	18
Requirements of a School-Level Accounting System	18
School-Level Accounting Structures in Four States	21
Comparability of School-Level Functions	25
Selected Aspects of School-Level Finance Collections in Ohio and Texas	31
Ohio's School-Level Finance Collection	32
Texas's School-Level Finance Collection	34
Similarities and Differences between the Systems	36
Concluding Remarks	37
CHAPTER 4: THE USE OF RESOURCES AT THE SCHOOL LEVEL IN OHIO AND TEXAS	39
Introduction	39
Development of the Analyses	42
Selection of States for the Study	42
Establishment of Standard Function and Program Categories	42
Determination of Schools for the Analysis	44
Definition of Expenditure Categories	45
Major Study Findings	47
School-Level Expenditures in Ohio and Texas	48
Summary of Findings	76
Concluding Remarks	78

TABLE OF CONTENTS (Continued)

	<u>Page</u>
CHAPTER 5: IMPLICATIONS OF THE STUDY FOR THE DEVELOPMENT OF A MODEL SCHOOL-LEVEL FINANCE DATA COLLECTION	79
Introduction	79
School-Level Expenditure Analyses Significantly Enhance District-Level Analyses	79
Recommendations for the Design of a School-Level Finance Data Collection	81
REFERENCES	R-1

LIST OF TABLES

<u>Table</u>		<u>Page</u>
Table 1:	School-Level Expenditures in Ohio for Major Functions, by School Level, 1993-94	52
Table 2:	School-Level Expenditures in Texas for Major Functions, by School Level, 1992-93	53
Table 3:	Coefficients of Variation for School-Level Expenditures in Ohio for Major Functions, by School Level, 1993-94	55
Table 4:	Coefficients of Variation for School-Level Expenditures in Texas for Major Functions, by School Level, 1992-93	56
Table 5:	School-Level Expenditures in Ohio for Major Functions, by School Size, 1993-94	58
Table 6:	School-Level Expenditures in Texas for Major Functions, by School Size, 1992-93	59
Table 7:	Coefficients of Variation for School-Level Expenditures in Ohio for Major Functions, by School Size, 1993-94	61
Table 8:	Coefficients of Variation for School-Level Expenditures in Texas for Major Functions, by School Size, 1992-93	62
Table 9:	School-Level Expenditures in Texas for Major Functions, by Location, 1992-93	64
Table 10:	Coefficients of Variation for School-Level Expenditures in Texas for Major Functions, by Location, 1992-93	66
Table 11:	School-Level Expenditures in Ohio for Major Programs, by School Level, 1993-94	69
Table 12:	School-Level Expenditures in Texas for Major Programs, by School Level, 1992-93	69
Table 13:	Coefficients of Variation for School-Level Expenditures in Ohio for Major Programs, by School Level, 1993-94	70
Table 14:	Coefficients of Variation for School-Level Expenditures in Texas for Major Programs, by School Level, 1992-93	70

LIST OF TABLES

<u>Table</u>		<u>Page</u>
Table 15:	School-Level Expenditures in Ohio for Major Programs, by School Size, 1993-94	72
Table 16:	School-Level Expenditures in Texas for Major Programs, by School Size, 1992-93	72
Table 17:	Coefficients of Variation for School-Level Expenditures in Ohio for Major Programs, by School Size, 1993-94	74
Table 18:	Coefficients of Variation for School-Level Expenditures in Texas for Major Programs, by School Size, 1992-93	74
Table 19:	School-Level Expenditures in Texas for Major Programs, by Location, 1992-93	75
Table 20:	Coefficients of Variation for School-Level Expenditures in Texas for Major Programs, by Location, 1992-93	76

LIST OF EXHIBITS

<u>Exhibit</u>		
1a	School-Level Personnel	26
1b	School-Level Personnel	28

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EXECUTIVE SUMMARY

Introduction

Over the past decade, interest has focused on the ways schools spend their money. Concern about the use of school funds — and particularly the amount of money that schools are spending on administration — led Congress in 1994 to include in the *Improving America's Schools Act of 1994* a provision requiring the National Center for Education Statistics (NCES) to “study, design, and pilot a model data system that will yield information about spending for administration at the school and agency levels.”

In late 1994, NCES asked the Pelavin Research Center (PRC) at the American Institutes for Research (AIR) to support the development of a model school-level finance data collection system in the states. The project was designed with three main purposes. The first was to provide NCES and state data providers with an overview of the policy rationales for a school-level finance data collection system. The second was to identify states which have implemented school-level finance data collections and to examine how they have structured their financial record systems to account for expenditures at the school level. The third purpose was to demonstrate the feasibility and utility of a school-level finance collection in addressing important policy issues.

The study involved several major activities. The first was a review of the school reform literature and recent school finance studies of resource allocation across states, school districts, and schools. The second major activity was a review of the accounting structures used to account for school-level expenditures. The third major activity was an analysis of school-level finance data in Ohio and Texas — two states that recently implemented school-level finance collections on a statewide basis. This analysis was designed to explore the feasibility of using school-level financial data to examine key policy issues concerning resource allocation, e.g., how much do schools spend on administration at the school site? By working with school-level finance data in these states, we would identify the shortcomings of school-level data bases and the ways they could be addressed in the design of a model school-level finance collection. These analyses were intended to be “exploratory” in nature, due to the uncertain quality of the school-level finance data in the two states' data bases.

Major Findings of the School-Level Finance Analysis

The analysis of school-level finance data in Ohio and Texas was organized around two main topics: (1) school-level expenditures for major school functions (e.g., instruction, administration) and instructional programs (e.g., regular education, special education); and (2) variation in expenditures for different functions and programs across schools within each state. The analysis drew on a data base of approximately 3,600 schools in Ohio and about 5,900 schools in Texas; expenditure data were for the 1992-93 school year.

The analysis of expenditures for different functions and instructional programs developed some findings that were consistent in the two states and some findings that appeared to be state-specific. The main findings about expenditures for different functions are:

- Expenditures for classroom instruction represented about 85 percent of total school-level expenditures, when expenditures for school operations (transportation, plant maintenance and operation, food services) were excluded from spending. Expenditures for school administration represented about 8 percent of the total, support services for students about 4 percent, and support services for instructional staff about 3 percent of total expenditures.
- The variation in both expenditures per student and the share of total expenditures was smallest for instruction and largest for support services for students and instructional staff. The variation for school administration fell between the two extremes, but was generally closer to that for instruction than for support services for students and instructional staff.
- Total school-level expenditures per student were highest in high schools, lowest in elementary schools, and in between in middle schools. The same pattern applied to all functions in Ohio, but only to support services for students and school administration in Texas. In Texas, expenditures per student for these services were highest in high schools and lowest in middle schools (not elementary schools).
- There was little difference in the share of total expenditures spent on instruction in different types of schools, although the percentage in elementary schools was slightly higher than in middle and high schools. The share of total expenditures for school administration was again quite similar in different types of schools, but slightly lower in elementary schools. The share of total expenditures for support services for students and instructional staff was slightly higher in high schools than in elementary schools.
- Expenditures per student did not show consistent patterns for different functions in schools of different size. Patterns were similar for administration, but not for instruction. Expenditures per student for administration were highest in the smallest schools and about the same in schools of other size in both Ohio and Texas. In contrast, expenditures per student for instruction were highest in the largest schools in Ohio and the smallest schools in Texas; expenditures were about the same in other size groupings in both states.

The main findings about expenditures for different instructional programs are:

- Expenditures for regular classroom instruction comprised about 80 percent of total program expenditures, with a range from about 77 percent in Texas to about 83 percent in Ohio. Expenditures for special education ranged from 9 to 12 percent and expenditures for vocational education were about 5 percent of total expenditures in both states. Expenditures for bilingual education were negligible in Ohio and about 4 percent of total program expenditures in Texas.
- The share of expenditures for regular classroom instruction was higher in middle schools than elementary or high schools. This finding resulted in part from the

concentration of expenditures for special education and bilingual education in elementary schools and vocational education in high schools.

- The variation in the share of expenditures for regular classroom instruction and special education was highest in elementary schools, lowest in middle schools, and in between in high schools in both Ohio and Texas. Other patterns of variation were found for vocational education and bilingual education.
- The share of expenditures for special education was highest in the smallest schools and tended to decrease as school size increased in both states. In addition, the variation in the share of expenditures for special education showed this same pattern: highest in the smallest schools, and decreasing with increased school size.

Implications of the Study for a Model School-Level Finance Data Collection

School-level finance data significantly enhance district-level fiscal analyses and expand the domain of fiscal analysis. Most importantly, school-level finance data permit analysis of expenditures for different functions and programs across schools within a state. With school-level data, it is possible to determine whether expenditures per student and the share of expenditures for different functions and programs differ in schools at different levels, in schools of different size and in different locations, and among schools with different demographic, economic, and social characteristics. It is also possible to assess the variability in expenditures per student for these functions and programs and the share of total expenditures for these functions and programs across schools within a state — and across schools within particular districts. And, if states are using comparable definitions of functions and programs in their school-level accounting systems, it becomes possible to compare the use of resources for different functions and programs in schools of similar size, location, demography, and fiscal characteristics in different states. Finally, in states which collect school-level data on student achievement, it is possible, using school-level expenditure data, to examine the relationship between expenditures and student achievement at the school level, rather than the district level. This represents an important advancement over district-level analysis, since the school is much closer to the delivery of education services than the school district.

Recommendations for the Design of a School-Level Finance Data Collection

The review of Ohio's and Texas's experience with school-level finance data collections suggests several recommendations for the design of a model collection system.

- **A school-level financial accounting system should contain a clear definition of what constitutes a “school,” to which financial activities should be assigned.** Although the concept of a “school” appears obvious, the definition should specify the treatment of building sites that contain a complex of schools, buildings that contain alternative schools or school within schools, and entities such as adult learning centers, dropout prevention centers, and special education centers.
- **A school-level financial accounting system should include a coding structure that assigns expenditures to the central office and to individual schools.** Each school

must be assigned a unique code, so that expenditures at that school can be attributed to it. The experience in Ohio and Texas suggests that the assignment of codes to individual schools can be done at either the district or the state level, although assignment of individual school codes at the state level may reduce the possibility that the same code will be assigned to more than one school in the state. In addition, the school building codes should distinguish different types of schools (e.g., elementary schools, middle/junior high schools, high schools, special education centers, etc.) and possibly the grade structure of each school or education center. This type of coding will permit both the assignment of expenditures to individual schools and the analysis of expenditures in similar schools within a district and throughout the state.

- **A school-level accounting system should, at a minimum, contain a coding structure that accounts for expenditures for the basic functions and objects used in the NCES Handbook, *Financial Accounting for Local and State Systems*.** Ideally, the accounting system should also include a coding structure that permits accounting of expenditures for different instructional programs at the school level. This type of coding structure would permit the comparison not only of total expenditures at the school site, but also of expenditures for different functions and programs in schools throughout the state.
- **To account for expenditures for school personnel at individual schools most accurately, a school-level accounting system should be linked to each district's payroll system or personnel record system.** Linkage to the payroll system would permit accounting of expenditures for both salaries and fringe benefits for each employee and the assignment of expenditures to the proper function at each school site.
- **A school-level accounting system should contain well-specified procedures to account for expenditures for school personnel who work in more than one school or who divide their time performing central office functions and working at the school site.** These procedures are specifically needed to account accurately for expenditures for bus drivers who provide transportation services to children at several schools and maintenance staff who are not assigned to individual schools. Procedures may also be needed to account for expenditures for principals and teachers who work part-time in the district office and part-time in schools, as well as for itinerant teachers who teach part-time in two or more schools.
- **A school-level accounting system should contain clear procedures to account for expenditures for supplies, materials, and equipment at the central office and individual schools.** Accounting for these expenditures at the school site would be most accurate if each school had the authority to make its own purchases; expenditures could then be accounted for directly at the school site and entered into the accounting system with the appropriate school code. Expenditures could also be attributed directly to individual schools if the central office purchased supplies, materials, and equipment for specific schools. However, where supplies, materials, and equipment are bought by the central office in bulk and distributed to the schools, this type of direct accounting might not be possible. The accounting system should

therefore contain a well-specified set of allocation procedures to ensure that all expenditures are attributed appropriately to individual schools.

- **A school-level accounting system should contain a set of procedures for accounting for purchased services and school operations (e.g., fuel used for building maintenance, electricity, etc.) at each school building.** Again, the most accurate method of accounting for these expenditures would be to account for purchased services and operating expenditures directly at each school building. However, if this method cannot be used because the central office makes these purchases for all schools, the accounting system should contain a set of procedures to assign expenditures to individual schools or to allocate expenditures on a formula basis.

The requisite elements of a school-level financial accounting system are very similar to those required to operate a district-level system. Expenditures must be accounted for and coded by function and object to permit analysis of the use of school funds by the district and comparison of expenditures across schools. In addition, procedures must be developed to allocate expenditures that cannot be accounted for directly at a particular site to ensure that all expenditures are assigned to the appropriate building. Because of the strong congruence in the requirements of a district-level and a school-level financial accounting system, it should be possible for most states to extend their district-level finance collections and implement school-level collections in all school districts and schools.

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CHAPTER 1

INTRODUCTION

Over the past decade, interest has focused on the ways schools spend their money. Critics of the public schools have argued that resources are being diverted from the classroom into administrative activities that do not contribute to student performance (Cooper, 1994). Others, however, have argued that only a small percentage of school budgets is actually spent on school and district administration and that little empirical evidence exists to support the claim that schools are plagued by administrative “bloat” (Odden, et al 1995).

Concern about the use of school funds — and particularly the amount of money that schools are spending on administration — led Congress in 1994 to include in the *Improving America’s Schools Act of 1994* a provision requiring the National Center for Education Statistics (NCES) to “study, design, and pilot a model data system that will yield information about spending for administration at the school and agency levels.” When developed, this system will provide policy makers and practitioners with the information both to understand how school funds are spent and, potentially, to help improve the efficiency and effectiveness of our nation's education system.

In late 1994, NCES asked the Pelavin Research Center (PRC) at the American Institutes for Research (AIR) to support the development of a model school-level finance data collection system in the states. The project was designed with three main purposes. The first was to provide NCES and state data providers with an overview of the policy rationales for a school-level finance data collection system. The second was to identify states that have implemented school-level finance data collections and to examine how they have structured their financial record systems to account for expenditures at

the school level. The third purpose was to demonstrate the feasibility and utility of a school-level finance collection in addressing important policy issues.

The study involved several major activities. The first was a review of the school reform literature and recent school finance studies of resource allocation across states, school districts, and schools. The main objectives of the review were to identify the rationales for school-based budgeting and financing and to present the research findings on the use of school resources at the district and school levels. In addition to the literature review, recently developed methodologies to account for revenues and expenditures at the school site were also considered.

The second major activity was a review of the accounting structures used to account for school-level expenditures. We identified three states (Florida, Ohio, and Texas) that collect finance data at the school level for all — or nearly all — schools throughout the state, and one state (Minnesota) which collects school-level finance data in several of the states' administrative regions. We reviewed each of these states' accounting structures to identify similarities and differences in ways of accounting for district and school expenditures, as well as expenditures for major school-level functions (e.g., instruction, school administration, student support services, instructional staff support services). In addition, we compared each state's school-level accounting system with NCES's standard chart of accounts, as developed in *Financial Accounting for State and Local School Systems 1990*, to assess their comparability with the NCES standard. Finally, we reviewed the way two states — Ohio and Texas — have implemented their school-level finance data collections.

