ABSTRACT

AN ANALYSIS OF
CURRENT PRACTICES IN COST ACCOUNTING
IN SCHOOL DISTRICTS

By Helen Smith Cloyd

Before any improvement in financial management can be initiated, it is essential to determine whether those who are directly concerned with school problems which relate, in part, to inadequate financial means, feel that there is any need for improvement in financial management procedures. This research study was performed to determine the frame of mind of school administrators respecting their desires for the use of an additional financial tool—cost accounting, and whether it is possible to utilize cost studies in school district accounting.

Questionnaires were sent to a random sampling of 233 school districts, stratified by counties, located in the states of California, Florida, Illinois, Minnesota, Mississippi, Nevada, New Jersey, South Dakota, Texas, and Wyoming. Replies were received from 74.6% of the districts. Answers disclosed that 92% of the respondents do not use cost studies but 52% of the group felt that cost information would be useful in discussions of school expenses with interested groups. A follow-up postcard survey increased the majority opinion to 57%. Information was secured on per capita costs, enrollments, types of general accounting and cost accounting records used, types of mechanical equipment available, number of bookkeeping employees, methods used for averaging expenditures, and the disposition of school administrators in small, medium, and large school districts toward the use of cost methods

in expenditure control. Correlations of the items on the questionnaire were developed by the Michigan State University MISTIC Computer, and the correlations suggested that those who felt that cost reports were important already made use of cost approximations on teaching and non-teaching expenditures. Interviews with ten officials of small, medium, and large school districts in Illinois, Michigan, and Ohio showed that the feelings of these school administrators toward cost studies were almost identical with those returning the questionnaires.

A study of the manuals, accounting forms, regulations, and rules of the state departments of education in the 50 states showed that in at least 49 of the states the regulatory provisions permit school districts to develop cost studies to aid in the solutions to their financial problems. The criteria used was whether school districts prepare a budget, that account classifications contain information on revenues and disbursements, and that there is at least a one-level gradation of account classifications for expenditures. These findings also apply in the District of Columbia.

Cost analyses using direct cost and indirect cost centers are developed for varying sizes of school districts based on acceptable business practices as recommended in the Cost Accountants' Handbook, various publications of the National Association of Accountants and the American Accounting Association, and on the recommendations in Handbook II of the U. S. Office of Education. Cost studies on consolidations and long-term variable budgets are two types of cost reports singularly useful for school district financial planning which is possible undering the prevailing general accounting structure in school districts.

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CURRENT PRACTICES IN COST ACCOUNTING
IN SCHOOL DISTRICTS

By

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CHAPTER I

INTRODUCTION

School administrators in many school districts face the problem of handling expanded school enrollments with limited physical facilities and with limited teaching personnel. Both these limitations may be attributed in part to limited financial means. Specific problems, such as teacher shortages, needs for expanded or qualitative curriculum offerings, as well as provisions for dealing with individual pupil differences, are directly or indirectly related to the primary problem of financial adequacy. As finances are basic to a consideration of educational problems, it follows that any improvement in school financial management aids in the solution of financial problems, and accrues beneficially to the school district and to the community which it serves.

The solution to financial problems may be approached from two directions: an increase in revenues or strict control over costs and expenditures. Neither solution can be reached without study and effort. If rising educational costs can be met with rising revenues, there may be little desire to concentrate on cost studies. However, when increases in taxes are no longer approved by voters, it becomes necessary for the school officials to analyse costs with the intention of determining the value, quality, and quantity of educational offerings. Therefore, it

is incumbent upon the school administrator to know and understand financial accounting so that he may use this tool to explain costs in his effort to win the cooperation of the community. On the other hand, even the approving, cooperating taxpayer is entitled to know the costs of the various services offered by the educational system. Analyzing the costs of the various educational services is called cost accounting. Cost accounting is the unique tool through which quantitative financial figures can be converted into meaningful and significant unit costs.

The Problem

It was the purpose of this study to determine whether those who are directly concerned with the problem of financial accounting feel that there is any need for improvement, the extent of improvement which they may deem desirable, the ecological state in which improvements made be made, and the development of suggested practices in cost accounting.

The questions which formed the basis of the investigation for the study of the problem are:

a. Is there a felt need by school administrators for the use of underlying cost records as an aid to managerial efficiency?

b. Does the general accounting framework, as set by state regulatory bodies, hamper the use of costing methods?

c. Can cost accounting records be developed independently of the general accounting framework, either on a limited or extensive basis, depending on the type of educational program offered, the size of the school administrative unit, and the size of the pupil enrollment?

Need for the study

Per capita expenditures for public school education vary widely, not only between state boundaries but also between local school districts in each state. It cannot be practical, nor educationally or culturally feasible, for each school to maintain the same exactitudes in educational standards. If some schools were not superior, there would be no models for comparison to create concern over inferior schools. Equalization of educational opportunities could result in self-defeat if it should bring about a qualitative deterioration of educational programs.

For instance, if a school district such as Scarsdale, New York could not offer a program which evokes the envious comments of lay leaders as well as school leaders, there might possibly be a slackening in the striving for local improvement in education. In Scarsdale, the average cost of education (including debt service and capital outlay) for the year 1961-62 was $1,187.67 per pupil while the maximum classroom teacher salary was $12,000.[1] The motives for improvements in education should be generated within each individual school district to improve its local situation in addition to a generalized attempt to raise national educational standards by exterior pressures.

The improvement of education in each local school district provides the incentive for further improvement and revitalizes the urge toward the

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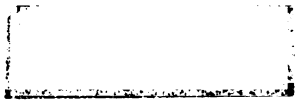
[1]Town of Scarsdale, New York, Annual Budget and School Tax Election to be held on Wednesday, May 3, 1961 of the Union Free School District No. 1, (Scarsdale, New York: Board of Education, 1961), pp. 11-12.



community ideal. Leading school districts reflect the ambitions of the tax-paying public commensurate with the community's level in living standards.

The ability of a school district to attain its goal is dependent not only on its school leadership but also on its lay leadership. Each type of leadership activates and reactivates the other. Their combined efforts develop the community's sense of educational values and the willingness of the tax-paying public to support the schools.

There is a triad of responsibility--that of the educational ideal, that of the school, and that of the public--which imposes the need for sound financial management on the part of the school administrator. It is the duty of the administrator to provide financial managerial efficiency despite impediments created by legal provisions, state bureaucracy and restraints, and the inability of the taxing base to support good schools. While school quality can be improved by active and intelligent administration, the effectiveness of financial support depends on the administrator's understanding of managerial control afforded by proper accounting records.

A single study by the NEA Research Division in 1950 reported that city superintendents spent 15.1 per cent of their working time in financial administration; rural superintendents reported 18.1 per cent.[1] The balance of the superintendent's time was spent in personnel administration, public relations, general planning for the school

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[1]National Education Association, Public-School Finance: A Unit of Work, Prepared for the Committee on Tax Education and School Finance by the NEA Research Division (Washington 6, D. C.: National Education Association, 1953), p. 3.

program, etc. While the portion of the superintendent's time spent in financial administration today is subject to conjecture, it may be assumed that the rate of turnover in school personnel and the rate of change in the school administrator's duties would not greatly affect the time allocations indicated by the NEA study.

If it can be assumed that the portion of the superintendent's time spent in financial management consisted of executive and supervisory duties, then it is desirable that the executive employ this time effectively with a minimum of checking on clerical performance and on the accuracy of financial figures. To be able to do this, the executive needs to know what is essential for reporting purposes and to direct his employees to render the information accurately and with a minimum of effort.

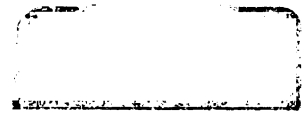
The school administrator must be able to record financial information not only in the prescribed legal manner but also in a way that will give him needed information to handle internal financial matters. It is in the area of internal problems that the value of cost accounting principles as an aid to managerial efficiency is being increasingly recognized. A study in the relationship of cost and quality in education is important for it provides the needed answers to internal financial problems. The investigation of the need and the desire of the school administrator for cost studies and how cost studies can be a managerial tool is the purpose of this research paper.

Current practice in school district accounting and the need for cost accounting

The school administrator in discharging his public office works within a framework of legal requirements which is set by state and federal regulations in certain respects and is supplemented locally by the board of education. Accounting for school district units is unique in its treatment of the separate funds of the school district as independent financial entities in accordance with legal provisions which provide for their establishment. Accounting for separate funds stems from legal provisions which specify the exact purpose of each fund. All asset, liability, income and expenditure accounts pertaining to a special activity are grouped within a self-balancing set of accounts pertaining to that particular fund; such funds being grouped periodically, usually annually, in financial reports.

Separation of the components of assets, liabilities, income and expenditures into distinct funds in the prescribed legal manner makes comparability of operations, either internally or externally, very difficult for the administrator: he is constantly dealing with financial segments rather than with an integrated whole. It is because of this diversity of the sources of financial information that cost information is essential for proper control.

The value of cost accounting lies in the analytical presentations of costs in various combinations which are out of context with the general accounting records. Cost studies may take the form of reports, schedules, ledgers, or even graphic presentations. These records are prepared in



addition to the general accounting records, but draw upon the general accounting records for their material and are reconciled with these primary records for purposes of control.

Underlying cost records are used for the purpose of studying the relationships of costs to significant units which represent the end results of the efforts of the economic entity. In a school district these units might be presented as per pupil units (based on average daily attendance or average daily membership), weighted elementary classroom units, or grade or course units.

Cost records should be developed for purposes of cost control to check actual costs with planned costs, for purposes of planning future costs, and for a continual comparison of costs with past results and with other school district costs. The purpose of cost control is to analyze trends and to induce changes in functions based on an understanding of what is educationally desirable and what it will cost the school district.

The use of cost accounting by school management officials will result in better informed administrators who are able to act on reliable data in making their decisions. In turn, these data can be used as a powerful tool in the educational and public relations programs of the school district.

Limitation of the study

This study is limited to that segment of school financial management which is capable of practical quantification without recourse to abstractions. This study is limited to the cost accounting records which administrators of certain school districts maintain, or are required

to maintain, and certain suggested uses of cost accounting records.

Definitions of terms used

In order for the writer to convey to the reader a better understanding of the terminology included in the contents of this study, the following definitions of the terms used are given.

Accrual basis of accounting. A method which considers all revenues as soon as they are earned, whether or not the money has been received; and all expenses as soon as they have been incurred, regardless of whether the money has been paid out.

Assets. Items owned by an entity. Examples include cash, property, receivables, etc.

Average daily attendance (ADA). The sum of the days present of all pupils divided by the number of days school was actually in session.

Average daily enrollment. This term was used in this study to encompass either average daily attendance or average daily membership.

Average daily membership (ADM). The sum of the days present and absent of all pupils divided by the number of days the school was actually in session.

Budget. A plan covering financial management for a definite period in the future.

Cash basis of accounting. A method which takes account only of those transactions wherein money has been received or paid out.

Clearing account. An account used for the purpose of temporarily summarizing entries for later distribution to the proper accounts.

Cost accounting records. These financial records, underlying or in conjunction with general accounting records, which disclose variations in expenditures with the intent of considering costs in different combinations that is not possible with the use of general accounting records.

Expenditures. These are expenses incurred, whether paid or unpaid, depending on whether the books are being maintained on the cash or accrual basis of accounting.

Financial management. This term refers to the exercise of discretion by the school administrator in the handling of money matters of the school district unit.

Financial report. A written report showing the results of financial transactions of an entity; generally, the report contains a balance sheet listing the assets, liabilities, and equity and a statement showing the revenue and expenditures.

Fund. This term refers to that sum of money, or other assets, which are segregated to comply with the rules which govern its use necessitating separate accounting and reporting.

General accounting records. Basic books of account from which financial reports are prepared, and generally consist of one or more journals and ledgers.

Grade or course units. Units of measurement which use a grade or course for computing per unit expenses.

Income. This term is synonymous with revenue which represents increases in assets without any increases in liabilities, nor recoveries in expenditures; and may result from debt cancellations without causing a decrease in assets nor an increase in liabilities.

Liabilities. Debts owed. Examples include payables, bond indebtedness, etc.

Sinking fund. Money or other assets which have been set aside for making payments on debts at a future date.

Standard accounting records. This term refers to those accounting records which have been adopted on a wide scale within an industry or other activity so that comparability of financial figures between units is facilitated.

Weighted elementary classroom units. A unit of measurement which takes the average expense per classroom for elementary schools, multiplies it by a factor which represents the national average difference in per classroom expense between elementary and high schools to show the average classroom expense in weighted classroom units.

The Methodology

The study proceeded from a statement of the problem as indicated earlier to the devising of a questionnaire to determine the feelings of school district administrative personnel toward the problem of cost studies as a part of financial management. The questionnaire which was developed explores the basic features of the accounting structure through

questions which lead the respondent from an initial consideration of the general accounting records to an expression of an opinion on the desirability of cost accounting information. The questionnaire and covering letter, and a follow-up letter are shown in Appendix A.

The next step involved an analysis of the general accounting framework for school districts as recommended nationally by the U. S. Office of Education and statewide by the state departments of education of the 50 states (including the District of Columbia). The following criteria was used for this purpose:

If a school district is required to have:

a. A budget for predetermining costs;

b. a set of general accounting records to show revenues and expenditures; and

c. a sub-classification of the expenditure accounts at least on a one-level gradation;

then it is possible for the school district to add further sub-classifications to compute unit costs on a basis determined to be desirable by its management.

Cost analyses and reports are developed next for school districts of varying size. These cost techniques are those accepted procedures used by accountants today, and are based on a consideration of recommendations from authoritative sources, such as the Cost Accountants' Handbook, various publications of the National Association of Accountants and the American Accounting Association, and the Handbook II publication of the U. S. Office of Education.

CHAPTER II

REVIEW OF LITERATURE

The review of literature covers two fields in the area of school district accounting: (1) general accounting publications, and (2) cost accounting publications.

General Accounting Literature

The general accounting literature is available in the form of books, pamphlets, handbooks, and periodicals.

Books, pamphlets and handbooks

Recognising the need for standard practices in general accounting terminology, the United States Office of Education in 1957 issued a handbook for financial accounting for local and state school systems.[1] This handbook was the outcome of an earlier effort in 1953 by the Office of Education to compile a basic list of educational

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[1]U. S., Department of Health, Education, and Welfare, Office of Education, Financial Accounting for Local and State School Systems, Standard Receipt and Expenditure Accounts, State Educational Records and Reports Series: Handbook II, (Washington, D. C.: U. S. Government Printing Office, 1957).

terminology and information to be used by state departments of education.[1]

Succeeding this basic source, three booklets recommending proper accounting for school activities,[2] property,[3] and school insurance[4] were issued by the same office in 1959. These booklets impress upon school administrators the need for proper accounting for costs in the areas where laxness in record-keeping has occurred. This emphasis on these areas is of particular significance to this study because these areas are especially suited to cost studies. Efforts are being made for the adoption of these publications on a nationwide basis because it is hoped that standard accounting practices will provide a basis for report comparisons of one school district's operations with that of another school district to disclose areas in which improvements in managerial efficiency may be made. These publications of the Office of Education have been devised due to a felt need by school administrators for assistance in the development of general accounting procedures and

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[1]U. S., Department of Health, Education, and Welfare, Office of Education, The Common Core of State Educational Information, State Educational Records and Reports Series, Handbook I, (Washington, D. C.: U. S. Government Printing Office, 1953).

[2]U. S., Department of Health, Education, and Welfare, Office of Education, Financial Accounting for School Activities, State Educational Records and Reports, (Washington, D. C.: U. S. Government Printing Office, 1959).

[3]U. S., Department of Health, Education, and Welfare, Office of Education, Property Accounting for Local and State School Systems, State Educational Records and Reports Series, Handbook III, (Washington, D. C.: U. S. Government Printing Office, 1959).

[4]U. S., Department of Health, Education, and Welfare, Office of Education, School Insurance: Managing the Local Program, Bulletin 1959, No. 23, (Washington, D. C.: U. S. Government Printing Office, 1959).

methods which will improve financial management.

Two non-governmental groups concerned with educational accounting records have been working to provide help to school administrators with meaningful literature. One of these groups is the Association of School Business Officials of the United States and Canada which issued, in 1961, a statement of accounting principles for school districts. This statement was subsequently published in the April 1962 issue of School Business Affairs.[1] The principles basically follow the recommended accounting principles and procedures set forth by the National Committee on Governmental Accounting which were issued in September 1951 under the sponsorship of the Municipal Finance Officers Association. Current practices and thinking are incorporated into the newly issued statement of accounting principles.

The other interested group is the Committee on Public School Accounting of the American Institute of Certified Public Accountants (of which group the writer is a committee member) which has been endeavoring since 1958 to develop a statement of accounting and reporting principles applicable to public schools. At its last meeting in Chicago on May 7, 1962, the committee decided to proceed with a suggestion to issue a monograph on school finance directed toward an understanding of school costs by the layman rather than to help the school administrator due to the help the administrator is already receiving because of the considerable literature in the area of school

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[1]Official organ of the Association of School Business Officials of the United States and Canada.

financial accounting. Literature by this committee on accounting principles and their application was deferred indefinitely. A publication of the committee entitled, "Public School Costs: An Accounting Primer for Taxpayers," was released for printing in March 1963.

In 1960, Sam Tidwell, a member of the accounting staff at the Michigan College of Mining & Technology, published a book on public school fund accounting.[1] In a meeting at Houghton, Michigan with the author in 1958, the writer was informed that this book resulted from an effort to apply generally accepted fund accounting principles to school accounting, an endeavor which had not been previously attempted. The publication has been well received and it is anticipated that it will be adopted as a textbook by numerous schools. There is no other book on the book market dealing exclusively with this subject. A graduate summer course in public school accounting using this textbook is offered by this Michigan college currently.