The third major activity analyzed school-level finance data in two states — Ohio and Texas. The activity was designed to explore the feasibility of using school-level financial data to examine key policy issues concerning resource allocation, e.g., how much do schools spend on administration at the school site? By working with school-level finance data in these states, we would identify the

shortcomings of school-level data bases and the ways they could be addressed in the design of a model school-level finance collection. The analyses proposed for the study were intended to be “exploratory” in nature, due to the uncertain quality of the school-level finance data in the two states' data bases.

The balance of this report contains four chapters. Chapter 2 summarizes the major findings of selected school finance studies that examine the distribution of school expenditures for different school functions and the equity of funding distributions. Chapter 3 contains the comparison of accounting structures in Florida, Minnesota, Ohio, and Texas and the overview of Ohio's and Texas's approaches to implementing their school-level finance data collections. Chapter 4 presents our analysis of school-level expenditures in these two states. The main focus of the analysis is on resource allocation by function and program, with stratification by school type and school size. Chapter 5 translates the findings of the analysis into implications for the design and development of a model school-level finance data collection system.

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CHAPTER 2

RESEARCH ON SCHOOL-LEVEL EXPENDITURES

Introduction

The growing dissatisfaction with the performance of America's educational system has resulted in a reform movement that has shifted the focus of attention from the district level to the school site. Berne and Stiefel (1994) cite three reasons why the dominance of the school district as the unit in school finance analysis is being challenged. First, across school districts, states, and even countries, there is a growing belief that the most critical activities are closest to the child — at the school or program level. Second, there is increasing interest in measuring and focusing on processes, outputs, and outcomes, rather than simply financial inputs. Third, the rapid advancement of technology now makes it possible to collect and analyze information at a level of detail that more closely mirrors the education process at the school level.

The analysis of school-level finance data has enormous potential to answer important questions about the distribution of expenditures and resources in school districts and schools. More specifically, school-level expenditure data permit analysis of the following types of questions:

- What level and percentage of school funds are spent at the central office? at the school site?
- How much do schools spend per student on direct instruction, instructional support, and other functions? What proportion of school expenditures is spent on each of these functions?
- How much do schools spend per student on compensation for teachers and other school personnel, instructional supplies and materials, other operating expenditures? What proportion of school expenditures is spent on each of these objects of expenditure?
- Are there systematic differences in expenditures per student and the share of expenditures for different functions and objects in different types of schools

(elementary, middle, high schools), schools of different size, and schools located in different geographical areas?

- Are there other factors that affect the use of school funds for different functions and objects?

In addition to permitting analysis of differences in the use of school funds, school-level data can provide valuable information about the equity, or fairness, of the distribution of educational resources. Traditional equity analyses have focused on the school district as the unit of analysis, largely because school districts in most states have been empowered by state governments to raise revenues for education and provide school programs. However, these analyses assume that all students in a district receive the same level of resources. School-level finance data offer the potential to examine that assumption by conducting comparisons of schools within districts. They also offer the potential to conduct statewide analyses of expenditures and resources, using schools instead of districts as the unit of analysis. The following types of issues can be addressed using school-level finance data:

- What is the variation in total expenditures per student and expenditures per student for different functions and objects among schools across a state?
- What is the variation in the share of expenditures for different functions and objects among schools across a state?
- What is the relationship between expenditures per student for different functions and objects and school size, school poverty, and other school characteristics?
- Are there systematic differences in the variation in the share of expenditures for different functions and objects in different types of schools, in schools of different size, and in schools with other characteristics?

Still a third set of questions that can be addressed using school-level finance data deals with the relationship between school expenditures (and resources), on the one hand, and student outcomes, on the other. By linking school-level expenditures with school-level achievement data, the

relationship between expenditures and outcomes can be explored more effectively than earlier studies that had to relate district-level expenditures to different outcome measures.

Although school-level finance data offer the potential to address a broad range of policy issues, several problems with school-level finance data must be addressed before rigorous analysis can be conducted (Berne and Stiefel 1994). One is that school-level data do not offer a complete picture of school expenditures. There are several functions or objects (e.g., transportation, utilities, supplies) that may be purchased more cost-efficiently at the district level through “bulk buying.” To accurately portray school-level spending, expenditures for these services must be allocated to the school level. Second, expenditures for some personnel (e.g., music and art teachers, curriculum specialists) who provide services at more than one school may be accounted for at the district level, rather than the school site. To fully account for school spending, these expenditures must again be allocated from the district level to individual schools. Still another problem area is with fringe benefits, particularly retirement benefits, which may be administered at the state level. Again, these expenditures must be attributed to individual schools to provide a comprehensive picture of school expenditures. However, since these expenditures may not appear in school districts' financial accounts, attribution of these expenditures to districts and schools may make expenditures appear higher than in published district and state reports.

Another problem in developing analyses of school-level finance data involves accounting for non-district resources that are used at the school level. Monk and Roellke (1994) described three sources of non-district revenue that need to be incorporated into school-level analyses: (1) monies from business, foundations, and other organized groups; (2) user fees and off-budget fund raising; and (3) donated parent and community resources. Little is known about the size of these resources and how they are distributed among schools either within or across school districts.

Review of Studies Using School-Level Finance Data

Very few studies have been conducted to date using school-level finance data, since, until recently, only Florida collected and reported school-level expenditures on a statewide basis. The small number of studies have attempted to address the following types of questions:

- What proportion of school expenditures support central office operations and what proportion of funds are used to support school programs?
- How much do schools spend per student and as a percentage of total spending for different functions and objects? Do expenditure patterns differ in schools with different characteristics?
- What is the variation in expenditures per student across schools (horizontal equity)?
- What is the relationship between expenditures per student and school poverty (vertical equity)?

The following discussion summarizes the methodologies used in these studies and their major findings. Although the methodological rigor of some of these studies have been debated by researchers, the discussion that follows does not include a critique of the studies, but instead highlights their major findings about the allocation of school expenditures.

Studies of the Distribution of Expenditures for Different Functions and Objects

One of the earliest studies to examine the distribution of expenditures between the central office and the schools was a study of the New York City Public Schools, conducted by Cooper and Sarrel (1991). The researchers used a “cascade” model to study expenditures for different functions in the New York City high schools. Subsequently, a revised model of school expenditures called the School Micro-Financial Allocations Study (SMAS) Model was developed under a grant from the Lilly Endowment to account for expenditures at the central office and each school site (Lilly Endowment 1993). The SMAS included five functional categories, with each function performed at both the

central office and the school site level. The five functions in the model were: administration; operations and facilities; teacher support; pupil support; and instruction.

The SMAS Model was first used to examine the use of school funds for these functions at the central office and the school site in a sample of eight school districts, with enrollments ranging from just under 6,500 to around 75,000, and total expenditures ranging from about \$20 million to about \$340 million. The study developed several interesting findings about the use of school resources.

Contrary to popular belief that large amounts of money go into central office expenditures, the study found that central office expenditures ranged from a low of 6 percent to a high of 20 percent — or conversely that between 80 and 94 percent of total funds were distributed to the schools. The ranges in the shares of expenditures for both central administration and school administration were also lower than expected — between 2 percent and 10 percent of total spending for central administration and between 4.5 and 6 percent for school administration. On the other hand, the share of expenditures for classroom instruction at the school site averaged about 60 percent in the eight districts, with a range from about 55 percent to 63 percent across the districts.

After further refinement, the SMAS Model was used again to analyze expenditures in a sample of 38 school districts (Cooper et al 1994). An analysis of five of the 38 systems showed similar findings to the previous study: central office expenditures ranged from 7 to 16 percent, and expenditures reaching the school ranged from a low of 84 percent to a high of 93 percent. Expenditures for central administration ranged from 2.5 to 3.5 percent and the share of expenditures for school-level instruction ranged from 52 to 60 percent.

Cooper et al (1994) also developed “efficiency coefficients” to determine how much it would cost to deliver services to students. One coefficient, called the Student Instructional Ratio (SIR)

divides classroom instructional expenditures per student by expenditures devoted to administration and operations at the central office and each school site. A second coefficient, the Student Services Ratio (SSR), divides expenditures for school-level instruction and support services by expenditures for central office administration, school administration, facilities, staff support and development. These coefficients were applied to schools in the five districts to determine the relative efficiency of their school operations.

An alternative model for analyzing the distribution of school expenditures between the central office and schools and across different school functions was developed by Coopers & Lybrand (1994). The School District Budget Model (SDBM) organizes expenditures into six major functions: Instruction - Schools; Instructional Support - Schools; Operations - Schools; Operations - Central & District; Pass-Throughs; and Capital Formation. Using the model for the first time to analyze expenditures in the New York City Public Schools during the 1993-94 school year, Coopers and Lybrand found that 81.4 percent of budgeted funds was delivered to the school site.

The first statewide analysis of the distribution of school-level expenditures for different functions and objects was conducted recently by Nakib (1995) under the auspices of the Center for Research in Education Finance at the University of Southern California. Nakib analyzed expenditures in Florida's 67 school districts during the 1991-92 school year, focusing first on district-level expenditures and then on expenditures at the school site. Statewide, Nakib found that about 93 percent of districts' total budgets was spent on school site operations; only 7 percent was kept at the district office level. Excluding transportation and food services, about 65 percent of districts' expenditures was used to fund direct school instruction, while administration represented about 9 percent of the total.

Nakib also examined school-level expenditures by function and object. The functions used in the analysis included: instruction, instructional support, administration, maintenance, transportation, food, and capital outlay. Objects of expenditure included: salaries, fringe benefits, services, materials and supplies, instructional capital, and other. Statewide, he found that about 58 percent of school site expenditures (excluding food and transportation) were used to fund direct school instruction and an additional 8 percent provided support services to students; administration comprised about 7 percent of the total.

Schools in Florida were stratified into five quintiles based on several criteria to determine whether the share of expenditures for different functions and objects was systematically related to different school characteristics. These criteria were: per pupil expenditures; size; property wealth per pupil of the district; percent of pupils served free/reduced price lunches; and percent of minority pupils in the school. While the share of expenditures for most functions did not differ significantly across groups of schools, the share of expenditures for instruction tended to increase as per pupil expenditures increased. The lowest quintile in per pupil expenditures spent about 57 percent of expenditures on instruction, while the highest quintile spent just over 59 percent. In addition to spending more per pupil for instruction, high-expenditure schools spent a slightly higher share of expenditures on instruction.

Studies of Horizontal and Vertical Equity

A few studies using school-level data have recently begun to focus on issues of equity in the distribution of money and resources among schools (horizontal equity) and the relationship between funds, resources and different measures of student need (vertical equity). The studies by Cooper cited above (Cooper et al 1994, Lilly Endowment 1993) not only examined the overall share of

expenditures for different functions district-wide, but also examined differences in expenditures across schools within districts. Both studies found that more money was spent per pupil in high schools than in elementary schools; they also found substantial variation in expenditures per pupil in each group of schools. Several factors were offered to explain the difference between high- and low-spending schools including differences in the percentage of teachers with more education and experience, the age and condition of school buildings, and the percentage of students receiving special education services — whether in mainstream classes or in separate programs.

Berne and Stiefel (1994) used subdistrict and school-level data to examine both horizontal and vertical equity in the New York City Public Schools during the 1991-92 school year. The first level of analysis focused on the 32 community school districts that operate elementary and middle/junior high schools, the second on the 800 plus elementary and middle/junior high schools administered by the community school districts. Both involved the use of regression analysis to assess the relationship between budgets and expenditures in the general education program and reimbursable programs, and the number of budgeted positions in the general education program, on the one hand, and poverty (measured by the percent of pupils who qualified for free lunch in the subdistrict or school), on the other. The basic regression statistics were then used to estimate the differences in the resources per pupil between a high-poverty and a low-poverty subdistrict or school.

The analysis of the 32 community school districts found the following relationships between resources and subdistrict poverty. Budgets per pupil were distributed such that high-poverty subdistricts received higher per pupil amounts, while expenditures per pupil showed the opposite relationship. However, neither relationship was large nor especially strong. Teachers' salaries showed a larger and negative relationship with poverty, while pupils per position showed a

moderately negative relationship to poverty. The combination of relatively more positions, but lower salaries, in poor subdistricts resulted in the weak relationship between total budgets per pupil and poverty.

Separate analyses of the relationship between resources and poverty in elementary and middle/junior high schools, on the other hand, found different relationships. At the elementary school level, all variables except positions were distributed in higher per pupil amounts to low poverty subdistricts. In contrast, at the middle school level, all variables except average teacher's salary were distributed in higher per pupil amounts to high poverty schools. Overall, middle/junior high school budgets and expenditures tended to favor high-poverty schools, whereas elementary school budgets and expenditures did not.

Replication of the analysis using the school, rather than the subdistrict, as the unit of observation found similar results: elementary school budgets and expenditures per pupil were higher in low-poverty schools, while middle/junior high school budgets and expenditures were lower in low-poverty schools. However, the size and strength of the relationships were lower in the school-level analysis than in the subdistrict analysis.

Summary and Conclusions

This chapter presented several of the major rationales that support the collection and analysis of school-level expenditures and resources. Through the use of school-level data, school and public officials, parents, and researchers can obtain a much better picture of the allocation of resources for different functions and school programs, the efficiency of school operations, and how equitably funds and resources are distributed among schools. The chapter also identified a number of methodological problems that need to be addressed in analyzing school-level expenditure data and the findings of the

few studies that have been conducted to date using these data. It should be recognized that this work has been done in a context in which the school district is still the primary local entity with fiscal authority in education. However, should school-based management become a more common feature of American education, school-level fiscal analysis will take on even more importance in the future.

CHAPTER 3

FINANCIAL STRUCTURES USED IN FOUR STATES TO ACCOUNT FOR SCHOOL-LEVEL EXPENDITURES

Introduction

The National Center for Education Statistics currently collects finance data for elementary and secondary education from two main sources: (1) the *National Public Education Financial Survey (NPEFS)*; and (2) the *Annual Survey of Local Government Finances — School Systems*, more commonly known as the F-33. The *NPEFS* is an annual collection of state-level finance data that contains breakdowns of revenues by source of funding (local, intermediate, state, and federal) and breakdowns of expenditures by functions and subfunctions (e.g., instruction, support services for students and instructional staff, administration, operations and maintenance, student transportation, food services) and objects (e.g., salaries, employee benefits, purchased services, supplies, property, other). The F-33 is also an annual collection of school districts' finance data, with breakdowns of revenues by funding source and breakdowns of expenditures by function and object. Function breakdowns in the F-33 correspond very closely with those in the *NPEFS*, while object breakdowns are limited to salaries, employee benefits, and other current operating expenditures.¹

Unmet Information Needs

Although the state- and district-level finance collections provide policy makers, state and district administrators, teachers, and the general public with important information about funding sources and the use of school funds for different functions and objects, they do not permit the analysis of expenditures below the district level. Consequently, it is not possible to determine the proportion

¹The F-33 collects finance data on a sample basis annually and for the universe of school districts every five years ending in “2” and “7” (e.g., 1987, 1992).

of expenditures made at the district and school levels, to assess the extent of variation in expenditures per student among schools within a school district or across a state, nor to compare expenditures in similar types of schools in different states around the nation.