The financial reporting aids which state departments of education render to school districts is covered in a later section of this work; however, it appears appropriate here to mention several school business management handbooks issued by the State Education Department of New York[2]

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[1]Sam B. Tidwell, Public School Fund Accounting, Principles and Procedures, (New York: Harper & Brothers, 1960).

[2]The University of the State of New York, The State Education Department, School Business Management Handbooks (Albany, N. Y.: The University of the State of New York, 1955-1956).

to aid school administrators. These handbooks are especially well-written and comprehensive in their subject matter.

Handbook No. 3, Budget, prescribes recommended budgetary procedures, and gives illustrations of work sheets, accounting systems, and pro forma budgets.

Handbook No. 4, Accounting and Reporting, contains 144 pages of excellent material on school fund accounting. It shows the necessary forms for budgetary and encumbrance accounting, machine accounting, and financial reporting.

Handbook No. 6, Transportation, contains recommended methods for recording costs and maintenance of school buses. Expense reports, yearly records, and cost analysis records provide much needed information on bus operational costs.

Handbook No. 7, Operation and Maintenance, is the title of this noteworthy cost accounting booklet for the control of plant operational costs including a special treatment of work orders and job orders.

Handbook No. 8, School Lunch, provides standard forms for the National School Lunch Program and the Special Milk Program, purchasing and requisitioning procedures pertaining to the lunch room program, and the use of food inventory and accounting records.

The remaining booklets deal with Responsibility (No. 1), Insurance (No. 2), Purchases and Stores (No. 5), Income (No. 9), and Personnel (No. 10).

Periodical literature

Current periodical literature on general accounting for school districts appears in several publications listed in the bibliography to this manuscript. Perusal of these articles and continual reference to these publications by the school administrator may prove to be very helpful to him.

In the Nations Schools, Carmichael[1] recounts his experiences in converting from "pen-and-ink" to machine accounting for the eighteen public schools in Muncie, Indiana. He states that there are two ways to stay within the school budget: either to cut down on the quantity or quality of the educational service rendered or to operate every department with maximum efficiency.

Casey and Bogg[2] in the American School Board state that at Tarrytown, New York gross inefficiencies were eliminated through the use of the combination adding machine and typewriter-keyboard accounting machine. Procedures for machine installations, the designing and selection of forms for machine work, and many practical suggestions are given by the authors based on their experiences.

At Wayne Township, New Jersey, the installation of an accounting machine which cost about $700 saved the cost of two salaries and was used

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[1]Forrest V. Carmichael, "We Switched to Machine Accounting and are Money Ahead," Nations Schools, (March 1954), pp. 108-112.

[2]Leo M. Casey and Ridgley M. Bogg, "Descriptive Accounting Machine Operations for School Districts," American School Board, (December 1954), pp. 26-29.

for payroll and budgetary control. Demarest[1] describes the results of this experience in the November 1954 issue of The School Executive.

Erviti[2] recommends that educators should support and comply with all recommendations dealing with the improvement of school accounting, bookkeeping and business practice, but they should resist suggestions by auditors which might curtail any part of the school program.

Extracurricular funds accounting is the subject of a study conducted by Ivins and Anderson.[3] From their national study, three patterns emerged:

a. Individual schools or school boards may account for these funds in whatever manner they choose without interference or control from either state law or the regulatory policy of the department of education of the state concerned.

b. Schools or school boards are required to conform to provisions of a state law that establishes procedures for accounting.

c. Schools or school boards are required to adhere to provisions of regulatory policies determined by the state department of education.

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[1]Neal Demarest, "How to Simplify Your Accounting," The School Executive, (November 1954), pp. 56-57.

[2]James Erviti, "State Audits Could Weaken Local Control," The School Executive, (August 1953), p. 54.

[3]Wilson H. Ivins and Helen I. Anderson, "Extracurricular Funds Accounting in the Various States, Preliminary Report," National Association of Secondary School Principals, (March 1954), pp. 122-136.

A tabular summary (by states) of the procedures in accounting for extracurricular funds was developed by the authors to show the trends prevailing in school districts.

A survey by the Nations Schools[1] on athletic funds points out that the national pattern of school athletic activities accounting is still nebulous. Good accounting practice dictates that the financial control of these funds rest with the board of education, and that the related record-keeping be a part of the school district's general accounting system. The descriptive material on accounting procedures is especially well written.

School cafeteria accounting is the subject of an article by Mowery.[2] He describes the books and the forms used in a secondary school cafeteria which had been developed from their experience to meet their particular needs. Second-year bookkeeping students are given an opportunity to keep these books. Supervision is given by the bookkeeping instructor of the high school.

Kilpatrick[3] recommends independent annual audits and lists their advantages to the school district. On the other hand,

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[1]Jury Survey, "Practice and Theory in Athletic Funds Accounting," Nations Schools, (September 1958), pp. 70-71.

[2]D. T. Mowery, "School Cafeteria Accounting," The Balance Sheet," (January 1952), p. 207.

[3]E. W. Kilpatrick, "Advantages of an Independent Annual Audit of School Accounts," Proceedings of the Thirty-Eighth Annual Convention, (Evanston, Illinois: Association of School Business Officials of United States and Canada, 1952), pp. 80-85.

Norman[1] points out present weaknesses in school audits and makes recommendations to correct these inadequacies by the adoption of a model state school audit statute. He states that twelve states (Arizona, Illinois, Kansas, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, Oklahoma, South Carolina, and Texas) have no state laws requiring the auditing of local school district financial accounts.[2]

Three articles describe the use and advantages of the Office of Education financial accounting handbook. An editorial in School Life [3] details the amount of work that was spent by various groups in the drafting of the handbook. McElligott[4] gives a condensed but interpretative version of the handbook while Reason[5] explains the uses of the handbook through a very illuminative paper presented at the 1956 convention of the Association of School Business Officials of United States and Canada.

Reason[6] continues his contribution to school accounting literature

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[1]Loyal V. Norman, "A Model State School Audit Statute," The School Executive, (March 1954), p. 71.

[2]A survey of the general accounting framework in Chapter IV showed that at the present time four of these states have passed laws requiring the auditing of local school district accounts.

[3]Editorial, "Financial Accounting for the Nation's Public Schools," School Life, (October 1955), p. 7.

[4]Joseph McElligott, "Handbook for School Accountants," Nations Schools, (November 1956), pp. 90-92.

[5]Paul L. Reason, "New Financial Accounting Handbook," Proceedings of the Forty-Second Annual Convention, (Evanston, Illinois: Association of School Business Officials of United States and Canada, 1956), pp. 132-136.

[6]Paul L. Reason, "Clearing Accounts Preclude Deceptive School Costs," Nations Schools, (August 1956), pp. 49-50.

by his authorship of two articles on the use of clearing accounts. In his first article, he shows how artificial ballooning of receipts and expenditures can happen, and how it can be avoided through the use of clearing accounts. He itemizes transactions where duplication of receipts might occur and discusses the chances of error. His second article[1] shows the use of four additional clearing account operations: materials purchased for resale, purchases and sales of securities, abatements, and interfund transfers.

Tidwell[2] gives his opinion on the need for fundamental school fund accounting training for the school executive. He decries the lack of properly trained personnel for school fund accounting and analyzes the course offerings in this type of training in graduate schools of education. In his opinion, traditional accounting courses are too narrowly business while governmental accounting courses cover city, county, state, and federal levels. His recommendation is that the public school systems can gain for themselves the same accounting advantages that are presently enjoyed by other areas of public service through the development of formal courses in schools of educational business administration.

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[1]Paul L. Reason, "Costs May be Lower Than You Think," Nations Schools, (July 1958), pp. 50-51.

[2]Sam B. Tidwell, "Fundamental School Fund Accounting," American School Board, (May 1957), pp. 134-137.

McLachlan[1] advocates that each school system should install an accounting system to meet that particular school's needs and Spitzer[2] suggests an accounting system that meets the needs of a secondary school.

Babcock[3] writes about the problems in the accounting and reporting of public school funds in his master's thesis submitted to the Graduate School of the University of Oregon. He reports that "less than satisfactory" accounting is most prevalent in the smaller school districts due to inadequately trained personnel, large employee turnover, insufficient equipment, and use of part-time workers. He advocates centralized accounting records for these small school districts.

Whitlock[4] states that as of June 1960 twenty-two of the fifty states were collecting in standard form less than one-half of the items in Handbook I of the Office of Education. Forty of the forty-six states receiving Federal funds under Section 1009 of Title X of the National Defense Education Act were putting into use the standard classifications recommended in Handbook II but their efforts "ranged from a mere beginning to substantial accomplishment." This difficulty is caused, according to the author, by the failure of Handbook II to provide for

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[1]E. M. McLachlan, "Designing Your Accounting System to Fit Your Needs," Proceedings of the Fortieth Annual Convention, (Evanston, Illinois: Association of School Business Officials of United States and Canada, 1954), pp. 85-90.

[2]A. Spitzer, "Suggested Bookkeeping and Accounting System for Secondary Schools," United Business Education Forum, (December 1950), pp. 30-31.