The *Improving America's Schools Act of 1994* contained a provision requiring NCES to “study, design, and pilot a model data system that will yield information about spending for administration at the school and agency levels.” Such a system — if fully implemented — would provide extensive information about district- and school-level expenditures in all 50 states and the District of Columbia. When linked to other data collections such as the *Schools and Staffing Survey (SASS)* and the *National Education Longitudinal Study of 1988 (NELS:88)*, a system providing school-level finance data could also be used to explore more fully the relationship between school expenditures and resources, on the one hand, and student and system outcomes, on the other.

Strategies for School-Level Data

Two main strategies potentially can be used by states to collect complete and comparable school-level finance data on a systematic basis. The first is essentially a school-based collection, in which each school is the provider of finance data for the collection. Such a system might be feasible if schools were fiscal agents that raised their own revenues, received revenues directly from state and federal governments, and made direct expenditures for staff and other school resources. However, despite the calls of reformers for a school-based funding system (Odden, 1994), the financing of schools remains a district-based function in all states; financial accounting systems operate at the district — not the school — level. A school-based collection strategy would therefore require not only a decentralization of the accounting function to the school site but a total restructuring of the system of school governance. It would also require states to collect finance data from about 85,000 public schools, instead of 15,000 school districts.

The second strategy is a district-based strategy that relies on finance data in school districts' financial records to account for expenditures at the district level and at each school in the district. The system is essentially an extension of current district accounting practices to the school level. Such a system would routinely produce data on expenditures for different functions and objects, but could also be extended to produce expenditures for different school programs (e.g., regular education, special education, vocational education, etc.) — and, at the secondary level, to different school subjects (e.g., English, mathematics, history, etc.). The move from district-level accounting to a school-level accounting would not require the development of a whole new data collection, but rather the expansion and/or modification of existing accounting systems to permit the attribution of a school district's expenditures to individual schools.

As a district-based system of accounting for school-level expenditures appears to provide a more feasible strategy for collecting school-level data than a school-based system, this chapter explores its potential as a model for NCEs to use in responding to its Congressional mandate. The first section of the chapter discusses selected requirements of such a system. The second section reviews the requirements of a school-level financial accounting system and briefly compares the major components of the accounting structures in the four states that currently implement either a universe or sample collection of school-level finance data (Florida, Minnesota, Ohio, and Texas). The third section examines selected aspects of the school-level expenditure collections in two states — Ohio and Texas. It commences with a discussion of the methods these states use to account for different types of expenditures at the school level (e.g., salaries and employee benefits for different types of personnel, supplies, equipment, and other operating expenditures) and concludes with a discussion of the implications of these two states' experience for the design of a school-level collection.

Accounting for Expenditures in a School-Level Collection

A major consideration in adapting district-level financial accounting systems to the school level is how much detail will be included in school-level records. A minimalist approach might only include a measure of total current expenditures. This approach would permit a comparison of expenditures per student across schools, but would not permit an analysis of expenditures for different functions such as school administration, objects such as employee benefits, or school programs such as special education. A more comprehensive approach would include expenditures for different functions, objects, and school programs. Such a system would give policy makers and practitioners the information needed to better understand how money is used in different schools and to improve the efficiency and effectiveness of schools and school programs.

Requirements of a School-Level Accounting System

A school-level accounting system that provides more detailed expenditure data requires several important elements. First, the system requires clear definition of what constitutes a “school” to which financial activities should be assigned. Although the concept of a “school” appears obvious, there are definitional issues that require clarification. For example, some physical sites may contain a complex of schools, e.g., a middle school and a high school. The definition of a school needs to specify for accounting purposes whether the physical site or each entity on the site constitutes a “school.” In other cases, school buildings may contain special centers, such as alternative schools or schools within schools. Again, the accounting system needs to specify clearly which entity is defined as the school for accounting purposes. Finally, attention needs to be given to the treatment of such entities as adult learning centers, dropout prevention centers, and special education centers in a school-based accounting system.

Second, the system requires a set of procedures for assigning expenditures to the central office and to individual schools. In some cases, expenditures can be identified with a specific school and accounted for directly at the school site. In other cases, expenditures that support a school's instructional program or operations cannot be identified with a specific school; these expenditures must then be attributed to the school through some method of allocation. In general, expenditures for school personnel who are assigned to specific schools fit the former category; expenditures for other personnel and for school supplies, textbooks, and other school services often fall into the second category.

A third major element of a school-level finance system is a method for coding expenditures to the central office and individual schools for entry into the accounting system. The basic chart of accounts must include building codes for central office operations and separate building codes for each school — or operating unit — in the district.² The school building codes should, in addition, distinguish different types of schools (e.g., elementary schools, middle/junior high schools, high schools, special education centers, adult education centers, etc.) and possibly the grade structure of each school or education center. This type of coding structure will permit both the assignment of expenditures to individual schools and the analysis of expenditures in similar schools within a school district and throughout the state and nation.

Fourth, the school-level accounting system should, at a minimum, include a system for coding expenditures into basic functions and objects based on the categories in the NCES Handbook, *Financial Accounting for Local and State School Systems*. This coding structure is particularly important because it will provide the basis for comparable accounting of expenditures at the school,

²An optional component of the coding system could be a set of codes for each grade level, which would permit accounting of direct expenditures for teachers' salaries and fringe benefits by grade level.

district, state, and national levels.³ In addition, the coding system should be expanded to permit accounting for expenditures for different instructional programs at the school level. Such a system would permit the analysis of the cost of different types of administrative and support systems, as well as the cost of different instructional programs.

Another element of a school-level accounting system is a set of procedures for allocating expenditures that cannot be assigned directly to individual schools. Allocation procedures may be needed to assign the following types of expenditures: salaries and fringe benefits for teachers and professional staff who work part-time in the central office and part-time in the schools; salaries and fringe benefits of teachers and professional staff who divide their time among different schools; salaries and fringe benefits for support staff such as bus drivers and maintenance personnel who perform services for several schools; textbooks, instructional supplies and equipment (e.g., computers, overhead projectors, etc.) which are purchased by the central office and then distributed to the schools; supplies and equipment to support school operations that are purchased centrally and then allocated to schools; and contracted services that support the instructional program or school operations in multiple schools.

Finally, a school-level accounting system should include a set of procedures for allocating expenditures for school operations (e.g., administration and plant maintenance) to the school and to major programs. These allocation procedures permit the development of total program expenditures, in addition to direct program expenditures. Standard accounting practices permit the use of diverse methods of allocating these indirect expenditures to schools and programs. However, to enhance the

³ A coding system could be expanded to include not only expenditures for salaries in each function, but expenditures for teachers' salaries and other types of school staff.

comparability of expenditure comparisons across schools within districts and states, as well as across states, a uniform set of allocation procedures is needed.

School-Level Accounting Structures in Four States

Through a review of state finance collections, we identified four states (Florida, Minnesota, Ohio, and Texas) with systems to collect and report school-level expenditure data. Florida, Ohio, and Texas now collect finance data at the school level for all — or nearly all — schools throughout the state; Minnesota collects school-level finance data in several of the state's administrative regions. Florida has collected school-level expenditure data since 1973 and Texas initiated its school-level collection during the 1984-85 school year. Ohio began implementing a school-level collection on a pilot basis in 1991-92, moved to a statewide voluntary system in 1993-94, and implemented the system statewide on a mandatory basis for the first time in 1994-95.

The chart of accounts in each of the four states contains all the required elements to account for expenditures at the school level. In addition to fund codes that are used to account for revenues by funding source and the corresponding expenditures made with funds from these sources, the charts of accounts contain accounting codes for all of the major components of a school-level accounting system, including: functions, objects; and programs. However, the state accounting systems differ both in the detail contained within these codes and in the coding structure for recording expenditures at the building (or school) site. The following discussion compares the main components and details of the four states' charts of accounts.

Accounting for Expenditures at School Buildings and Other Operational Units

Accounting for expenditures at the central office and individual schools requires a coding system that assigns expenditures to the central office and separate codes for each school building or

operational unit. The charts of accounts in the four states examined in this study approach the assignment of school building codes in different ways. Texas and Florida take a more centralized approach, specifically assigning “organization” or “facilities” codes to individual schools at the state level. In Texas, code numbers assigned to campus units in the Texas School Directory must be used for coding campus units.

Ohio and Minnesota use a more decentralized approach to assigning codes to schools and other operational units. In Ohio, school districts — rather than the state — assign operational unit codes to each building site; OPU numbers are unique to each school building. Organizational units are sites of a physical plant that includes specific schools, units of transportation and administration, warehouses, etc. Similarly, in Minnesota, the Uniform Financial Accounting and Reporting System Codes do not specify organizational codes for school buildings, but the chart of accounts does contain codes for expenditures at different levels: 100 for elementary services; 200 for elementary/secondary services; and 300 for secondary services.

Accounting for Expenditures for Different Functions

A school-level finance system should be designed, at a minimum, to account for expenditures for the major school functions. In the NCES Handbook, these include five major functions and a host of subfunctions, mostly in the domain of support services. The functions are:

- Instruction
- Support Services
- Operation of Non-Instructional Services
- Facilities Acquisition and Construction Services
- Other Uses

The major sub-functions under Support Services include:

- Support Services for Students
- Support Services for Instructional Staff
- General Administration

- School Administration
- Business Support Services
- Operation and Maintenance of Plant Services
- Student Transportation Services
- Support Services – Central
- Other Support Services

The major sub-functions under Non-Instructional Services include:

- Food Services
- Other Enterprise Activities
- Community Services

The charts of accounts in the four states examined in this study all contain coding systems to permit accounting for expenditures for different school functions. Ohio's chart of accounts parallels most strongly the function breakout in the NCES Handbook both in its overall structure and in the codes used to account for functional expenditures. The charts of accounts in the three other states all contain a function category called "Instruction" or "Instruction Services," generally modeled on the NCES Handbook, but account for other functions using a different function structure. Florida's accounting structure includes three main functions and a host of sub-functions that capture the breakdowns in the Handbook. Texas's and Minnesota's charts of accounts both have seven broad function categories that do not parallel the NCES Handbook; however, the sub-functions within their function categories can generally be matched up with the functions in the Handbook. Thus, while the overall structure for accounting for functional expenditures differs across the four states, district- and school- expenditures can generally be crosswalked into the NCES function format.

Accounting for Different Objects of Expenditure

Objects of expenditure are another important potential part of a school-level accounting system. In the NCES Handbook, objects of expenditure are generally broken down into nine major areas:

- Personal Services – Salaries
- Personal Services – Employee Benefits

- Purchased Professional and Technical Services
- Purchased Property Services
- Other Purchased Services
- Supplies
- Property
- Other Objects
- Other Uses of Funds

In contrast with function breakdowns, which differ across the four states, the chart of accounts used by states examined in this study are quite similar. Florida, Minnesota, and Ohio all have separate object categories for salaries and employee benefits; Texas has a single object code for both, but separates expenditures for salaries and employee benefits as sub-objects within the object code. Similarly, all four states have object codes for purchased services, supplies and materials, capital outlay, and other expenditures, although the sub-objects within these categories differ slightly from state to state. However, for the most part, objects of expenditure in each of these state accounting systems can be crosswalked to the standard in the NCES Handbook.

Accounting for Expenditures for Different Programs

NCES does not currently collect data on expenditures for different school programs at either the state or district level — at least in part because many states do not collect data on program expenditures from their local school districts. However, the collection of these expenditures would be an important addition to a school-level collection. The NCES Handbook currently classifies program expenditures into nine different categories. The main instructional categories at the K-12 level include: Regular Programs - Elementary/Secondary; Special Programs (which include all types of education for children with disabilities, as well as programs for the culturally deprived, the gifted and talented, and bilingual education), Vocational Education, Other Elementary/Secondary Programs (e.g., school-sponsored co-curricular activities and athletics), and Adult/Continuing Education Programs. Our review of the four states in this study found similar program classifications. The main difference across the states was in the placement of programs for the educationally disadvantaged, the

gifted and talented, and bilingual education. In Florida and Texas, these programs were at the same level as regular instruction, special education, and vocational education; in Ohio and Minnesota, they were sub-programs under Special Instruction or Exceptional Instruction. However, since these programs had separate codes within the larger program codes, expenditures for these programs could, in principle, be accounted as distinct program areas. The result is that the four state systems all have the potential to provide school-level data on program expenditures.

Comparability of School-Level Functions

States' systems for reporting expenditures should ideally be sufficiently comparable to permit analyses of expenditures for major functions in similar schools across state lines. In designing this study, we therefore examined the comparability of the financial accounting structures in the four states to determine whether schools in them could be compared fairly on their expenditures for major school functions.

The comparability analysis involved two main steps. First, function categories were selected for analysis. These included the four main professional functions carried out at the school level: Instruction; Pupil Support; Instructional Staff Support; and School Administration. NCES's definitions of these functions were used as the standard for defining these functions. Second, each of the four states' accounting systems was reviewed to determine how expenditures for staff salaries and employee benefits were coded into different functions. State systems were compared both with each other and with the NCES standard. Exhibit 1a breaks down each of the four functions and indicates where personnel are included in these functions in the NCES standard and in the four states; Exhibit 1b classifies personnel in each state into their appropriate function categories.

EXHIBIT 1a

School-Level Personnel

Instruction Personnel				
NCES	Florida	Ohio	Minnesota	Texas
Classroom Teachers Teacher Aides Coaches Club Instructors	Classroom Teachers Teacher Aides Coaches Club Instructors	Classroom Teachers	Classroom Teachers Teacher Aides Coaches Club Instructors	Classroom Teachers Teacher Aides – Speech Therapists – Reading Specialists – Heads of Department
Pupil Support Personnel				
*Support Services-Students Guidance Counselors Speech Therapists Reading Specialists Career Placement Staff Diagnosticians Attendance Staff Health Services Psychologists Registrar	*Pupil Personnel Guidance Counselors Health Staff/ Nurses Psychologists Speech Therapists Reading Specialists Career Placement Staff Diagnosticians Attendance Staff	*Supporting Services Guidance Counselors Career Placement Staff Diagnosticians Health Staff/Nurses Psychologists Speech Therapists Reading Specialists Attendance Staff	*Pupil Support Services Guidance Counselors Health Staff/Nurses Psychologists Career Placement Staff *Food Services Staff Attendance Staff *Security Staff	*Student (Pupil) Services Guidance Counselors Health Staff/Nurses Psychologists Career Placement Staff Diagnosticians *Food Services Staff *Coaches *Club Instructors
Instructional Staff Support Personnel				
*Support Services — Instructional Staff Librarians A-V Technicians	Librarians A-V Technicians	*Support Services — Instructional Staff *Teacher Aides Librarians A-V Technicians	*Instructional Support Services *Vice/Assistant Principals *Heads of Department Librarians *Diagnosticians A-V Technicians	*Instructional Related Services (Not School Administration) Librarians

**Expenditures can be shifted to appropriate function.*

– Expenditures cannot be shifted easily to appropriate function.

EXHIBIT 1a (Continued)

School-Level Personnel

School Administration				
NCES	Florida	Ohio	Minnesota	Texas
*Support Services — School Administration	*School Administration	*School Administration Services	*District and School Administration	*School Administration
Principal Vice/Assistant Principals Heads of Department Secretaries Clerical Assistants	Principal Vice/Assistant Principals Secretaries Clerical Assistants	Principal Vice/Assistant Principals Secretaries Clerical Assistants	Principal Secretaries Clerical Assistants	Principal Vice/Assistant Principals Secretaries Clerical Assistants – Attendance Staff

**Expenditures can be shifted to appropriate function.
 – Expenditures cannot be shifted easily to appropriate function.*

EXHIBIT 1b

School-Level Personnel

Personnel by Function					
School Staff	NCES	Florida	Ohio	Minnesota	Texas
Principal	(Support Services - School Administration) Office of the Principal Services	School Administration	(School Administration Services) Office of the Principal Services	(District and School Administration) School Administration	(Instructional Related Services) School Administration
Vice/Assistant Principals	(Support Services - School Administration) Office of the Principal Services	School Administration	(School Administration Services) Office of the Principal Services	(Instructional Support Services) General Instructional Support	(Instructional Related Services) School Administration
Classroom Teachers	Instruction	Instruction	Instruction	Instruction	(Instructional Services) Instruction
Teacher Aides	Instruction	Instruction	(Support Services - Instructional Staff) Instructional Staff - Classroom Support	Instruction	(Instructional Services) Instruction
Heads of Department	(Support Services - School Administration) Other Support Services - School Administration			(Instructional Support Services) General Instructional Support	(Instructional Services) Instructional Administration
Guidance Counselors	(Support Services - Students) Counseling	Pupil Personnel	(Supporting Services - Pupil) Guidance Services	(Pupil Support Services) Counseling and Guidance	(Student [Pupil] Services) Guidance and Counseling Services
Secretaries	(Support Services - School Administration) Office of the Principal Services	School Administration	(School Administration Services) Office of the Principal Services	(District and School Administration) School Administration	(Instructional Related Services) School Administration

EXHIBIT 1b (Continued)

School-Level Personnel

Personnel by Function					
School Staff	NCES	Florida	Ohio	Minnesota	Texas
Clerical Assistants	(Support Services - School Administration) Office of the Principal Services	School Administration	(School Administration Services) Office of the Principal Services	(District and School Administration) School Administration	(Instructional Related Services) School Administration
Librarians	(Support Services - Instructional Staff) School Library Services	Instructional Media Services	(Support Services - Instructional Staff) School Library Services	(Instructional Support Services) Educational Media	(Instructional Related Services) Instructional Resources and Media Services
Health Staff/Nurses	(Support Services - Students) Health Services	Pupil Personnel	(Supporting Services - Pupil) Health Services	(Pupil Support Services) Health Services	(Student [Pupil] Services) Health Services
Psychologists	(Support Services - Students) Psychological Services	Pupil Personnel	(Support Services - Pupil) Psychological Services	(Pupil Support Services) Psychological Services	Student [Pupil] Services) Guidance and Counseling Services
Speech Therapists	(Support Services - Students) Speech Pathology	Pupil Personnel	Supporting Services - Pupils) Speech Pathology Services	(Exceptional Instruction) Speech\Language Impaired	(Instructional Services) Instruction
Reading Specialists	(Support Services - Students) Other Student Support	Pupil Personnel	(Support Services - Pupils)	(Exceptional Instruction) Special Learning Disability	(Instructional Services) Instruction
Career Placement Staff	(Support Services - Students) Placement Services	Pupil Personnel	(Support Services - Pupils) Placement Services	(Pupil Support Services) Counseling and Guidance	(Student [Pupil] Services) Guidance and Counseling Services
Diagnosticians	(Support Services - Students) Appraisal	Pupil Personnel	(Support Services - Pupils) Appraisal Services	(Instructional Support Services) Curriculum Consultant and Development	(Student [Pupil] Services) Guidance and Counseling Services

EXHIBIT 1b (Continued)

School-Level Personnel

Personnel by Function					
School Staff	NCES	Florida	Ohio	Minnesota	Texas
Food Services Staff	(Operation of Non-Instructional Services) Food Services Operations	Food Service	(Operation of Non-Instructional Services) Food Purchasing, Preparation, and Dispensing Services	(Pupil Support Services) Food Service	(Student [Pupil] Services) Food Services
Custodial Staff	(Operation and Maintenance of Plant Services) Operating Building Services	Operation of Plant	(Operation and Maintenance of Plant Services) Care and Upkeep of Building Services	(Site, Building, and Equipment) Operations and Maintenance	(Plant Services) Plant Maintenance and Operations
Security Staff	(Operation and Maintenance of Plant Services) Security Services	Operation of Plant	(Operation and Maintenance of plant Services) Security Services	(Pupil Support) Other Pupil Support Services	(Plant Services) Plant Maintenance and Operations
Attendance Staff	(Support Services - Students) Attendance Services	Pupil Personnel	(Support Services - Pupils) Attendance Services	(Pupil Support Services) Attendance and Social Work Services	(Instructional Related Services) School Administration
Registrar	(Support Services - Students) Record Maintenance Services			None	
Coaches (Athletic)	Instruction	Instruction	(Extracurricular Activities) Academic Oriented Activities	(Regular Instruction) Athletics - Boys/Girls	(Student [Pupil] Services) Cocurricular/ Extracurricular Activities
Club Instructors (Academic)	Instruction	Instruction	(Extracurricular Activities) Sport-Oriented Activities	(Regular Instruction) Co-curricular (Non-Athletic)	(Student [Pupil] Services) Cocurricular/ Extracurricular Activities

As is evident from the exhibits, three states (Minnesota, Ohio, and Florida) have accounting systems with sufficient detail in their function codes to allow regrouping consistent with the categories in the NCES Handbook. Most personnel expenditures in Texas can also be recoded to conform to the NCES function structure, but there are a few cases where such expenditures cannot be recoded. Texas includes speech therapists and reading specialists under Instruction, rather than Pupil Support Services; these expenditures cannot be recoded to the appropriate NCES function. In addition, department chairpersons are included in Instruction, rather than School Administration, and cannot be recoded. Finally, Texas groups attendance staff with other School Administration personnel, making it impossible to move attendance staff to Pupil Support.

Although the categorization of school-level expenditures for personnel in Texas is not fully compatible with the NCES Handbook, the overall differences in category definitions are very small. Compared with the NCES standards, expenditures for Instruction in Texas would be slightly overstated, expenditures for Pupil Support would be slightly underestimated, and expenditures for School Administration would be slightly overestimated.

Selected Aspects of School-Level Finance Collections in Ohio and Texas

States must undertake several activities to implement a school-level finance collection that provides useful and comparable information about school-level expenditures. First, they must develop an accounting structure (more specifically, a chart of accounts) to account for expenditures at the district level and at individual school buildings. As indicated above, most states can basically use their basic chart of accounts for this purpose, but need to expand the chart of accounts to include school building codes, so that expenditures can be attributed to specific school buildings. Second, states must collect detailed data on expenditures and attribute these expenditures to specific schools.

The data collection should be able to differentiate expenditures for salaries and benefits for professional and support personnel, employed at the central office and specific schools, and for the full range of non-personnel expenditures, including supplies and equipment, contracted services, utilities, and other operating expenditures. Finally, all of the detailed expenditure data must be aggregated into categories (e.g., functions, programs, subjects) that can be used to analyze expenditures at the school, district, and state levels.

The implementation of a school-level finance collection requires that states make a number of important decisions. These include decisions about the categories that will be used to aggregate and analyze school-level data, the procedures that will be used to allocate detailed expenditure data into categories for analysis, as well as the level of the system at which the aggregation will take place. A state could establish uniform procedures for all school districts to follow or could give districts more discretion to make these decisions based on their specific needs and conditions. The following discussion provides an overview of the approaches used to implement a school-level finance collection in Ohio and Texas.

Ohio's School-Level Finance Collection

Ohio began implementation of its school-level finance collection on a pilot basis in 1991-92 and conducted its first mandatory statewide collection in 1994-95. In the Ohio system, each school district assigns operational unit (OPU) codes to each building site. These OPU codes are used to account for expenditures at that school site; OPU numbers are unique to each school building. The Ohio Department of Education (ODE), at the request of school districts, assigns an Institutional Record Number (IRN) code to each school building. The state also assigns an IRN to the central office to account for expenditures that are for overall district operations. Staff responsible for reporting these expenditures to the state are encouraged to assign as much of their expenditures as

possible to specific buildings to ensure the most accurate reporting of expenditures at each school building.

The assignment of expenditures to the school building involves the assignment of personnel expenditures (salaries and fringe benefits) and other expenditure objects. School districts generally do the former through payroll records that have appropriate building codes attached to them; expenditures for supplies, materials, textbooks, equipment, and contracted services that support student instruction, programs of student support and instructional staff support, school administration, and operations support are accounted for directly by school districts, if possible, or are allocated to individual schools by formula, if they cannot be accounted for directly by school building.

A small number of school districts in Ohio do not account for all expenditures for student transportation and food services by school building, but instead maintain records of unallocated district expenditures for these functions. These unallocated expenditures are reported to the ODE which then prorates expenditures for each of these functions to individual schools. Transportation expenditures are allocated based on the proration percentage provided by each school district to the ODE for each school. This percentage is calculated in each district by dividing the number of students bused per building by the total number of students bused in the district. Food service expenditures are also allocated based on the proration percentage for each school provided by each school district to the ODE. This percentage is calculated in each district by dividing the number of meals served for the year in the building by the total number of meals served during the year in the district. In the case of both transportation and food services, alternative allocation methods may be substituted by the district if these methods are inappropriate for the district and if substantiating documentation for the alternative method is provided by the district to the ODE.

The Ohio Department of Education aggregates school-level expenditure data into five reporting categories based on the Expenditure Flow Model (EFM) developed by Bruce Cooper of Fordham University. The EFM organizes expenditures into five functions, each of which has a central office component and a school component. These functions are: instruction; pupil support; staff support; administration; and operations support. The first four functions correspond quite closely with their counterparts in the NCES Handbook, while operations support includes several sub-functions in the Handbook — plant maintenance and operation, student transportation, and food services.⁴ In addition, a number of district expenditures including capital outlay, idle school buildings, tax anticipation notes, tuition, and selected other items are excluded from school building and central office expenditures.

The Expenditure Flow Model is utilized by the state to produce several reports to all school districts. In addition to more detailed reports that itemize the expenditures that are included in and excluded from each school's record, the system produces a Building Expenditure Report, an Expenditure Per Pupil Report, and a Percentage of School Cost Report. These reports provide data on total school expenditures by function, expenditures per pupil by function, and the percent of total expenditures for each function, respectively. Sample reports are provided at the end of this chapter.

Texas's School-Level Finance Collection

Texas initiated its collection of campus-level finance data in the 1984-85 fiscal year and has been collecting data for all schools through the Public Education Information Management System (PEIMS) since 1985-86. In contrast with Ohio, each school building or facility in the state is assigned

⁴The endnote to this chapter contains the definitions of the functions in Ohio's Expenditure Flow Model.

a campus code in the Texas School Directory; these codes must then be used to assign expenditures to each campus.

School district staff attempt to assign as much expenditure as possible directly to specific campuses, but also allocate expenditures to schools when direct accounting is not possible. Direct accounting is generally used to assign most personnel expenditures to the campus, since payroll records generally have school codes attached to them. The payroll records are used to assign both salaries and employee benefits, since both types of compensation are included in each staff member's payroll record. However, where staff divide their time among several sites, school district staff use a number of different procedures to assign expenditures to individual schools. If information is available, expenditures are divided among campuses based on the number of hours worked in each campus. Salaries and fringe benefits for a curriculum coordinator who works in more than one campus would be split proportionately among the campuses; similarly, for a school principal who splits his/her time between the central office and one or more campuses. If information is not available, expenditures are assigned either to the central office/generic code or to one campus. The code 700 represents central office or generic expenditures.

Personnel expenditures are directly assigned to campuses — or to the central office/generic code — for most of the major school functions (administration, instruction, pupil support services, instructional support services, and building maintenance and operations). However, expenditures for bus drivers are retained as central expenditures, rather than assigned to specific schools. In contrast with Ohio, the state education agency in Texas does not take total expenditures for transportation and allocate expenditures back to individual schools.

Non-personnel expenditures such as supplies and materials, equipment, utilities, and contracted services to school buildings are supposed to be assigned directly to school buildings,

whenever possible, to permit the most accurate and complete accounting of schools' expenditures. However, when direct accounting is not possible, school districts are given wide latitude by the Texas Education Agency (TEA) in their choice of allocation methods. According to the TEA staff, the use of allocation procedures is much more common in large school districts than small districts; small districts can generally account for most of their non-personnel expenditures directly by school building because of the small number of transactions.

Although Texas uses the PEIMS to collect school-level expenditure data statewide, Texas has not yet developed a production system for reporting school expenditures to the education community and the public. However, according to TEA staff, a prototype system has been designed by Deloitte and Touche for reporting this type of information. In addition, data for individual schools are aggregated into reporting categories such as functions and programs and reported to the education community and the general public through the Academic Excellence Indicator System (AEIS).

Similarities and Differences between the Systems

Ohio's and Texas's approaches to a school-level collection share several common elements. Both systems contain coding structures to account for expenditures at the central office and school site and both use charts of accounts that contain substantial detail on education functions, programs, and objects of expenditure. Both systems attempt to account for as large a proportion of both personnel and non-personnel expenditures directly at the school building level, and both permit the use of different types of allocation methods to assign other expenditures to the central office and to individual schools.

The two states differ, however, in their approach to reporting school-level expenditures to the public. Ohio uses the Expenditure Flow Model to produce several reports to all school districts, including reports on total school expenditures by function, expenditures per pupil by function, and the

percent of total expenditures for each function. Texas, in contrast, has not yet developed a production system for reporting this type of information, but does report data on functions and programs to the general public through the Academic Excellence Indicator System. The experience of both these states should, however, provide guidance to NCES as it initiates its work in designing and assisting other states implement school-based finance collections.

Concluding Remarks

The recent experience of Ohio and Texas demonstrates the feasibility of enhancing a district-based finance collection to permit the collection of data on expenditures at the school level. However, this experience also raises questions about the costs and burdens of detailed finance collections at the school level and the use of the data that have been collected. In our limited discussions with state staff in the two states we learned that both the design and implementation of these of the school-level finance collections required a significant investment of time and resources. An expanded chart of accounts had to be developed to code expenditures at the school site and procedures had to be specified for treating different types of expenditures. Once the overall system was designed, school district staff required training to implement the system and report school-level expenditures in the correct format to the state. The collection system then had to be pilot tested in a small number of districts before it was implemented statewide; in Ohio, the phase-in period extended over four years. Finally, once the system is in place, verification of the accuracy of data reported by school districts can require substantial time from state agency staff.