[3]Ronald E. Babcock, "Problems in the Accounting and Reporting of Public School Funds," (unpublished master's thesis, Graduate School, University of Oregon, 1958).

[4]James W. Whitlock, "Financial Accounting," School Life, (June 1961), pp. 18-21.

an adequate function-object coding system. School districts using bookkeeping machines and data-processing equipment find it necessary to change sub-account letter designations to decimals, to devise new account numbers, and to rearrange the sub-accounts.

Lack of adequate staff to maintain property records is the reason that Handbook III is not adopted more widely by school districts according to Roberts.[1] Only two state and three local school systems use completely the property accounts that are defined and classified in the Handbook. Under Title X of the National Defense Education Act, funds for the improvement of records of local, state, and national school systems are provided. Reports from the states using these funds indicate that several states are planning to use these accounts in the near future. The author states that the way to start on the adoption of property accounting methods is to:

a. make a formal decision to use the Handbook;

b. develop a plan of organization;

c. develop a program of operating activities; and

d. develop an evaluative program.

The personnel training problems which present themselves when a change to automatic accounting equipment takes place is reviewed by Saathoff.[2] He outlined the work necessary to convert to automation at

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[1]Charles E. Roberts, "Why Property Accounting?" School Life, (September 1961), pp. 21-25.

[2]Addison B. Saathoff, "Automation in School Accounting," American School Board, (March 1961), pp. 17-19, 48.

Oakland Public Schools, Oakland, California where he is controller. This school system has 65,000 pupils in average daily attendance and employs approximately 4,500 employees, including part-time and temporary workers. To make the change, they had to prepare in excess of 60 separate programs involving more than 8,000 instructions to the computer. The transition took one and one-half years. In this system, the accounting responsibility rests with the data-processing staff, not with the accounting department. Job cost information, special detailed cost ledgers, budget, personnel information, general ledger control, expenditure ledger, and warehouse inventory control are prepared with the new data-processing machinery.

James T. Smith,[1] clerk-treasurer of Willoughby-Eastlake City School District, Willoughby, Ohio urges school districts to investigate automation because of the benefits which these machines offer. Employees are released from clerical work to perform more important functions of education and detailed information is more readily available. He was not certain that the installation of automation equipment would reduce school costs. This school district's enthusiastic adoption of automatic data processing machines is evident in that they developed a program to train technicians in data processing.

William M. Swisher,[2] director of construction and maintenance,

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[1]"Workable Ideas for School Businessmen," Nations Schools, (February 1962), p. 86.

[2]Ibid., p. 88.

Phoenix Union High Schools and College District maintains that the saving in labor costs which is inherent in data processing installations will be absorbed by the labor needed to prepare the data for the computers in the area of construction and maintenance.

A. F. O'Hearn,[1] director of purchases, Chicago Public Schools, claims that data processing procedures should be extended to the purchasing function.

Cost Accounting Literature

Cost accounting literature today is available only in periodical form and in small segmented portions of the various general accounting publications considered earlier in this chapter. Therefore, this section will survey recent periodical literature in the field of school cost accounting.

Among the authors who concern themselves with school cost accounting records, Gatje[2] forges ahead with an advocation of a system of cost accounts, and the allocation of indirect costs to product (direct) costs. His thesis is contained in the following chart:

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[1] Ibid., p. 92.

[2] George H. Gatje, "Let's Revise Our School Accounting System," The School Executive, (April 1955), p. 56.

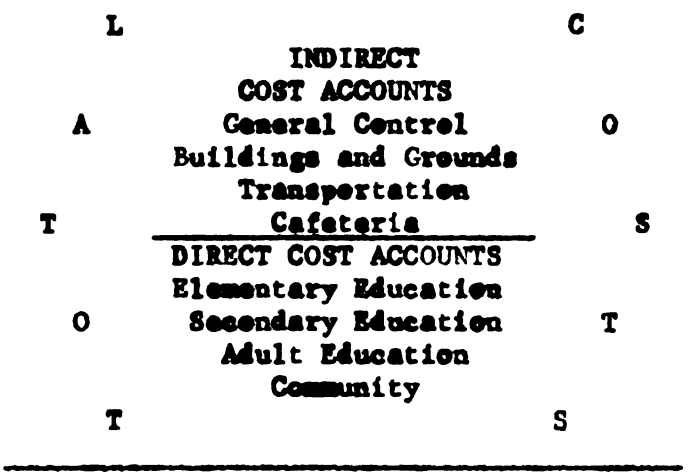

Figure 1. Gatje's allocation of costs.

Hill[1] states, "Cost data is significant, not in relation to profit making, but only in establishing and improving comparative levels of local operating economy and efficiency." Criteria for the selection of a specific type of equipment to meet a local situation is given by this author, and he provides comparative studies of acquisition costs with rental costs and comparative costs of typewriter-adding-machines with cash register and punch-card machines.

Analyzing school cafeteria costs is the study conducted by Pratt[2] at the Unified School District of San Jose, California. Comparative operating costs at thirty-one school cafeterias are arrived at through the use of 10-key printing calculators, an easy machine on which to train clerical employees.

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[1]Frederick W. Hill, "Machine Accounting, When and Why," American School Board, (March 1952), p. 40.

[2]Herman W. Pratt, "Cost Analysis for School Cafeteria," Systems for Educators, (September-October 1959), pp. 11-12.

Taylor[1] advocates machine accounting utilization for appropriations, revenues, payrolls, and accounts payable records. She states that most school districts of over 150 employees might well investigate possible economies through the mechanization of payroll and budgetary accounting procedures. She feels this is particularly true if encumbrance accounting records are maintained.

Conducting a study similar to that done by Taylor, as mentioned in the preceding paragraph, Bernath[2] in his doctoral dissertation submitted to the University of Washington, states that beneficial uses can be secured from machine payroll operations only if at least 216 employees are employed in school operations. He presents recommendations relative to costs, methods, and results of present machine and manual bookkeeping practices. He notes that the work volume should indicate that the machine will be used a minimum of 20% of the time before initial installation of a machine is contemplated.

Davies[3] advocates that the computation of per-square-foot or per-cubic-foot costs of buildings should be supplemented with area/use analyses or time/use analyses for proper cost determination.

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[1]Barbara Taylor, "Machine Accounting in Small School Systems," American School Board, (March 1954), pp. 47-48.

[2]Llewellyn Laurence Bernath, "Payroll Purchasing and Budgetary Control Procedures in First Class School Districts in Washington," (unpublished Ed.D. dissertation, University of Washington, 1957).

[3]William Davies, "Cost Analysis Should Consider Time as Well as Space," The School Executive, (October 1953), p. 56.

Summary

The literature indicates that there is a great deal of interest in school accounting by various groups and authors. The survey shows that the problems in school accounting are well known; that numerous individual solutions are offered; and that recommendations for improvements are rampant with authors.

The general accounting publications for school districts ingathered by the source of the literature appears as follows:

a. Governmental publications by Federal and state units.

b. Non-governmental publications by the Association of School Business Officials of United States and Canada and the American Institute of Certified Public Accountants.

c. One textbook on public school fund accounting.

d. Articles in various periodicals, such as American School Board, The Balance Sheet, Nations Schools, School Business Affairs, The School Executive, School Life, Systems for Educators, School and Community, etc.

Current interest in the aspects of general accounting problems is focused mainly on the following topics:

a. Adoption of general accounting terminology standardization.

b. Data processing machine installations.

c. Accounting for special funds.

Cost accounting literature is available only in periodical form and in sections of the various general accounting publications. In this

review of accounting literature, the general accounting material exceeded the cost accounting material by five-fold which is indicative of the paucity of cost accounting literature.

Interest in cost accounting centers on the following topics:

a. Automatic equipment for cost information processes.

b. Cost allocations.

c. Comparability of cost studies.

The survey of the literature indicated that there is a great deal of interest in school accounting by various groups and authors at the present time. However, less interest is evidenced by authors in cost accounting for school districts. The need for a comprehensive publication on cost accounting for school districts is apparent in this review of the literature.

CHAPTER III

STAGE I - COLLECTING AND REPORTING DATA REGARDING THE OPINIONS OF SCHOOL ADMINISTRATIVE PERSONNEL ON THE DESIRABILITY OF COST INFORMATION

In order for a school district to feel the need for cost studies, the volume of financial transactions should be large enough to cause a feeling of inadequacy with the general accounting records due to their collective rather than analytical nature. If the amounts in the account classifications become large, or if the volume of financial transactions is constantly increasing, it becomes desirable to determine

how and why these costs occur,

to which objectives they are related,

the reasonableness of these costs,

the cost curves for certain educational products,

the anticipatory costs of future educational aims,

how costs compare with other school districts or with historical costs,

the allocation of variable costs on an equitable basis, etc.

The importance of cost studies such as these to school district financial management was the basis for investigation in this study. The first stage of this study involved a survey to determine if school administrators made use of cost records, and if there is a felt need for such records by school district officials in selected districts in the United States. The survey

involved a mail questionnaire based on a stratified sample of school districts in the United States.