The cost of data collection, however, must be weighed against the information that such a collection produces currently, as well as the potential uses of the data. Ohio is currently using data from the school-level collection to provide a variety of reports to help state and school district policy makers make better decisions about school funding and the use of school resources. Texas has

incorporated some school-level finance information in its Academic Excellence Indicator System.

But these reports represent just the tip of the iceberg in terms of potential uses of the data. Some of the additional uses of school-level expenditure data to address issues of interest to policy makers and educators are explored more fully in the next chapter.

ENDNOTE

Definition of Functions in Ohio's Expenditure Flow Model

Instruction – The core technology of education is teaching and learning which generally occurs in the School and in the classroom. This instruction often includes teachers, teacher aides, or paraprofessionals, as well as materials, computers, books and other disposables that are used with students in the classroom setting. At the Central Office, some staff may also be preparing materials for children to use.

Pupil Support – Students need support outside the classroom and beyond their academic instruction. They need guidance counseling, help in the media center or library, college advising, field trips, and psychological testing. Pupil support may be operated out of the district office, though these functions must ultimately serve the child in the School.

Staff Support – The adults in the Schools and in the Central Office need support, staff development, training, re-training, additional college courses, and advice. Teacher support may be handled in the Central Office, where planning a staff development conference goes on, or it may occur in the School, where direct support for teachers, and other staff receive their help.

Administration – This function, whether in the superintendent's or the principal's office, sets the goals, direction, and other key decisions, motivates staff, hires, evaluates, fires, deals with crises, and concerns itself with the surrounding environment.

Facilities and Operations – Schools and Central Offices require direct maintenance. These facilities must have cleaning, lighting, heating, water and renovation, buses and other heavy equipment, stadiums, ball fields, and other hardware. Infra-structure, and materials must be purchased, maintained, stored and transported. This function combines both capital goods (building, buses, heating equipment, etc.) and the resources necessary to operate clean, repair, and improve them. Hence, building support includes both facilities and operation at both School and Central levels.

CHAPTER 4

THE USE OF RESOURCES AT THE SCHOOL LEVEL IN OHIO AND TEXAS

Introduction

This chapter presents our analysis of school-level expenditures in Ohio and Texas, two states that adapted their district-level finance collections to permit the reporting of expenditures at the school site for all schools statewide. The main purpose of the analysis was to test the feasibility of using school-level expenditure data developed from district-level record systems to analyze resource allocation issues of interest to national, state, and local policy makers.

A broad range of issues was considered in developing the analysis plan for the study. These included: (1) the proportion of total expenditures made at the district office and at the school site; (2) variation in expenditures across schools within school districts, i.e., intra-district equity; (3) the relationship between school expenditures and a broad range of school characteristics, e.g., minority population, percent of children in poverty; (4) the relationship between school expenditures and student outcomes. However, because this was an exploratory study to determine whether school-level expenditure data could be used at all for analysis purposes, the analysis was organized around the issue of variation in expenditures for different functions and programs across schools in each of the two states.

Although researchers are particularly interested in a comparison of district and school costs, we chose not to make these comparisons for two reasons, one substantive, the other procedural. The substantive reason is that it is not really necessary to initiate a school-level collection to make this type of comparison; a reasonable comparison can be made using district-level data alone, by comparing expenditures for district administration with expenditures for other school functions.

Some expenditures are, of course, made at the district level for functions other than administration, e.g., transportation, curriculum development, staff development. And it would be interesting to sort which expenditures for these functions are made at the central office and which are made at the school site. However, in structuring the analysis plan, it was determined that the more interesting questions concerned inter-school differences in total expenditures and expenditures for different functions. The procedural reason for not comparing district to school-level expenditures was that we did not receive a data file from Texas containing district-level expenditures. We were thus unable to incorporate these data into the analysis for that state.

The following questions concerning the use of school resources for different functions, e.g., instruction, administration, were developed around the issue of variation in expenditures for different functions across schools.

- How much do schools spend per student, on average, on instruction, pupil support services, instructional staff support services, school administration, and other operating functions, e.g., student transportation, building maintenance and operations, food services?
- What proportion of school-level expenditures is spent, on average, on instruction and other school functions?
- What is the variation in total expenditures per student and expenditures per student for different functions among schools across the state?
- What is the variation in the share of total expenditures for different functions among schools across the state?
- Does inter-school variation in expenditures per student and the share of total expenditures differ across education functions? Is there greater variability for some functions than others?
- Are there systematic differences in expenditures per student and the share of expenditures allocated to different functions in different types of schools (elementary, middle, and high schools), in schools of different size, and in schools located in different geographical areas (urban, suburban, rural)?

- Are there systematic differences in variation in the share of expenditures for different functions in different types of schools, in schools of different size, in schools in different geographical locations?

A similar set of questions was developed concerning the use of school resources for school programs such as regular education, special education, etc. These questions are:

- How much do schools spend per student, on average, on different instructional programs, e.g., regular classroom instruction, special education, bilingual education, vocational education, etc.?
- What proportion of instructional expenditures is spent, on average, on regular classroom instruction, special education, and other school programs?
- What is the variation in expenditures per student for different programs among schools across the state?
- What is the variation in the share of total expenditures for different programs among schools across the state?
- Does inter-school variation in expenditures per student and the share of total expenditures differ across education programs? Is there greater variability for some programs than others?
- Are there systematic differences in expenditures per student and the share of expenditures allocated to different programs in different types of schools, in schools of different size, and in schools located in different geographical areas?
- Are there systematic differences in variation in the share of expenditures for different programs in different types of schools, in schools of different size, in schools in different geographical locations?

In selecting the questions for analysis, it is important to state again that the analysis was intended to be exploratory, given the limited research conducted to date using school-level expenditure data and the potential problems developing school-level data bases. The findings from the analysis presented later in the chapter should therefore not be considered the definitive statement about school-level resource allocation patterns, but rather a set of preliminary findings that should be explored more fully in subsequent studies as new school-level expenditure data become available.

Development of the Analyses

The development of the school-level expenditure analyses required four main actions: (1) selecting states for the study; (2) establishing standard categories for reporting expenditures for different functions and programs; (3) determining what constitutes a “school” and which schools will be included in the analysis; and (4) formatting school-level expenditure data in each state to correspond with the standard functions and programs selected for analysis.

Selection of States for the Study

Prior to beginning work on the study, four states were identified as having some form of school-level finance data: Florida, Minnesota, Ohio, and Texas. However, after further exploration of potential data bases, it was determined that school-level data were not available statewide in Minnesota, but only in some of the state's administrative regions. We therefore chose to exclude Minnesota from the analysis. Florida was also excluded from the analysis because Florida's school-level expenditure data were being analyzed by the Center on Education Finance and Productivity in a related resource allocation study. As a result, Ohio and Texas were selected for inclusion in this analysis.⁴

Establishment of Standard Function and Program Categories

The analysis of expenditures for different functions and programs required the establishment of standard categories containing both clear definitions of the categories and explicit statement of the component expenditures that are included in and excluded from the categories. Although most states' financial accounting structures (for district-level expenditures) now contain fairly standard *function* categories — and fairly similar definitions of these functions, there are still some differences among

⁴Since commencement of work on this analysis, we have determined that at least two other states, Michigan and South Carolina, have begun the process of developing school-level finance data bases. As these data bases come on line, analyses conducted in this study can be replicated and new analyses can be designed and conducted.

state systems, as noted in Chapter 3 of this report. We therefore chose to use the NCES Handbook, *Financial Accounting for Local and State School Systems 1990*, as the basis for establishing standard function categories. Although the Handbook only contains definitions of district- and state-level expenditures, it is nonetheless an appropriate starting point for developing standard definitions of school-level expenditures and for developing a reporting system that tracks expenditures using comparable definitions from schools to districts to states and to the national level.

Function Categories

Four functions from the NCES Handbook were selected as basic school-level functions: instruction, support services for students, support services for instructional staff, and school administration. “Instruction” includes activities dealing directly with the interaction between teachers and students. “Support services for students” includes activities designed to assess and improve the well-being of students and to supplement the teaching process. Such activities include: attendance and social work services, guidance services, health services, psychological services, speech pathology, and audiology services. “Support services for instructional staff” includes activities associated with assisting the instructional staff with the content and process of providing learning experiences for students. These activities include staff training, curriculum development, and educational media services. Finally, “school administration” includes activities concerned with the overall administrative responsibility of a school.

In addition to these four basic functions, three other functions that support school operations were included as supplementary functions in the analysis. These include operation and maintenance of plant services, student transportation services, and food services. These services were not included as basic expenditures because expenditures for these functions were only partially accounted for at the school site in both states. While expenditures for the basic functions were relatively comparable in Ohio and Texas, expenditures for these functions differed substantially.

Program Categories

In contrast with “function” categories, which have been a component of state financial accounting systems for many years, “program” categories are still not a core component of most states' accounting systems — and corresponding district-level finance collections. And, there is much less comparability in the definition of program categories in the states which maintain program-level accounting for expenditures. For this study we used the NCES Handbook as a reference for defining education programs, but used each state's definitions of education programs as the basis for analyzing its expenditures. Consequently, the analysis of expenditures for different education programs needs to be regarded as even more exploratory than the analysis of expenditures for functions, since program categories such as “regular classroom instruction” or “special education” may not be defined comparably in the two states.

Determination of Schools for the Analysis

States use a variety of governance structures to organize educational services. In some states, most local educational agencies are K-12 school districts that operate elementary, middle, and high schools, and provide a broad range of educational programs, including special education and vocational education. In other states, separate regional education districts may provide special education or vocational education to students who reside in some or all of the local school districts that fall within their geographical boundaries. Within these districts, children are often taught in a variety of learning environments. These include traditional institutions, e.g., elementary, middle, and high schools, but they may also include alternative schools, dropout prevention centers, learning centers, or institutions for juvenile delinquents.

The inclusion of all school districts and all “schools” in a school-level expenditure file can produce some anomalous results in an analysis of school-level expenditures. Consequently, a decision was made to exclude certain school districts and “schools” from the analysis files if they did

not meet certain criteria. In Ohio the first step we took was to include in the school-level file only schools located in one of the state's 607 regular K-12 districts. This action resulted in the elimination of "schools" in special education districts from the school-level expenditure file. Second, a wide variety of operational units that were labeled as school buildings, e.g., athletic facilities and teams, yearbook and other curricular projects, but which did not have a corresponding record in the enrollment file were eliminated from the file. Or, put differently, only elementary, middle, and secondary schools with an enrollment greater than zero were included in the file for analysis. The exclusion of operational units without corresponding enrollments permitted the development of a figure for expenditures per student for all schools in the data file.

The development of a school-level file was much simpler in Texas because the vast majority of operational units in the school building file were elementary schools, middle schools, high schools, and combined K-12 schools. The file did, however, contain a sizeable number of units that enrolled very few students, many of which were special units such as juvenile institutions, dropout centers, and alternative schools. To reduce the potential effect of "outliers" on the analysis, we therefore excluded all buildings with fewer than 50 students from the school-level data base.

Definition of Expenditure Categories

The analysis of school-level expenditures required two important "manipulations" to the data in each state's expenditure files to create the relevant function and program variables. First, expenditures in district-level record files had to be classified as "school-level expenditures" and "district expenditures." As stated previously, this analysis defined basic school-level expenditures to include classroom instruction, support services for students, support services for instructional staff, and school administration; supplementary school-level functions included the following operating functions (student transportation, operation and maintenance of plant services, and food services).

District-level expenditures were defined to include general administration, business and central support services, and the administration of all of the above school-level services.

Second, school-level expenditures had to be assigned to each school included in the analysis file. This was a straightforward procedure for expenditures for instruction, support services for students and instructional staff, and school administration, since most expenditures for these functions had school identification numbers attached to them. However, expenditures for school operating functions presented more of a problem, since expenditures for these functions were accounted for at both the school and district levels. In Ohio, where our data file included *both* school-level and district-level expenditures, we allocated district-level expenditures for plant maintenance and operation, student transportation, and food service to each school based on the school's percentage of total district enrollment and added these expenditures to expenditures for the other four functions to establish each school's total expenditures.⁵ Since a substantial portion of expenditures for these functions were accounted for as "district" expenditures, the addition of operating expenditures to basic expenditures substantially increased overall school-level expenditures per pupil. In Texas, where our data file was limited to direct school-level expenditures only, we were unable to allocate district-level expenditures for plant maintenance and operation, student transportation, and food services to the school level in the analysis. The data file did include some expenditures for these functions, since a small proportion of total expenditures was accounted for at the school site. However, expenditures for these functions were much lower than in Ohio, since a large proportion of

⁵It should be noted that the method used in this study differs from that used by Ohio, as described on page 32 of the report. We considered using Ohio's method of allocating district-level expenditures for school operations to individual schools, i.e., allocating student transportation expenditures based on the number of students in each school who received transportation services or the number of miles transported, and allocating expenditures for food services based on the number of meals served in each school. We chose, however, to allocate expenditures for these functions based on each school's proportion of total district enrollment, because data on the number of students transported and meals served at each school were not available for this study.

these expenditures was accounted for at the district level and could not be included in the school-level analysis.

Major Study Findings

This section of the report presents the results of our analysis of school-level expenditures in Ohio and Texas. Before presenting the results of the analyses, however, it is important to present an overview of the schools that were included in this analysis in the two states. In Ohio, our school-level data base for the 1993-94 school year contained 3,600 schools, of which 63 percent were elementary schools, 17 percent were middle schools or junior high schools, and just under 20 percent were high schools. Over half the schools (52 percent) enrolled between 300 and 600 students, and just under one-fourth (23 percent) enrolled under 300 students; about 14 percent of the schools enrolled between 600 and 800 students, and 11 percent enrolled over 800 students. However, elementary schools comprised the vast majority of the smallest schools (82 percent) and high schools comprised almost two-thirds (64 percent) of the largest schools.

The school-level data base for Texas for the 1992-93 school year was much larger than Ohio's, with 5,910 schools. In addition to the three school types found in Ohio, Texas also contained a small number of schools that enrolled students in grades K-12. Overall, elementary schools comprised nearly three-fifths of all schools (58 percent), while middle and high schools each comprised about 19 percent of all schools; combined K-12 schools represented the remaining four percent of schools. In contrast with Ohio, large schools represented a larger proportion of schools in Texas: just under 19 percent of the schools enrolled between 600 and 800 students and another 21 percent enrolled over 800 students. As in Ohio, elementary schools comprised a large proportion (37 percent) of schools with under 300 students and a very large proportion (77 percent) of schools of moderate size (enrollments between 300 and 600). However, the largest schools were divided almost equally among elementary, middle, and high schools. Finally, the largest proportions of schools in

Texas were located in urban and suburban areas (28 and 27 percent respectively), while the smallest proportion of schools was located in independent towns (10 percent of all schools).

School-Level Expenditures in Ohio and Texas

The analysis of school-level expenditures contains two parts. The first part presents findings on expenditures for different functions, the second for different instructional programs.

Expenditures for School-Level Functions

The analysis of expenditures for school-level functions is presented below. Each section is organized as follows. First, we present analyses for all schools in the state. We then present analyses for different types of schools, schools of different size, and schools in different geographical locations. Within each section, the analysis first focuses on expenditures per student for different functions, then discusses the share of expenditures for different functions, and concludes with discussions of variations in expenditures per student and variation in the share of expenditures for different functions. The first questions follow.