The Random Sample

Stratification of the sample according to states, and then counties, was decided in order to insure an unbiased sample. The following publications of the Office of Education were used to select the random sample:

Statistics of State School Systems: Organization, Staff, Pupils, and Finances - 1953-54.

Statistics of City School Systems: Staff, Pupils, and Finances - 1953-54.

Education Directory - 1958-59 - Counties and Cities.

The Office of Education divides the number of school districts in the United States into four geographical areas.

Table 1. Total school district population of 50 states and outlying parts of the United States.

Region	Total Population
Northeast	7,248
North Central	42,418
South	6,670
West	6,633
Outlying Parts of the United States	35
TOTAL	63,004

Schools not operating a school program and one-teacher schools are not included in the sampling of the total population. A school district should be of a sufficient size in order to have the necessary volume of financial transactions which would lend themselves to costing procedures before there is a need to amplify the general accounting records. There would be no need for a one-teacher school to consider the addition of cost records to those records which they are already required to maintain to comply with the law. Accordingly, schools not operating a school program and one-teacher schools are eliminated from the total population to arrive at the population used for sampling in the survey.

Table 2. Total population used in the survey.

Total School District Population of 50 States and Outlying Parts of the U. S.	Schools Operating No Program	One-Teacher Schools	Total Population From Which Sampling Was Drawn in the Survey
63,004	7,351	43,787	11,866

The random sample consisted of 2% (233 school districts) of the total population of 11,866 school districts due to time and cost limitations. The sample was stratified by states and by counties.

Stratification by states

Stratification by states equalled 20% of the total states, or 10 states, selected by counting every 5th state shown in the geographical

classifications on page 39 of Statistics of State School Systems: Organization, Staff, Pupils, and Finances - 1953-54 which happens to fall as follows:

Table 3. Stratification of sample by states.

Regions and States	Total Number of School Districts	Schools Operating No Program	One-Teacher Schools	State Population From Which Sampling Was Drawn in Survey
Northeast -				
New Jersey	558	28	12	518
North Central:				
Illinois	2,480	-	772	1,708
Minnesota	4,752	1,468	2,831	453
South Dakota	3,383	929	2,775	(321)
South:				
Florida	67	-	119	(52)
Mississippi	971	- *	1,088	(117)
Texas	2,045	92	193	1,760
			*No information available.	
West:				
California	1,973	36	410	1,527
Nevada	176	11	84	81
Wyoming	298	30	347	(79)
TOTAL	16,703	2,594	8,631	5,478

Selection of 233 school districts (due to a limitation of 17 county-unit school systems in Nevada) from the state stratification of 5,478 school districts equals 4.3% of the state population. As some school districts operate more than one one-teacher school, the number of one-teacher schools exceed the total number of school districts in the states of Florida and Wyoming in the preceding table.

The selection of state stratification was resolved due to the weight which should be accorded to state regulations governing types of schools. As state laws govern the type of school district accounting within their jurisdiction, it follows that if school district distribution in the United States were used without regard to state distribution whatever, the sample would be weighted in favor of certain types of state school districts as school districts are more populous in some states than in others. Therefore, the sample is drawn proportionately from each state listed in Table 3, i. e., 24 school districts from each state (except Nevada), which are selected on a random basis from the school districts listed in Education Directory - 1958-1959 - Counties and Cities.

Stratification by counties

The selection of 24 school districts within each of 10 states is further stratified by counties. For example, Illinois lists 102 counties; therefore, every 4th county listed in the Education Directory was selected. In each of these counties, one school district was selected by assigning numbers to the school districts within the county, and drawing these numbers at random. In Nevada, the county-unit system is in use and, consequently, the sample included the entire 17 counties in this state.

Mailed questionnaires were sent to a sample of 233 schools as shown in the listing in Appendix A. In sixteen school districts, two questionnaires had been mailed; one to the superintendent in charge of the elementary schools and one to the superintendent in charge of the secondary schools, making a total of 249 mailed questionnaires. Second

and third requests were mailed in some instances making a total of 385 mailed letters. The first of these requests was mailed in October 1959 and the last reply was received in February 1960.

The Questionnaire

The questionnaire explores the basic features of the accounting structure through questions which lead the respondent from an initial consideration of the general accounting records to an expression of an opinion on the desirability of cost accounting information. The reaction of school administrators to a sequential development of the importance of cost accounting records was the determining factor in the placement of each question.

The questionnaire was tested during the School Business Officials' Workshop held at Michigan State University during July 1959. Each point on the blank was discussed with members of a problems discussion group. The group unanimously approved the questionnaire. The questionnaire and covering letter, and a follow-up letter are shown in Appendix A.

Procedures for Statistical Analysis

The answers to the questions on the returned questionnaires were tabulated on IBM cards by the Michigan State University Computer Laboratory for processing on the MISTIC Computer. The writer test-checked the tabulation of the information shown on the IBM cards to the questionnaires through a 10% random check. No key punch errors were discovered. Based on this auditing procedure, it can be assumed that the cards were correctly punched.

The MISTIC Digital Computer computed the product moment correlation, the variance-covariances, means and standard deviations for each variable shown in Table 4 on the succeeding page, as programmed on Library Routine K11-M(C) dated July 20, 1961. The tape produced by the computer was processed through a printing machine which showed the correlation matrix (triangular) in the first column, the covariance matrix (triangular) in the second column, then the means and the standard deviations printed in two parallel columns. The triangular matrix produced by the printer showed the coefficient of correlation of variable 1 to 1; 1 to 2, 2 to 2; 1 to 3, 2 to 3, 3 to 3; etc. There was no attempt made to check the computational accuracy of the MISTIC. It is presumed that the technical staff at the Laboratory assumes this responsibility.

No analysis of the standard deviations, variances, or co-variances of the sample is contemplated. These statistical tools are not used in this study, except for their use in the computation of the coefficient of correlation, because it is felt by the writer that the time which would be spent on the expansive task of analyzing these measures of variability for the 23 variables included in the questionnaire is not warranted for the results which might be obtained.

The coding of the material on the questionnaire in 79 columns of 80 available columns on the IBM card assigned the following positions to the variables. These positions will be used to identify each variable in the study.

Table 4. Identification of variables used in the study.

Description of Variable	Position
Elementary schools - Number of schools	1
Elementary schools - Number of teachers	2
Secondary schools - Number of schools	3
Secondary schools - Number of teachers	4
Community colleges - Number of schools	5
Community colleges - Number of teachers	6
Elementary and secondary - Number of schools	7
Elementary and secondary - Number of teachers	8
Elementary, secondary, and community college - Number of schools	9
Elementary, secondary, and community college - Number of teachers	10
Secondary and community college - Number of schools	11
Secondary and community college - Number of teachers	12
Average daily enrollment	13
Annual per capita costs	14
Number of general accounting records in use	15
Number of cost accounting records in use	16
Types of mechanical equipment available	17
Number of employees assigned to duties of a bookkeeping nature	18
Types of methods used for averaging expenditures	19
Questions:	
1. Do you have cost approximations on the teaching of certain fundamental subjects (such as spelling, handwriting, physics, etc.) to each student in your system?	20
2. Do you have cost approximations on the costs of non-teaching items (such as study hall supervision, library services, guidance, etc.) to each student in your system?	21
3. Do you have your employees (administrative, instructional, clerical, custodial, etc.) keep time reports on <u>all</u> time worked by them?	22
4. Have you ever felt that information of the above type would be useful in discussions of school expenses with P. T. A., faculty, or citizens' groups?	23

Due to the limitation of 80 columns on the IBM card, a "yes" answer was indicated by the number "1"; a "no" answer was indicated by the number "2" on each of the last four questions. Thus, the computer showed the coefficient of correlation of all of the variables in the survey with the predominating answer to the last four questions. These predominating answers are important in the discussions on the significance of the coefficients of correlation between the variables which is presented in the section on findings. The predominance of either answer to the interrogative variables is shown in the following table.

Table 5. Predominance of affirmative and negative answers to interrogative variables.

Variable	Answers and Percentages				Predominating Answer
	Total	Yes	No	No Response	
20	180 100.0%	5 2.8%	171 95.0%	4 2.2%	No
21	180 100.0%	15 8.3%	161 89.5%	4 2.2%	No
22	180 100.0%	27 15.0%	147 81.7%	6 3.3%	No
23	180 100.0%	94 52.2%	74 41.1%	12 6.7%	Yes

Coefficient of correlation

"Correlation may be defined as the amount of relationship between paired facts or of the tendency of two or more variables, or attributes, to concomitant variation."[1] If the correlation is positive, then if one of the variables increases, so does the other; if the correlation is negative, then if one of the variables increases, the other variable decreases. If they increase together, the measure is shown as +1.00 for perfect positive relationship through .00 for none or pure chance; if one variable increases as the other decreases, this can be shown as -1.00 for perfect negative relationship. The simplest form for showing the coefficient of correlation is:[2]

$$r = \frac{\Sigma xy}{N \sigma_x \sigma_y}$$

when

r means coefficient of correlation

Σ means the sum of (Greek symbol)

x means the deviations of x variable from its mean

y means the deviations of y variable from its mean

σ_x means standard deviation of x variable

σ_y means standard deviation of y variable

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[1] C. W. Odell, An Introduction to Educational Statistics, (New York: Prentice-Hall, Inc., 1946), p. 104.