- **How much do schools spend per student, on average, on instruction and other school-level functions?**
- **What proportion of school-level expenditures is spent, on average, on instruction and other school functions?**

School-level expenditures for student instruction averaged about \$2,060 per student in Ohio during the 1993-94 school year. Expenditures per student for other school-level functions were: \$104 for support services for students; \$66 for support services for instructional staff; and \$206 for school administration. Total expenditures (excluding district-level expenditures for school operations) were \$2,436 per student. District-level expenditures for school operations (transportation, building maintenance and operations, and food services) added another \$955 per student to school-level expenditures, bringing total school-level expenditures to \$3,391 per student.

Expenditures per student in Texas in 1992-93 for the four school-level functions were: \$2,494 for instruction; \$116 for support services for students; \$81 for support services for instructional staff; and \$228 for school administration. Total expenditures per student, excluding both school-level and district-level expenditures for school operations, were \$2,919 per student.

The share of school-level expenditures spent on all functions was quite similar in Ohio and Texas. Excluding expenditures for school operations, expenditures for instruction represented about 85 percent of expenditures in both Ohio and Texas. School administration comprised about 8.5 percent in Ohio and just under 8 percent in Texas, while support services for students and instructional staff represented about 4 percent and 3 percent of total school expenditures, respectively, in the two states.

When expenditures for school operations were included in school-level expenditures, the share of total expenditures for each of these functions was, of course, lower. In Ohio, where expenditures for school operations represented about 28 percent of total school-level expenditures, the share of expenditures spent on instruction went from 84.6 percent to 60.7 percent. The share for school administration went from 8.5 to 6.1 percent, support services for students from 4.3 to 2.6 percent, and support services for instructional staff from 2.7 to 1.9 percent.

- **What is the variation in total expenditures per student and expenditures per student for different functions among schools across the state?**
- **What is the variation in the share of total expenditures for different functions among schools across the state?**

The variation in both expenditures per student and the share of expenditures for different school-level functions — as measured using the coefficient of variation⁶ — differed significantly

⁶The coefficient of variation examines the distribution of educational resources (by school) with respect to the state mean across all schools, describing how resources are distributed around the mean. It is calculated as the standard deviation divided by the mean.

from function to function. In both Ohio and Texas, total expenditures per student and expenditures per student for instruction showed the smallest amount of variation, while expenditures per student for support services for students and instructional staff showed the largest variation; expenditures per student for school administration fell between the two extremes in both states. Similar patterns of variation were found when the shares of total expenditures for these functions was examined: the smallest amount of variation was found for instruction, the largest was found for support services for students and instructional staff, and school administration fell between the other functions.

A number of factors may account for the differences in variation among the four functions. One is the fact that all schools provide some type of instruction (since this is their basic mission), and most schools have at least a part-time principal who carries out administrative functions for the school. It would therefore be expected that most — if not all — schools would record some expenditure for these functions. However, this might not be the situation with the other two functions. Some schools — very small schools in particular — may not provide certain support services for students and instructional staff because of diseconomies of scale. Or these services might be provided through cooperative arrangements with other schools. The result would be that expenditures for these functions in these schools might well be “zero”; a large number of “zeroes” would contribute to a high level of variation on expenditures for these functions.

Expenditures Per Student for Different Functions in Different Types of Schools.

- **Are there systematic differences in expenditures per student and the share of expenditures for different functions in different types of schools?**
- **Are there systematic differences in variation in expenditures per student and the share of expenditures for different functions in different types of schools?**

Expenditures per student for different types of schools were generally similar in Ohio and Texas (tables 1 and 2). Total expenditures per student were highest for high schools and lowest for elementary schools, with middle schools falling in between. In Texas, however, expenditures for

combined K-12 schools were, on average, higher than expenditures for all other types of schools. It should be noted, however, that these schools comprised less than 4 percent of all schools and that the vast majority of these schools were very small. Expenditures per student in these schools would therefore be quite high because of diseconomies of scale.

Expenditures per student for school-level functions in the two states generally reflected the pattern observed for total expenditures. In Ohio, expenditures per student for instruction, support services for students and instructional staff, and school administration were highest in high schools, lowest in elementary schools, and between the two in middle schools. In Texas, this pattern applied to support services for students and school administration, but not to instruction and support services for instructional staff. It should again be noted, however, that expenditures per student for all functions in Texas were highest in combined K-12 schools.

TABLE 1

**School-Level Expenditures in Ohio for Major Functions, by
School Level, 1993-94**

Level	Class- room Instruc- tion	Student Support Services	Instruc- tional Staff Support Services	School Administra- tion	Subtotal School- Level Expendi- tures	School Opera- tions	Total School- Level Expendi- tures
Expenditures Per Student							
Elementary	\$1,931	\$60	\$55	\$184	\$2,230	\$905	\$3,135
Middle	2,166	126	71	219	2,582	967	3,549
High	2,214	163	83	236	2,695	1,032	3,727
All Schools	2,060	104	66	206	2,436	955	3,391
Percent of Total Expenditures (Excluding School Operations)							
Elementary	86.6%	2.7%	2.5%	8.3%	100.0%	—	—
Middle	83.9	4.9	2.7	8.5	100.0	—	—
High	82.2	6.0	3.1	8.8	100.0	—	—
All Schools	84.6	4.3	2.7	8.5	100.0	—	—
Percent of Total Expenditures (Including School Operations)							
Elementary	61.6%	1.9%	1.8%	5.9%	—	28.9%	100.0%
Middle	61.0	3.6	2.0	6.2	—	27.2	100.0
High	59.4	4.4	2.2	6.3	—	27.7	100.0
All Schools	60.7	3.1	1.9	6.1	—	28.2	100.0

TABLE 2**School-Level Expenditures in Texas for Major Functions, by School Level, 1992-93**

Level	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures
Expenditures Per Student					
Elementary	\$2,360	\$88	\$78	\$200	\$2,726
Middle	2,336	129	78	243	2,786
High	2,820	160	86	269	3,335
Combined K-12	3,977	200	127	319	4,622
All Schools	2,494	116	81	228	2,919
Percent of Total Expenditures (Excluding School Operations)					
Elementary	86.6%	3.2 %	2.9%	7.3%	100.0%
Middle	83.8	4.6	2.8	8.7	100.0
High	84.6	4.8	2.6	8.1	100.0
Combined K-12	86.0	4.3	2.7	6.9	100.0
All Schools	85.4	4.0	2.8	7.8	100.0

Share of Expenditures for Different Functions in Different Types of Schools. The share of expenditures for the major school-level functions also showed some similarities and differences in the two states (tables 1 and 2). The share of expenditures for instruction did not differ greatly among elementary, middle, and high schools, although it was slightly higher in elementary schools than in the other two types of schools. Similarly, the share of expenditures for school administration was fairly similar in different types of schools but smaller in elementary schools than in either middle or high schools. In contrast, the share of expenditures for support services for students showed a consistent increase from elementary to middle to high schools in both states, reinforcing the point that high schools not only spend more per student on these support services, but also devote a larger share of total expenditures to them.

Variation in Expenditures Per Student for Different Functions in Different Types of Schools. Although both states showed similar patterns of expenditures per student for all schools, they differed in the variability in expenditures per student in different types of schools. In Ohio, the variation in expenditures per student was largest for all functions in elementary schools and smallest in middle schools for all functions except support services for students (table 3). In Texas, in contrast, the variability in expenditures per student for all functions was largest in high schools (but only slightly for support services for students) and smallest in middle schools for all functions except instruction (table 4). This difference in finding can, however, be explained by the fact that, unlike Ohio, high schools in Texas were not consistently large schools. In fact, there was a bimodal distribution in terms of school size; about two-fifths of high schools (41 percent) were quite small, while just over one-third of high schools (36 percent) enrolled over 800 students.

TABLE 3

**Coefficients of Variation for School-Level Expenditures in Ohio
for Major Functions, by School Level, 1993-94**

Level	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures	School Operations	Total School-Level Expenditures
Coefficients of Variation for Expenditures Per Student							
Elementary	66.7%	195.0%	181.0%	87.8%	69.4%	35.5%	55.8%
Middle	47.2	75.2	83.9	57.1	47.9	32.0	39.2
High	49.9	73.5	119.0	59.4	51.1	34.0	42.2
All Schools	58.0	119.0	141.0	73.1	59.9	34.9	48.8
Coefficients of Variation for Percent of Total Expenditures (Excluding School Operations)							
Elementary	5.2%	104.3%	95.1%	36.9%	—	—	—
Middle	8.5	48.4	74.3	66.4	—	—	—
High	5.8	41.2	59.8	33.4	—	—	—
All Schools	6.6	74.6	79.8	44.2	—	—	—
Coefficients of Variation for Percent of Total Expenditures (Including School Operations)							
Elementary	36.2%	117.1%	109.1%	50.7%	—	66.7%	—
Middle	35.9	61.2	69.7	48.3	—	69.6	—
High	35.7	54.4	67.2	47.0	—	68.5	—
All Schools	36.1	86.0	87.7	49.2	—	67.8	—

TABLE 4

**Coefficients of Variation for School-Level Expenditures in Texas
for Major Functions, by School Level, 1992-93**

Level	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures
Coefficients of Variation for Expenditures Per Student					
Elementary	19.0%	66.7%	61.5%	32.9%	19.2%
Middle	21.5	57.9	49.2	32.5	21.0
High	23.6	67.9	78.8	41.9	24.6
Combined K-12	76.4	306.0	176.0	89.3	79.3
All Schools	27.4	94.7	72.3	41.4	28.2
Coefficients of Variation for Percent of Total Expenditures (Excluding School Operations)					
Elementary	3.7%	56.5%	51.2%	24.2%	—
Middle	4.8	43.4	43.4	36.8	—
High	4.2	46.7	54.3	24.6	—
Combined K-12	6.0	115.0	72.7	42.1	—
All Schools	4.3	54.9	51.0	29.5	—

Variation in the Share of Expenditures for Different Functions in Different Types of

Schools. While the two states showed similar patterns on the overall share of expenditures for different functions, they differed slightly in the variation in shares of expenditures in different types of schools. Excluding school operations from expenditures, the variation in the share of expenditures was highest in elementary schools for support services for students and highest in middle schools for instruction and school administration in both Texas and Ohio; however, the variation in the share of expenditures for support services for instructional staff was highest in elementary schools in Ohio and high schools in Texas.

- **Are there systematic differences in expenditures per student and the share of expenditures for different functions in schools of different size?**
- **Are there systematic differences in variation in expenditures per student and the share of expenditures for different functions in schools of different size?**

Expenditures Per Student for Different Functions in Schools of Different Size.

Expenditures per student in schools of different size were similar for some functions in Ohio and Texas and different for others (tables 5 and 6). One area of similarity was in expenditures per student for school administration. In both states, administration expenditures per student were larger in the smallest schools and quite similar in schools of other size. Areas of major difference were in total expenditures per student, expenditures per student for instruction, and expenditures per student for support services for instructional staff. In Ohio, total expenditures per student and expenditures per student for instruction were highest in the largest schools and about the same in schools of other size — possibly because a very high proportion of large schools were high schools. In Texas, in contrast, total expenditures per student and expenditures per student for instruction were highest in the smallest schools and relatively similar in schools of other size.

TABLE 5

School-Level Expenditures in Ohio for Major Functions, by School Size, 1993-94

School Size	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures	School Operations	Total School-Level Expenditures
Expenditures Per Student							
<300	\$1,975	\$66	\$59	\$243	\$2,343	\$949	\$3,292
300-599	2,031	82	65	198	2,376	933	3,309
600-799	2,003	104	66	190	2,362	933	3,295
800+	2,191	158	72	218	2,638	1,013	3,651
All Schools	2,060	104	66	206	2,436	955	3,391
Percent of Total Expenditures (Excluding School Operations)							
<300	84.3%	2.8%	2.5%	10.4%	100.0%	—	—
300-599	85.5	3.5	2.7	8.3	100.0	—	—
600-799	84.8	4.4	2.8	8.0	100.0	—	—
800+	83.1	6.0	2.7	8.3	100.0	—	—
All Schools	84.6	4.3	2.7	8.5	100.0	—	—
Percent of Total Expenditures (Including School Operations)							
<300	60.0%	2.0%	1.8%	7.4%	—	28.8%	100.0%
300-599	61.4	2.5	2.0	6.0	—	28.2	100.0
600-799	60.8	3.2	2.0	5.8	—	28.3	100.0
800+	60.0	4.3	2.0	6.0	—	27.7	100.0
All Schools	60.7	3.1	1.9	6.1	—	28.2	100.0

TABLE 6**School-Level Expenditures in Texas for Major Functions, by School Size, 1992-93**

School Size	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures
Expenditures Per Student					
<300	\$3,264	\$133	\$112	\$339	\$3,848
300-599	2,509	99	89	223	2,920
600-799	2,353	103	80	209	2,745
800+	2,426	131	71	222	2,850
All Schools	2,494	116	81	228	2,919
Percent of Total Expenditures (Excluding School Operations)					
<300	84.8%	3.5%	2.9%	8.8%	100.0%
300-599	85.9	3.4	3.0	7.6	100.0
600-799	85.7	3.8	2.9	7.6	100.0
800+	85.1	4.6	2.5	7.8	100.0
All Schools	85.4	4.0	2.8	7.8	100.0

Another area of difference was in expenditures per student for support services for instructional staff. In Ohio, there was very little difference in schools of different size; in Texas, expenditures per student generally were larger in smaller schools and tended to decline with increasing school size.

Share of Expenditures for Different Functions in Schools of Different Size. The shares of expenditures for schools of different size were quite similar in Ohio and Texas. In both states the share of expenditures for instruction and support services for instructional staff showed little difference in schools of different size. Similarly, the share of expenditures for school administration was largest in small schools and quite similar in schools of other size. Finally, the share of expenditures for support services for students was highest in large schools in both states and the share tended to increase with increasing school size.

Variation in Expenditures Per Student for Different Functions in Schools of Different Size. The variation in expenditures per student tended to be larger in smaller schools in Texas for all functions (table 8). In addition, the variation in expenditures tended to decrease with increasing school size, although the decline in variation was quite small for instruction. In Ohio, the variation in expenditures per student was largest in the smallest schools (under 300 students) only for support services for students and instructional staff; the variation in expenditures per student for classroom instruction and school administration was larger in very small schools than in larger schools (over 600 students), but not quite as large as in schools enrolling between 300 and 600 students (table 7). Overall, however, it would appear that the variation in expenditures per student tends to be larger in smaller schools in both states.