[2] Ibid., p. 107.

The symbol r is sometimes called "coefficient of linear correlation"[1] or Pearson r after its author, Karl Pearson.

The Michigan State University Computer Laboratory describes the following formula in its instructional material for the library routine which was used in this study:[2]

$$r_{xy} = \frac{\Sigma (X - \bar{X})(Y - \bar{Y})}{\left[\Sigma (X - \bar{X})^2 \; \Sigma (Y - \bar{Y})^2\right]^{1/2}}$$

when

r_{xy} means the product moment correlation coefficient

Σ means the sum of (Greek symbol)

X means a gross score or measure of a variable

Y means a gross score or measure of a variable

$\bar{X}$ means the mean of a sample

$\bar{Y}$ means the mean of a sample

1/2 means square root

In machine work for computational convenience, the formula is changed to show gross scores instead of the deviations because there is no need to keep the numbers small and rounding errors in division and square root are performed as late as possible in the process, thus, the MISTIC Computer used the following formula:

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[1]Helen M. Walker and Joseph Lev, Statistical Inference, (New York: Henry Holt and Company, 1953), p. 233.

[2]Ibid., p. 233.

$$r_{xy} = \frac{s\,\Sigma XY - \Sigma X \Sigma Y}{\left(\left[s\Sigma X^2 - (\Sigma X)^2 \right] \left[s\Sigma Y^2 - (\Sigma Y)^2 \right] \right)^{1/2}}$$

when

r_{xy} means the product moment correlation coefficient

s means the sample size

Σ means the sum of (Greek symbol)

X means gross score or measure of a variable

Y means gross score or measure of a variable

1/2 means square root

Sampling errors

Generally, it can be assumed that the distribution of random errors has a negligible effect if the sample is large (that is, the positive and negative errors tend to balance each other). A large sample occurs when the number of cases in a sample is 30 or more.[1] As the number of cases in this survey is 180, the following formula may be used to find the standard error:[2]

$$\sigma_r = \frac{1}{(N-1)^{1/2}}$$

when

σ means standard error
r means coefficient of correlation
1/2 means square root
N means number of cases in a sample

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[1] Ibid., p. 251.

[2] Ibid., p. 252.

thus,

$$\sigma' = \frac{1}{(180-1)^{1/2}}$$

$$= \frac{1}{(179)^{1/2}}$$

$$= \frac{1}{13.4}$$

$$= .0746$$

If the true standard error in the population is .00, then the standard error in this study due to random errors is .0746, indicating that the stated values of the coefficients of correlation obtained in this study are within .0746 of their true value. For example, dividing the coefficient of correlation of Variable 23 to Variable 22, which is positive .1989 (according to the findings), by .0746 gives 2.67, the value of the coefficient in terms of its standard error. Reference to a table of normal curve[1] showing heights, areas, and corresponding ratios of areas of a normal distribution corresponding to standard deviation or error units indicates that the chances are about 263 to 1 that a value of positive .1989 or more would not be obtained.

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[1]Odell, op. cit., p. 259.

The Findings

The results of the survey are presented as: (1) interpretative considerations, (2) summarizations, and (3) statistical analyses. Supplementary material includes a follow-up study, a report of personal interviews, and an examination of the interrelations of the variables in this study as a source for answers to pertinent questions in the field of school district accounting.

Interpretative considerations

In order for the reader to view the findings in their true perspective, it is necessary to show: (1) the weight of the various school district sizes sampled in the survey, and (2) the effect of the computation of the means on the resulting computation of the coefficients of correlation by the MISTIC Computer.

Weight of the various school district sizes sampled in the survey. The questionnaires which were returned by the 174 school districts were summarized by city population groupings to indicate which population group has the greatest determinate weight in the results of the survey. Table 6 on the succeeding page shows that approximately 55% of the school districts (exclusive of county-units) which cooperated in the survey represent population groups of less than 5,000 inhabitants; approximately 75% represent city populations of less than 10,000 inhabitants.

Table 6. Various school district sizes sampled in the survey.

Regions and States	Total	City Population					
		Less than 2,500	2,500 to 4,999	5,000 to 9,999	10,000 to 24,999	25,000 to 99,999	100,000 or Over
Northeast -							
New Jersey	14	-	7	4	3	-	-
North Central:							
Illinois	20	3	4	8	2	2	1
Minnesota	23	2	8	6	5	2	-
South Dakota	15	9	3	-	2	1	-
South:							
Florida		(16 county-units not included)					
Mississippi	13	7	4	-	-	2	-
Texas	18	2	5	7	3	-	1
West:							
California	19	3	6	2	5	2	1
Nevada		(14 county-units not included)					
Wyoming	22	5	11	1	4	1	-
TOTAL	144	31	48	28	24	10	3
PER CENT OF TOTAL	100.00%	21.53%	33.33%	19.44%	16.67%	6.94%	2.09%

Note: 30 questionnaires from county-units are not included.

Effect of the computation of the means on the resulting computation of the coefficients of correlation by the MISTIC Computer. The means (averages) computed by the MISTIC Computer are lower in all cases because the computer used the total number of returned questionnaires (180) as the divisor without taking into account those cases where no response was indicated. Technically, with standard programming there is no other method available to the researcher for computing means with the use of the electronic machine.

The averages shown by the MISTIC Computer and the averages developed by the writer appear in Table 7. Based on the evidence, it may be assumed that all the coefficients of correlation reported in this study are lower than actual.

Table 7. Comparison of averages computed by the MISTIC Computer and by the writer of selected items on the questionnaire.

Item	Average Computed by: MISTIC	Writer	Number of Questionnaires Bearing No Response
Average daily enrollment	4,165	4,322	7
Annual per capita costs	$345.60	$358.91	12
Number of general accounting records maintained by reporting units	8	9	3
Number of cost accounting records maintained by reporting units	2	3	34
Types of mechanical equipment available	2	2	1
Number of employees assigned to duties of a bookkeeping nature	3	4	7

Summarizations

Summaries of the answers to the questions by respondents participating in the survey appear in Tables 8 through 13. The items summarized include number of replies returned, types of educational programs offered by the sample, general accounting records used by reporting school districts, cost accounting records in use by reporting school districts, methods of averaging expenditures, and types of mechanical equipment used by the respondents. Tabulation of the affirmative and negative answers to the last four questions on the questionnaire is shown in Table 5. Comments placed on the questionnaires are classified affirmatively and negatively with respect to the desirability of cost information and are identified by states only.

Some errors and inaccuracies by the respondents in completing the questionnaire became obvious to the writer during the compilation of the summary figures. Some of the errors probably arose from inadequate knowledge by the respondents relative to accounting terminology and accounting records. The questionnaires were partially completed in some cases. It is felt by the writer that portions were left incomplete because the respondents did not have the figures available or they were not able to develop them. Gross errors were completely thrown out and not used in any way. Instances of gross errors occurred in such cases as the reporting of the annual per capita costs at $6099 in a California school district, $5.00 in an Illinois school district, and $2.79 in a Florida district.

There was cooperativeness and interest shown on the part of the respondents in the returning of the questionnaires and in the completing of the detailed questions. Many of the respondents noted that they were looking with interest toward the final results of the survey. In all cases, the questionnaires had been sent to the superintendent of school in the school districts and to the county superintendent of schools where the county-unit system was in use. However, answers were received from individuals with a wide range of title descriptions, viz., clerk, director of research, county superintendent, director of business affairs, secretary to superintendent, business manager, general supervisor, superintendent, bookkeeper, district secretary, etc. The requests, replies, and per cent of replies returned are shown in Table 8.

Table 8. Requests, replies, and per cent of replies returned.

Regions and States		Number of Requests	Number of Replies Returned	Per cent of Replies Returned
Northeast - New Jersey		24	14	58.3%
North Central:	Illinois	24	20	83.3
	Minnesota	24	23	95.8
	South Dakota	24	15	62.5
South:	Florida	24	16	66.7
	Mississippi	24	13	54.2
	Texas	24	18	75.0
West:	California	24	19	79.2
	Nevada	17	14	82.4
	Wyoming	24	22	91.7
TOTAL		233	174	74.6%

Tabulation of the 180 questionnaires from the printed IBM listing of the information received from the 174 participating school districts disclosed that these districts offer the educational programs shown in Table 9. The information is given in the order shown on the questionnaire.

Table 9. Types of educational programs and number of schools and teachers in these classifications.

Type of Educational Program	Number of Classifications		Number of Schools		Number of Teachers	
Elementary only*	49	23.3%	523	28.1%	4,487	14.1%
Secondary only	29	13.4	64	3.4	2,271	7.1
Community college only	1	.5	2	.1	29	.1
Elementary and secondary	119	56.4	989	53.3	18,342	57.6
Elementary, secondary and community college*	11	5.4	274	14.8	6,459	20.2
Secondary and community college	2	1.0	6	.3	265	.9
TOTAL	211	100.0%	1,858	100.0%	31,853	100.0%

* One school district is listed in the number of schools but no figure was given for the number of teachers.

The daily average enrollment (either average daily attendance or average daily membership) for 173 returns showed a total of 747,705 pupils or an average of 4,322 pupils per reporting unit. Seven of the questionnaires failed to show this information.

Annual per capita costs for 158 reporting units showed a total of $56,707.52 or an average of $358.91 for the school districts reporting this figure. Twelve questionnaires did not show this information. Per capita costs ranged from a low of $45 for a "separate" school district in Mississippi to a high of $693.19 in a New Jersey township school district.

The general accounting records used by reporting schools are shown in Table 10. The average number of records maintained by each unit is approximately 9. Notations on six of the returns indicated that seven of the school records were kept in the county offices for the school district.

Table 10. General accounting records used by reporting units.

Type of Record	Number	Per cent
Voucher registers or disbursement ledgers	169	11.2%
Cash receipts journals	163	10.8
School lunch records	161	10.7
Payroll journals	150	10.0
Student activities records	145	9.6
Individual earnings records	142	9.5
Petty cash records	126	8.3
Revenue ledgers	102	6.7
Bond registers	98	6.5
Appropriation or encumbrance and expense ledgers	91	6.0
Insurance registers	83	5.5
Property ledgers	53	3.5
Note registers	17	1.1
Other (general ledger, vendor control ledger, etc.)	10	.6
TOTAL	1,510	100.0%

Cost accounting records in use by 146 reporting units total only 421 records as shown by Table 11. The average number of cost accounting records used by each unit is approximately 3.

Table 11. Cost accounting records used by reporting units.

Type of Record	Number	Per cent
Transportation cost analyses	129	30.7%
Payroll allocation schedules	116	27.6
Cafeteria costs analyses	94	22.3
Expense allocation schedules	55	13.1
Job cost ledgers	24	5.7
Other (instruction, cost per school, attendance)	3	.6
TOTAL	421	100.0%

School employees in the 173 reporting units totaled 625 persons, which indicates approximately 4 employees for each unit. These employees kept a total of 1,931 bookkeeping records. Maintenance of certain bookkeeping records involves more time than is spent on other bookkeeping records, so there is no basis for any statement involving the number of records kept by each employee.

The methods of averaging expenditures in use by 163 reporting school units is shown in Table 12. Seventeen units, or 9.4%, did not respond to this question.

Table 12. Methods of averaging expenditures.

Method Used	Number of Respondents	Per cent
Per pupil units	143	79.5%
Weighted elementary classroom units	6	3.3
Grade or course units	4	2.2
Other	10	5.6
TOTAL REPLIES	163	90.6%
No response	17	9.4
TOTAL QUESTIONNAIRES	180	100.0%

A total of 383 types of mechanical equipment was reported by 179 respondents as shown by Table 13. The tabulation discloses that an average of 2 types of mechanical equipment was available to the school districts.

Table 13. Types of mechanical equipment used by reporting units.

Type of Machine	Number of Respondents	Per cent
Adding machines	176	46.0%
Calculating machines	122	31.9
Bookkeeping machines	63	16.4
Data processing equipment	10	2.6
Other (Verifax, Thermofax, Addressograph, etc.)	12	3.1
TOTAL	383	100.0%

No request was made to indicate the number of each type of equipment available to each reporting unit. Only those machines which could be utilized in accounting work were listed in the questionnaire. No attempt was made to request information on other types of office equipment, such as typewriters, mimeographs, spirit duplicators, etc. Districts which reported the availability of data processing equipment were:

San Diego, California
Corpus Christi, Texas
Clark County, Nevada
Fort Myers, Florida
Waynesboro, Mississippi
Santa Ana, California
Austin, Minnesota
Millburn Township, New Jersey
Broward County, Florida
Mission, South Dakota

Twenty-seven respondents placed comments on the questionnaires indicating affirmatively or negatively their reaction to the desirability of cost studies. These comments are identified by states only.

Affirmative comments. The affirmative comments were as follows:

> This information would be useful to the superintendent and board of education in future plans.--Illinois.
>
> We prepare special subject area reports from time to time for the purpose of re-evaluating our services.--Texas.
>
> Probably, if understood.--California.
>
> Occasionally.--California.
>
> We are gradually going to more breakdowns.--Illinois.
>
> We are now involved in changing our accounting practices with the idea of incorporating cost accounting records. I will be interested in the results of your survey.--Illinois.
>
> Sufficient account classifications have been established to develop cost approximations in general areas of instruction, such as science, library, English, etc.--California.

Whenever information is needed, our records make it possible to obtain cost analyses.--Illinois.

We do estimates for discussion purposes from time to time in these areas.--Illinois.

I have often felt the need for a more detailed accounting so that breakdown costs could be more easily determined.--Minnesota.

Negative comments. The negative comments were as follows:

Public cannot profit by such detailed information in comparison with the cost.--Florida.

Some things are not practical because of school volume limitations.--Mississippi.

Inadequate clerical force prevents cost studies except in general classifications: administrative, instructional, high school, and elementary.--Mississippi.

We have too few people to do as much cost accounting as we would like and actually need to do.--Texas.

Limited bookkeeping and clerical help necessitates elimination of many desirable types of information. Trained personnel unavailable.--Texas.

The time factor eliminates much of the above data. We encumber against budget appropriations for each department in each school, a total of 1,000 different categories.--California.

Even though the information would be helpful at certain times, I don't think it would justify the expense of obtaining it.--Nevada.

Would be quite time consuming and too expensive for our analysis.--Nevada.

(Answer to last question.) But not worth expense of compilation.--Wyoming.

The self-contained classroom, variances in class size, differences in salary schedules, etc., would make such information of little value in its practical application.--Illinois.

Our schools are organized upon too small an enrollment basis (population sparse and topographically hilly) so that personnel and efficient accounting procedures (and machines) are difficult to procure.--Illinois.

I do not believe that the data proposed would be accurate enough to justify the time and cost.--Minnesota.

Too difficult to keep. Personnel would object to keeping this record.--New Jersey.

Above analyses (are) based on some business practices which cannot be correlated to school performances or job distributions.--New Jersey.

This blank does not fit a prairie state or rural community of the kind I supervise.--South Dakota.

Every report of a cost analysis nature is started to fit the needs of the moment. So many relevant factors occur in each cost analysis that to do an honest job of reporting is pretty nearly impossible. Mostly they are just time consuming.--Minnesota.

Our growth has been so rapid (during) the past few years (that) we do well to keep up with routine; the above would be valuable to have but we haven't (the) time (nor) money to get it.--California.

The comments are revealing as to the problems which confront school administrators. Their enlightening comments show that they are giving thought to the various aspects of financial management.

The last summarization concerns the number of days in the school session in the selected school districts. The number of days in session was requested from the respondents to ascertain whether a normal school period was in force in these school districts. It was determined that the number of days varied from a low of 170 to a high of 190, both of these extremes being in South Dakota.

In conclusion, these summarizations present a composite picture of the types and characteristics of the school districts included in the sample. The opinions of personnel in school districts of varying size and educational program types regarding the value of cost records are statistically analyzed in the next section.

Statistical analyses

The statistical analysis of the information on the questionnaires moves from the most important information received from the respondents to subordinate information. As mentioned in the section on statistical procedures, each item on the questionnaire is considered a variable and the coefficient of correlation for each variable was computed by the MISTIC Computer at Michigan State University Computer Laboratory.

The four most significant relationships in this study are those of Variables 23, 22, 21, and 20, respectively (as defined in Table 4), to the other variables. These relationships will be considered at the beginning of our statistical analysis. It is to the reader's advantage to use Table 4 as a reference in reading this section. Also, the reader should keep in mind that the purpose of this statistical analysis is to determine the opinions of school personnel toward cost studies and to find the environmental state for the expression of the affirmative and negative opinions. As the succeeding material is based on the significance of the coefficients of correlation between variables, it is necessary for the reader to understand that these correlations suggest relationships but do not show causations.

It should be mentioned that there are errors in the gross scores of these variables due to several incomplete (no response) answers to the questions by the respondents. Consequently, the values shown may be lower than the actual or true values. (See Table 7).

Analysis of variable 23--Question: Have you ever felt that information of the above type would be useful in discussions of school expenses with P. T. A., faculty, or citizens' groups?

The correlations suggest that school districts which already require proper time records from their employees and have developed cost analyses on teaching and non-teaching items are inclined to feel that cost records are important. As the number of general accounting records and types of mechanical equipment used increases, the favorableness of the respondents toward costing procedures increases.

As the average daily enrollment and annual per capita costs increases, the favorableness of the respondents towards costing methods decreases. This is due to the unfavorable disposition toward costing procedures of those school districts which operate secondary schools only, and from a lesser number of school districts which operate the three levels of elementary, secondary, and community colleges. The amount of work involved in obtaining cost studies in these types of schools is much greater than that to be done in elementary schools. On the other hand, respondents from school districts operating elementary school only, community colleges only, and elementary and secondary schools, and secondary and community colleges were favorably disposed toward the use of cost accounting data.