TABLE 7

**Coefficients of Variation for School-Level Expenditures in Ohio
for Major Functions, by School Size, 1993-94**

School Size	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures	School Operations	Total School-Level Expenditures
Coefficients of Variation for Expenditures Per Student							
<300	63.9%	360.0%	356.0%	69.7%	71.7%	41.0%	57.8%
300-599	64.0	114.0	118.0	82.9	65.5	38.5	54.1
600-799	48.8	85.4	88.0	61.6	49.7	27.4	39.0
800+	50.4	68.7	83.1	62.0	51.2	29.8	41.2
All Schools	58.0	119.0	141.0	73.1	59.9	34.9	48.8
Coefficients of Variation for Percent of Total Expenditures (Excluding School Operations)							
<300	7.3%	128.4%	141.7%	44.2%	—	—	—
300-599	6.1	87.6	84.7	36.4	—	—	—
600-799	7.6	62.8	62.8	58.4	—	—	—
800+	5.9	40.4	52.3	41.2	—	—	—
All Schools	6.6	74.6	79.8	44.2	—	—	—
Coefficients of Variation for Percent of Total Expenditures (Including School Operations)							
<300	31.4%	139.3%	147.5%	50.8%	—	60.1%	—
300-599	34.5	96.9	90.6	45.8	—	66.3	—
600-799	38.7	76.2	75.3	51.7	—	69.8	—
800+	38.5	57.1	66.5	48.1	—	71.5	—
All Schools	36.1	86.0	87.7	49.2	—	67.8	—

TABLE 8

**Coefficients of Variation for School-Level Expenditures in Texas
for Major Functions, by School Size, 1992-93**

School Size	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures
Coefficients of Variation for Expenditures Per Student					
<300	51.1%	248.0%	137.0%	65.6%	53.3%
300-599	20.9	64.2	56.5	34.7	21.2
600-799	20.3	63.4	50.8	32.7	20.6
800+	19.0	50.5	48.2	27.7	18.8
All Schools	27.4	94.7	72.3	41.4	28.2
Coefficients of Variation for Percent of Total Expenditures (Excluding School Operations)					
<300	7.3%	121.0%	85.8%	46.1%	—
300-599	4.5	56.5	48.7	35.2	—
600-799	3.7	50.9	45.0	23.6	—
800+	3.7	42.4	44.1	21.6	—
All Schools	4.3	54.9	51.0	29.5	—

Variation in the Share of Expenditures for Different Functions in Schools of Different

Size. Variation in the shares of expenditures for different functions generally parallels the findings regarding expenditures per student. In Texas, the variation in the shares of expenditures tended to be largest in the smallest schools and to decline for all functions as school size increased. This pattern was also found in Ohio for support services for students and instructional staff, but not for the other two functions. There the variation in the shares of expenditures for instruction and school administration tended to be largest in relatively large schools (600 to 800 students) and not quite as large in the smallest schools (under 300 students). However, this finding must be considered in light of the overall size distribution of schools and the types of schools found in different size categories.

- **Are there systematic differences in expenditures per student and the share of expenditures for different functions in schools located in different geographical areas?**
- **Are there systematic differences in variation in expenditures per student and the share of expenditures for different functions in schools located in different geographical areas?**

The discussion that follows of the relationship between expenditures per student for different functions and school location is limited to Texas, as the school-level expenditure file in Ohio did not contain a school location variable.

Expenditures Per Student for Different Functions in Schools Located in Different

Geographical Areas. Total expenditures per student and expenditures per student for instruction, school administration, and support services for instructional staff were highest in rural schools in Texas and relatively low in independent towns (table 9). Expenditures per student for instruction also tended to be low in suburban schools, but somewhat higher in schools in urban areas. On the other hand, expenditures per student for support services for students tended to be slightly higher

TABLE 9**School-Level Expenditures in Texas for Major Functions, by Location, 1992-93**

Location	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures
Expenditures Per Student					
Urban	\$2,494	\$120	\$73	\$239	\$2,926
Suburban	2,393	129	84	218	2,824
Independent Town	2,395	101	74	201	2,771
Non-Metropolitan	2,606	102	94	227	3,029
Rural	3,114	71	93	279	3,557
All Schools	2,494	116	81	228	2,919
Percent of Total Expenditures (Excluding School Operations)					
Urban	85.2%	4.1%	2.5%	8.2%	100.0%
Suburban	84.7	4.6	3.0	7.7	100.0
Independent Town	86.4	3.6	2.7	7.3	100.0
Non-Metropolitan	86.0	3.4	3.1	7.5	100.0
Rural	87.5	2.0	2.6	7.8	100.0
All Schools	85.4	4.0	2.8	7.8	100.0

in urban and suburban schools than in schools in other geographic locations. It should be noted, however, that there is a strong relationship between school location on the one hand and school size and type on the other. Therefore, the independent effect of school location on expenditures per student for different functions would have to be explored more fully in multivariate analyses of school expenditures.

Share of Expenditures for Different Functions in Schools Located in Different

Geographical Areas. The shares of expenditures for different functions corresponded with expenditures per student for some functions, but not for others. The share of expenditures for instruction again tended to be highest for instruction in rural schools, although the differences were small across locations. In addition, the shares of expenditures for support services for students tended to be highest in urban and suburban schools and lower in other schools, and the shares of expenditures for support services for instructional staff were slightly higher in non-metropolitan schools than in schools in other locations. In contrast, the share of expenditures for school administration tended to be slightly higher in urban — as opposed to rural — schools, with little difference across schools in other locations. It should, however, be noted that, with the exception of support services for students, the shares of expenditures for different functions tended to be very close in schools located in different geographical areas; also, the small differences in shares of spending across schools may be due to factors other than the location of the school.

Variation in Expenditures Per Student for Different Functions in Schools Located in Different Geographical Areas. The variation in expenditures per student was consistent for different functions in different geographical areas (table 10). For total expenditures per student and two functions — instruction and school administration — the variation was highest in urban schools, second-highest in rural schools, and lowest in schools in independent towns. For two other functions — support services for students and instructional staff — the variation in expenditures per student was highest in rural schools and lowest in schools in non-metropolitan areas; the variation in expenditures per student for school operations was also highest in rural schools, but lowest in urban schools.

TABLE 10

**Coefficients of Variation for School-Level Expenditures in Texas
for Major Functions, by Location, 1992-93**

Location	Classroom Instruction	Student Support Services	Instructional Staff Support Services	School Administration	Subtotal School-Level Expenditures
Expenditures Per Student					
Urban	30.8%	90.4%	66.8%	46.1%	31.3%
Suburban	23.9	96.2	68.3	35.7	25.5
Independent Town	20.5	102.0	84.5	29.9	21.9
Non-Metropolitan	24.2	76.5	66.4	39.1	25.1
Rural	28.5	123.0	97.2	43.0	28.7
All Schools	27.4	94.7	72.3	41.4	28.2
Percent of Total Expenditures (Excluding School Operations)					
Urban	4.8%	58.6%	48.0%	32.3%	—
Suburban	3.6	39.7	46.7	23.0	—
Independent Town	3.9	63.1	50.0	23.9	—
Non-Metropolitan	4.3	57.0	51.9	35.4	—
Rural	4.5	106.0	81.6	34.6	—
All Schools	4.3	54.9	51.0	29.5	—

Variation in the Share of Expenditures for Different Functions in Schools Located in Different Geographical Areas. In contrast with expenditures per student, variation in the share of expenditures for different functions tended to be consistently higher in rural schools than in schools in other geographical areas. In addition, the variation in the share of expenditures for three functions (classroom instruction, support services for students, and school administration) was lower in

suburban schools than in schools in other areas; for the other two functions (support services for instructional staff and school operations), the variation was lowest in urban schools.

Expenditures for Instructional Programs

- **What proportion of program expenditures is spent, on average, on regular classroom instruction, special education, and other school programs?**

Overall, regular classroom instruction comprised nearly 83 percent of program expenditures in Ohio in 1993-94, special education 9.2 percent, vocational education 4.7 percent, and bilingual education about 0.1 percent; other instructional programs comprised the remaining 3.2 percent of program expenditures (table 11).⁷ In Texas, the shares of total expenditures for each program in 1992-93 were: 77.1 percent for regular classroom instruction; 12.1 percent for special education; 3.9 percent for bilingual education; 4.8 percent for vocational education; and 2.1 percent for other programs.

- **What is the variation in the share of total expenditures for different programs among schools across the state?**

The variation in the share of expenditures for different education programs differed significantly across programs. In both Ohio and Texas, the share of total program expenditures for regular classroom instruction showed the smallest variation, while the share expenditures for bilingual education showed the largest variation; the share of expenditures for special education, vocational education, and other school programs fell between the two extremes.

As with expenditures for different functions, a number of factors may explain differences in variation in expenditures across programs. Most importantly, the number of schools providing

⁷Expenditures for programs other than classroom instruction are for special program services; expenditures for regular education are included in “regular classroom instruction.” Total program expenditures are lower than total expenditures for classroom instruction because some expenditures that are assigned function codes, e.g., athletic coaches, are not assigned program codes in the two states' accounting systems.

different instructional programs differed dramatically in the two states. In both states nearly all schools reported expenditures for regular classroom instruction and a very large percentage reported expenditures for special education. However, the percentage of schools reporting expenditures for vocational education was considerably lower — 24 percent in Ohio and 35 percent in Texas — and the vast majority of these schools were high schools. An even smaller percentage of schools reported expenditures for bilingual education in Ohio — less than 3 percent of all schools statewide. This would also contribute to larger coefficients of variation for these programs, since even schools reporting “zero” expenditures for these programs would be included in the statistics.

- **Are there systematic differences in the share of expenditures for different programs in different types of schools?**

Share of Expenditures for Different Programs in Different Types of Schools. The share of expenditures for different programs was similar in both states for several functions. In both Ohio and Texas, the share of program expenditures for regular classroom instruction was highest in middle schools, lower in elementary schools, and lowest in high schools (tables 11 and 12). The share of expenditures for vocational education was also highest in high schools, very small in middle schools, and almost negligible in elementary schools and the share of expenditures for bilingual education — though very small altogether in Ohio — was highest in elementary schools. Finally, the share of expenditures for special education tended to be higher in elementary and middle schools and lower in high schools in both states.

Variation in the Share of Expenditures for Different Programs in Different Types of Schools. Variation in the share of expenditures for different programs showed the same patterns in the two states in two program areas — special education and vocational education — a partially similar pattern for bilingual education, and different patterns for regular instruction and other instructional programs (tables 13 and 14). In both states, the variation in the share of

TABLE 11**School-Level Expenditures in Ohio for Major Programs, by School Level, 1993-94**

Level	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs	Total School-Level Program Expenditures
Percent of Total Program Expenditures						
Elementary	84.2%	9.9%	0.2%	0.1%	5.6%	100.0%
Middle	85.0	10.7	0.1	2.4	1.9	100.0
High	79.3	7.2	0.1	13.0	0.4	100.0
All Schools	82.8	9.2	0.1	4.7	3.2	100.0

TABLE 12**School-Level Expenditures in Texas for Major Programs, by School Level, 1992-93**

Level	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs	Total School-Level Program Expenditures
Percent of Total Program Expenditures						
Elementary	78.3%	12.8%	6.6%	0.0%	2.2%	100.0%
Middle	81.6	12.1	2.1	1.6	2.5	100.0
High	73.7	8.9	0.9	15.0	1.6	100.0
Combined K-12	53.2	37.8	1.1	6.0	1.8	100.0
All Schools	77.1	12.1	3.9	4.8	2.1	100.0

TABLE 13**Coefficients of Variation for School-Level Expenditures in Ohio
for Major Programs, by School Level, 1993-94**

Level	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs
Coefficients of Variation for Percent of Total Program Expenditures					
Elementary	11.8%	79.7%	896.0%	1060.0%	121.0%
Middle	11.7	62.2	1020.0	213.0	166.0
High	16.0	69.1	627.0	86.5	321.0
All Schools	13.5	74.9	961.0	197.0	168.0

TABLE 14**Coefficients of Variation for School-Level Expenditures in Texas
for Major Programs, by School Level, 1992-93**

Level	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs
Coefficients of Variation for Percent of Total Program Expenditures					
Elementary	17.6%	62.7%	174.0%	2080.0%	217.0%
Middle	10.4	47.6	272.0	134.0	187.0
High	12.9	61.2	199.0	50.3	185.0
Combined K-12	40.3	121.0	421.0	124.0	231.0
All Schools	16.1	66.9	224.0	177.0	207.0

expenditures for special education was highest in elementary schools, lowest in middle schools, and between the two in high schools. Similarly, the variation for vocational education was greatest in elementary schools, smallest in high schools, and in between in middle schools. On the other hand, for regular instruction, the variation in the share of expenditures was highest in Ohio for high schools but highest in Texas for elementary schools. Variation in expenditures for other school programs showed the reverse order in the two states; highest in elementary schools in Texas, but highest in high schools in Ohio; lowest in high schools in Texas, but lowest in elementary schools in Ohio.

- **Are there systematic differences in the share of expenditures for different programs in schools of different size?**

Share of Expenditures for Different Programs in Schools of Different Size. In both states, the share of expenditures for special education was highest in the smallest schools and tended to decrease as school size increased (tables 15 and 16). On the other hand, the share of expenditures for regular classroom instruction was highest in the smallest schools in Texas and fairly similar in schools of other size; in Ohio, in contrast, the share of expenditures for regular classroom instruction was highest in large schools and fairly similar in schools in other size groups. The share of expenditures for vocational education in Ohio was highest in large schools (mostly high schools) and tended to decrease with declining schools size; in Texas the share of expenditures tended to be bimodal, with the highest shares of vocational expenditures found in both the largest and the smallest schools. Finally, the share of expenditures for other programs in Ohio was highest in the smallest schools and tended to decrease as school size increased, while in Texas, the share of expenditures was quite similar across all size groups.

TABLE 15**School-Level Expenditures in Ohio for Major Programs, by School Size, 1993-94**

School Size	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs	Total School-Level Program Expenditures
Percent of Total Program Expenditures						
<300	82.1%	11.5%	0.0%	1.4%	5.1%	100.0%
300-599	84.1	9.7	0.1	1.9	4.3	100.0
600-799	83.6	8.7	0.3	4.5	3.0	100.0
800+	80.1	7.9	0.1	10.8	0.9	100.0
All Schools	82.8	9.2	0.1	4.7	3.2	100.0

TABLE 16**School-Level Expenditures in Texas for Major Programs, by School Size, 1992-93**

School Size	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs	Total School-Level Program Expenditures
Percent of Total Program Expenditures						
<300	72.0%	17.9%	1.4%	7.2%	1.4%	100.0%
300-599	78.4	13.2	4.3	2.0	2.0	100.0
600-799	78.3	12.2	5.2	2.0	2.3	100.0
800+	76.7	10.1	3.6	7.4	2.2	100.0
All Schools	77.1	12.1	3.9	4.8	2.1	100.0

Variation in the Share of Expenditures for Different Programs in Schools of Different

Size. Variation in the shares of expenditures for different programs showed the following patterns (tables 17 and 18). In both states, there was the highest variation in the share of expenditures for special education in the smallest schools and declining variation as school size increased. For instruction, variation in the share of expenditures in Texas was largest in the smallest schools and tended to decline as school size increased; in Ohio, variation in the share of expenditures showed no relationship with school size. For bilingual education, variation in the share of expenditures in Ohio was largest in small schools and tended to decline as school size increased; in Texas, the variation was highest in the largest and smallest schools and then tended to decline as school size increased. For vocational education, variation in the share of expenditures in Ohio was highest in the smallest schools and declined as school size increased; in Texas, the variation in the share of expenditures was largest in middle size schools and smaller in both the smallest and largest schools. Finally, variation in the share of expenditures for other programs in Texas was largest in the smallest schools and then declined with increasing school size; in Ohio, it was highest in the largest schools and fairly similar in schools of other size.

- **Are there systematic differences in variation in the share of expenditures for different programs in schools located in different geographical areas?**

As with expenditures for different functions, the findings presented below apply only to Texas, as the school-level expenditure file in Ohio did not contain a school location variable.

Share of Expenditures for Different Programs in Schools Located in Different

Geographical Areas. The share of expenditures for different programs showed the following patterns (table 19). The share of expenditures for regular classroom instruction was highest in

TABLE 17

**Coefficients of Variation for School-Level Expenditures in Ohio
for Major Programs, by School Size, 1993-94**

School Size	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs	Total School-Level Program Expenditures
Coefficients of Variation for Percent of Total Program Expenditures						
<300	14.9%	108.0%	2660.0%	361.0%	143.0%	—
300-599	11.4	75.1	995.0	248.0	142.0	—
600-799	12.5	63.9	833.0	183.0	160.0	—
800+	16.3	52.9	562.0	118.0	263.0	—
All Schools	13.5	74.9	961.0	197.0	168.0	—

TABLE 18

**Coefficients of Variation for School-Level Expenditures in Texas
for Major Programs, by School Size, 1992-93**

School Size	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs
Coefficients of Variation for Percent of Total Program Expenditures					
<300	25.1%	116.0%	329.0%	177.0%	255.0%
300-599	16.5	62.7	216.0	330.0	226.0
600-799	15.5	57.4	186.0	310.0	206.0
800+	14.0	50.7	242.0	113.0	191.0
All Schools	16.1	66.9	224.0	177.0	207.0

TABLE 19

School-Level Expenditures in Texas for Major Programs, by Location, 1992-93

Location	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs	Total School-Level Program Expenditures
Percent of Total Program Expenditures						
Urban	74.4%	12.6%	6.3%	4.2%	2.5%	100.0%
Suburban	78.3	11.9	3.5	4.1	2.2	100.0
Independent Town	77.7	12.7	2.1	6.1	1.3	100.0
Non-Metropolitan	78.8	11.6	1.8	6.1	1.7	100.0
Rural	80.4	10.7	0.7	6.9	1.3	100.0
All Schools	77.1	12.1	3.9	4.8	2.1	100.0

rural schools, fairly similar in schools of other size, and slightly lower in urban schools. The share of expenditures for bilingual education was highest in urban schools, while the share of expenditures for vocational education was highest in rural schools; in contrast, the share of expenditures for special education tended to be quite constant across geographical locations. Finally, the share of expenditures for other school programs tended to be slightly higher in urban and suburban schools and very similar in schools located in other geographical areas.

Variation in the Share of Expenditures for Different Programs in Schools in Different Geographical Locations. Variations in the shares of expenditures for programs in different geographical locations again were quite similar to the patterns described above for expenditures per student (table 20). Variation in the share of expenditures was highest in urban schools for instruction, special education, vocational education and other school programs; variation was lowest in rural schools for instruction, vocational education, and other instructional programs. In

TABLE 20**Coefficients of Variation for School-Level Expenditures in Texas
for Major Programs, by Location, 1992-93**

Location	Regular Classroom Instruction	Special Education	Bilingual Education	Vocational Education	Other Programs
Coefficients of Variation for Percent of Total Program Expenditures					
Urban	20.2%	75.5%	183.0%	189.0%	233.0%
Suburban	13.6	62.7	221.0	175.0	189.0
Independent Town	14.0	61.9	245.0	169.0	153.0
Non-Metropolitan	12.7	56.7	274.0	169.0	126.0
Rural	11.6	65.6	223.0	134.0	109.0
All Schools	16.1	66.9	224.0	177.0	207.0

contrast, the variation in the share of expenditures for bilingual education was highest in non-metropolitan schools and lowest in urban schools.

Summary of Findings

The analysis of school-level expenditures for different functions and instructional programs developed some findings that were consistent in the two states and some findings that appeared to be state-specific. With a sample of only two states — selected based solely on the availability of school-level expenditure data — it is, of course, premature to determine whether common findings are generalizable to other states. We, nonetheless, summarize here the main common findings of the study and recommend that they be tested further as school-level expenditure data become available in other states. The main findings about expenditures for different functions are:

- Expenditures for classroom instruction represented about 85 percent of total school-level expenditures, when expenditures for school operations (transportation, plant maintenance and operation, food services) were excluded from spending. Expenditures for school administration represented about 8 percent of the total,

support services for students about 4 percent, and support services for instructional staff about 3 percent of total expenditures.

- The variation in both expenditures per student and the share of total expenditures was smallest for instruction and largest for support services for students and instructional staff. The variation for school administration fell between the two extremes, but was generally closer to that for instruction than for support services for students and instructional staff.
- Total school-level expenditures per student were highest in high schools, lowest in elementary schools and in between in middle schools. This same pattern applied to all functions in Ohio, but only to support services for students and school administration in Texas. In Texas, expenditures per student for these services were highest in high schools and lowest in middle schools (not elementary schools).
- There was little difference in the share of total expenditures spent on instruction in different types of schools, although the percentage in elementary schools was slightly higher than in middle and high schools. The share of total expenditures for school administration was again quite similar in different types of schools, but slightly lower in elementary schools. The share of total expenditures for support services for students and instructional staff was slightly higher in high schools than in elementary or middle schools.
- Expenditures per student did not show consistent patterns for different functions in schools of different size. Patterns were similar for administration, but not for instruction. Expenditures per student for administration were highest in the smallest schools and about the same in schools of other size in both Ohio and Texas. In contrast, expenditures per student for instruction were highest in the largest schools in Ohio and the smallest schools in Texas; expenditures were about the same in other size groupings in both states.

The main findings about expenditures for different programs are:

- Expenditures for regular classroom instruction comprised about 80 percent of total program expenditures, with the range from about 77 percent in Texas to about 83 percent in Ohio. Expenditures for special education ranged from 9 to 12 percent and expenditures for vocational education were about 5 percent of total expenditures in both states. Expenditures for bilingual education were negligible in Ohio and about 4 percent of total program expenditures in Texas.
- The share of expenditures for regular classroom instruction was higher in middle schools than elementary or high schools. This finding resulted in part from the concentration of expenditures for special education and bilingual education in elementary schools and vocational education in high schools.
- The variation in the share of expenditures for regular classroom instruction and special education was highest in elementary schools, lowest in middle schools, and in

between in high schools in both Ohio and Texas. Other patterns of variation were found for vocational education and bilingual education.

- The share of expenditures for special education was highest in the smallest schools and tended to decrease as school size increased in both states. In addition, the variation in the share of expenditures for special education showed this same pattern: highest in the smallest schools, and decreasing with increased school size.

Concluding Remarks

The analyses presented above were intended to illustrate the potential for using school-level expenditure data to address important policy questions. There are, in addition, many potential analyses that could be conducted using school-level data, e.g., analyses of the relationship between expenditures and the demographic and fiscal characteristics of schools, multivariate analyses of the effects of different factors on school-level expenditures for different functions and programs, analyses of intra-district variation in school-level expenditures, analyses of the relationship between school-level expenditures and selected student outcomes. Some of these analyses can already be carried in states like Ohio and Texas that already maintain school-level expenditure data. However, the potential for these data is even greater in multi-state analyses. Yet these analyses can only be conducted if there are standard definitions of functions and programs in different states. A strong leadership role for NCES will clearly be required as more states move toward the development of school-level finance data.

CHAPTER 5

IMPLICATIONS OF THE STUDY FOR THE DEVELOPMENT OF A MODEL SCHOOL-LEVEL FINANCE DATA COLLECTION

Introduction

This study examined the financial accounting systems in four states that collect school-level finance data from some or all school districts and the approaches used by Ohio and Texas to collect and report school-level finance data. It also explored the feasibility of using school-level finance data to address issues of interest to policy makers, educators, and the general public. This chapter summarizes our assessment of the usability of school-level finance data and provides recommendations for the design and development of a model school-level finance collection.

School-Level Expenditure Analyses Significantly Enhance District-Level Analyses

District-level expenditure data can be used to address a host of issues of interest to policy makers and the larger education community. These include analyses of total expenditures per student, interdistrict variation in expenditures per student, the relationship between expenditures per student and other district characteristics, as well as the relationship between expenditures and district-level and student-level outcomes. More disaggregated district-level expenditure data can also be used to analyze the use of school resources for different functions, (e.g., the percentage of total expenditures for student instruction, administration, and other school functions), as well as interdistrict variability in both expenditures per student and the percentage of expenditures allocated to different functions. An important question, however, is whether there is added value in using school-level data in analyses

of education expenditures. Or put differently, what can be learned using school-level expenditure data that cannot be learned with district-level data alone?

Our experience with this study suggests that the use of school-level expenditure data can both enhance analyses conducted using district-level data and address other questions of policy interest that cannot be addressed using district-level data alone. One analysis that can be enhanced (or refined) using school-level data concerns the share of expenditures used for different functions. The use of district-level expenditure data alone permits analysis of overall district expenditures for these functions. However, this analysis assumes that expenditures for “central administration” represent the totality of district-level expenditures, when, in fact, expenditures for the administration of instruction, support services for students and instructional staff, and school operations are included in each of the other functions. Although the amount of money added to central office operations for administration from other functions will be small in most cases, the separation of expenditures into district-level and school-level components permits a more accurate accounting of expenditures for district-level and school-level functions.

In addition to permitting a refinement of the analysis of expenditures for different functions, school-level expenditure data expand the domain of analysis significantly. Most importantly, they permit analysis of expenditures for different functions across schools within a state. With school-level data, it is possible to determine whether expenditures per student and the shares of expenditures for different functions differ in schools at different levels (elementary, middle/junior high, and high schools), schools of different size and location, and schools with different demographic, economic, and social characteristics. It is also possible to assess the variability in expenditures per student for these functions and the share of total expenditures for these functions across schools within a state — and across schools within particular districts. And, if states are using comparable definitions of functions in their school-level accounting systems, it becomes possible to compare the use of

resources for different functions in schools of similar size, location, demography, and fiscal characteristics in different states. Finally, in states which collect school-level data on student achievement, it is possible using school-level expenditure data to examine the relationship between expenditures and student achievement at the school level, rather than the district level. This represents an important advancement over district-level analysis, since the school is much closer to the delivery of education services than the school district.

In short, school-level expenditure data greatly expand the domain of analysis and permit consideration of a much broader range of issues of relevance to education policy. Although the variables contained in these analyses are similar in many cases to those used in district-level analyses, they can nonetheless be used to provide new insights into important policy issues.

Recommendations for the Design of a School-Level Finance Data Collection

The review of Ohio's and Texas's experience with school-level finance data collections suggests several recommendations for the design of a model collection system.

First, a school-level financial accounting system should contain a clear definition of what constitutes a "school," to which financial activities should be assigned. Although the concept of a "school" appears obvious, the definition should specify the treatment of school building sites that contain a complex of schools, buildings that contain alternative schools or schools within schools, and entities such as adult learning centers, dropout prevention centers, and special education centers.

Second, a school-level financial accounting system should include a coding structure that assigns expenditures to the central office and to individual schools. Each school must be assigned a unique code, so that expenditures at that school can be attributed to it. The experience in Ohio and Texas suggests that the assignment of codes to individual schools can be done at either the district or the state level, although assignment of individual school codes at the state level may reduce the

possibility that the same code will be assigned to more than one school in the state. In addition, the school building codes should distinguish different types of schools (e.g., elementary schools, middle/junior high schools, high schools, special education centers, etc.) and possibly the grade structure of each school or education center. This type of coding will permit both the assignment of expenditures to individual schools and the analysis of expenditures in similar schools within a district and throughout the state.

Third, a school-level accounting system should, at a minimum, contain a coding structure that accounts for expenditures for the basic functions and objects used in the NCES Handbook, *Financial Accounting for Local and State Systems*. Ideally, the accounting system should also include a coding structure that permits accounting of expenditures for different instructional programs at the school level. This type of coding structure would permit the comparison not only of total expenditures at the school site, but also of expenditures for different functions and programs in schools throughout the state.

Fourth, to account for expenditures for school personnel at individual schools most accurately, the financial accounting system should be linked to each district's payroll system or personnel record system. Linkage to the payroll system would permit accounting of expenditures for both salaries and fringe benefits for each employee and the assignment of expenditures to the proper function at each school site.

Fifth, the accounting system should contain well-specified procedures to account for expenditures for school personnel who work in more than one school or who divide their time performing central office functions and working at the school site. These procedures are specifically needed to accurately account for expenditures for bus drivers who provide transportation services to children at several schools and maintenance staff who are not assigned to individual schools. Procedures may also be needed to account for expenditures for principals and teachers who work

part-time in the district office and part-time in schools, as well as for itinerant teachers who teach part-time in two or more schools.

Sixth, the accounting system should contain clear procedures to account for expenditures for supplies, materials, and equipment at the central office and individual schools. Accounting for these expenditures at the school site would be most accurate if each school had the authority to make its own purchases; expenditures could then be accounted for directly at the school site and entered into the accounting system with the appropriate school code. Expenditures could also be attributed directly to individual schools if the central office purchased supplies, materials, and equipment for specific schools. However, where supplies, materials, and equipment are bought by the central office in bulk and distributed to the schools, this type of direct accounting might not be possible. The accounting system should therefore contain a well-specified set of allocation procedures to ensure that all expenditures are attributed appropriately to individual schools.

Finally, the accounting system should contain a set of procedures for accounting for purchased services and school operations (e.g., fuel used for building maintenance, electricity, etc.) at each school building. Again, the most accurate method of accounting for these expenditures would be to account for purchased services and operating expenditures directly at each school building. However, if this method cannot be used because the central office makes these purchases for all schools, the accounting system should contain a set of procedures to assign expenditures to individual schools or to allocate expenditures on a formula basis.

In summary, the requisite elements of a school-level financial accounting system are very similar to those required to operate a district-level system. Expenditures must be accounted for and coded by function and object to permit analysis of the use of school funds by the district and comparison of expenditures across schools. In addition, procedures must be developed to allocate expenditures that cannot be accounted for directly at a particular site to ensure that all expenditures

are assigned to the appropriate building. Because of the strong congruence in the requirements of a district-level and a school-level financial accounting system, it should be possible for most states to extend their district-level finance collections and implement school-level collections in all school districts and schools.

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<u>Number</u>	<u>Title</u>	<u>Contact</u>
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94-02 (July)	Generalized Variance Estimate for Schools and Staffing Survey (SASS)	Dan Kasprzyk
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Listing of NCES Working Papers to Date--Continued

<u>Number</u>	<u>Title</u>	<u>Contact</u>
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Listing of NCES Working Papers to Date--Continued

<u>Number</u>	<u>Title</u>	<u>Contact</u>
	(NELS:88) Research Framework and Issues	
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Listing of NCES Working Papers to Date--Continued

<u>Number</u>	<u>Title</u>	<u>Contact</u>
96-18 (Aug.)	Assessment of Social Competence, Adaptive Behaviors, and Approaches to Learning with Young Children	Jerry West
96-19 (Oct.)	Assessment and Analysis of School-Level Expenditures	William Fowler