As the number of cost accounting records in use, and the number of bookkeeping employees increases, the favorableness of the respondents towards costing methods decreases. This suggests a resistance by the respondents to the addition of bookkeeping employees for the purpose of cost studies. The positive and negative correlations affecting Variable 23 are given in Table 14.

Table 14. Coefficients of correlation of variable 23 with other variables.

Variable	Coefficient of Correlation	Description
	POSITIVE	
1	.0103	Number of elementary schools
5	.0000	Number of community colleges only
7	.0066	Number of elementary and secondary schools
8	.0484	Number of teachers in elementary and secondary schools
11	.0600	Number of secondary and community colleges
12	.0545	Number of teachers in secondary and community colleges
15	.0291	Number of general accounting records in use
17	.0214	Types of mechanical equipment available
19	.0078	Methods used for averaging expenditures
20	.1856	Have cost approximations on fundamental subjects
21	.1860	Have cost approximations on non-teaching items
22	.1989	Employees keep time records on all time worked
	NEGATIVE	
2	.0241	Number of teachers in elementary schools
3	.0320	Number of secondary schools
4	.0427	Number of teachers in secondary schools
6	.0430	Number of teachers in community colleges
9	.0468	Number of elementary, secondary schools and community colleges
10	.0486	Number of teachers in elementary, secondary schools and community colleges.
13	.0276	Average daily enrollment
14	.0133	Annual per capita costs
16	.0001	Number of cost accounting records
18	.0321	Number of bookkeeping employees

Analysis of variable 22--Question: Do you have your employees (administrative, instructional, clerical, custodial, etc.) keep time reports on all time worked by them?

Negative answers (81.7%) by the respondents predominate in answer to this question. The respondents also strongly indicated that they did not use cost approximations. This fact is confirmed by the strong positive correlations of Variables 20 and 21, which inquire about the use of cost information, with Variable 23.

Community colleges and the multiple units of elementary and secondary schools show positive correlations indicating the unfavorable attitude of these units toward the use of time reports. Also, as the annual per capita costs increase, the use of time reports by school districts in this sample decreases. Time reports are favored by districts having elementary schools only, secondary schools only, the multiple units of elementary, secondary, and community colleges, and secondary and community colleges.

The more advantageous record-keeping positions of those school districts which have increasing availability of bookkeeping personnel, mechanical equipment, and accounting records, as well as larger average daily enrollments, show a favorable attitude toward the use of time reports. The positive and negative correlations affecting Variable 22 are given in Table 15.

Table 15. Coefficients of correlation of variable 22 with other variables.

Variable	Coefficient of Correlation	Description
	POSITIVE	
5	.0000	Number of community colleges
6	.0333	Number of teachers in community colleges
7	.0669	Number of elementary and secondary schools
8	.0881	Number of teachers in elementary and secondary schools
14	.0744	Annual per capita costs
19	.0528	Methods used for averaging expenditures
20	.4347	Have cost approximations on fundamental subjects
21	.3188	Have cost approximations on non-teaching items
	NEGATIVE	
1	.1002	Number of elementary schools
2	.1008	Number of teachers in elementary schools
3	.1419	Number of secondary schools
4	.1269	Number of teachers in secondary schools
9	.1565	Number of elementary, secondary, and community colleges
10	.1534	Number of teachers in elementary, secondary, and community colleges
11	.0833	Number of secondary and community colleges
12	.0609	Number of teachers in secondary and community colleges
13	.1091	Average daily enrollment
15	.0195	Number of general accounting records in use
16	.1685	Number of cost accounting records in use
17	.0383	Types of mechanical equipment available
18	.1551	Number of employees assigned to duties of a bookkeeping nature

Analyses of variables 20 and 21--Questions: Do you have cost approximations on the teaching of certain fundamental subjects (such as spelling, handwriting, physics, etc.) to each student in your system? Do you have cost approximations on the costs of non-teaching items (such as study hall supervision, library services, guidance, etc.) to each student in your system?

Negative responses to these two questions (95.0% and 89.5%, respectively) predominate the answers to these questions. A strong positive correlation of .7105, as shown in Table 16, between these two questions enforces the reliability of the coefficients of correlation of these two similar measures to the other variables. A comparison of the correlations shows that positive and negative coefficients appear for the same variables in relation to these two questions with the exception of the variable of average daily enrollment.

Negative correlations appear between cost approximations used by these school districts and the two variables inquiring about the number of cost accounting records in use and the types of mechanical equipment available. This was expected due to the predominance of "no" answers to these two questions which, conversely, indicates a positive correlation with the "yes" answers; that is, a favorable correlation exists between the use of cost approximations and the use of cost accounting records and mechanical equipment.

School districts having multiple units of elementary and secondary schools, and elementary, secondary, and community colleges are favorably disposed toward the use of cost information for both fundamental and non-teaching items. The correlations affecting Variables 20 and 21 are given in Table 16.

Table 16. Coefficients of correlation of variables 20 and 21 with other variables.

Variable	Coefficient of correlation - Variables 20	21	Description
	POSITIVE		
1	.0548	.0546	Number of elementary schools
2	.0277	.0135	Number of teachers in elementary schools
3	.0109	.0306	Number of secondary schools
4	.0059	.0174	Number of teachers in secondary schools
5	.0000	.0000	Number of community colleges
6	.0171	.0242	Number of teachers in community colleges
11	.0281	.0399	Number of secondary and community colleges
12	.0303	.0430	Number of teachers in secondary and community colleges
13	-	.0026	Average daily enrollment
14	.0440	.0666	Annual per capita costs
15	.0198	.0544	Number of general accounting records in use
18	.0336	.0496	Number of employees assigned to duties of a bookkeeping nature
19	.0998	.0583	Methods used for averaging expenditures
20	1.0000	.7105	Have cost approximations on fundamental subjects
	NEGATIVE		
7	.0914	.0593	Number of elementary and secondary schools
8	.0456	.0136	Number of teachers in elementary and secondary schools
9	.0440	.0194	Number of elementary, secondary, and community colleges
10	.0373	.0167	Number of teachers in elementary, secondary, and community colleges
13	.0351	-	Average daily enrollment
16	.0531	.0541	Number of cost accounting records in use
17	.0400	.0478	Types of mechanical equipment available

Analysis of variable 13--The average daily enrollment of the units included in the study.

The correlations showed all positive relationships which is a natural consequence. As may be expected, the largest enrollments are in school units having elementary, secondary, and community colleges. Table 17 indicates the areas of high and low average daily enrollments in the public schools.

Table 17. Coefficients of correlation of variable 13 with other variables

Variable	Coefficient of Correlation	Description
	POSITIVE	
1	.1590	Number of elementary schools
2	.3382	Number of teachers in elementary schools
3	.3072	Number of secondary schools
4	.3521	Number of teachers in secondary schools
5	.0000	Number of community colleges
6	.0682	Number of teachers in community colleges
7	.4059	Number of elementary and secondary schools
8	.4788	Number of teachers in elementary and secondary schools
9	.7238	Number of elementary, secondary, and community colleges
10	.7363	Number of teachers in elementary, secondary, and community colleges
11	.0379	Number of secondary and community colleges
12	.0375	Number of teachers in secondary and community colleges

Analysis of variable 14--Annual per capita costs

The correlations shown in Table 18 indicate that annual per capita costs decrease most rapidly with the addition of elementary schools and decrease least rapidly with the addition of secondary schools. This finding coincides with the general assumption that per capita costs are apt to be lower in elementary schools than in secondary schools. Also, there is the indication that annual per capita costs decrease with increases in average daily enrollment which shows that costs are apt to be less in school districts with multiple units of elementary, secondary, and community colleges where the enrollments are the largest. In this analysis, Variable 5, the number of community colleges, was the only variable to show a positive relationship. This correlation appeared as .0000 indicating pure chance.

Table 18. Coefficients of correlation of variable 14 with other variables.

Variable	Coefficient of Correlation	Description
	NEGATIVE	
1	.0517	Number of elementary schools
2	.0009	Number of teachers in elementary schools
3	.0148	Number of secondary schools
4	.0157	Number of teachers in secondary schools
6	.0117	Number of teachers in community colleges
7	.0420	Number of elementary and secondary schools
8	.0323	Number of teachers in elementary and secondary schools
9	.0220	Number of elementary, secondary, and community colleges
10	.0084	Number of teachers in elementary, secondary, and community colleges
11	.0457	Number of secondary and community colleges
12	.0346	Number of teachers in secondary and community colleges
13	.0285	Average daily enrollment

Analyses of variables 15 and 16--Number of general accounting records and cost accounting records in use

Due to the similarity of these two variables, their correlations with the other variables will be presented at the same time. A strong positive correlation of .4477 between Variable 15 and 16 is a natural consequence resulting from the interdependence of general and cost accounting records. Therefore, this finding points out the reliability of the coefficients of correlation of these two similar variables to the other variables in the study.

The positive correlation of Variable 15, the number of general accounting records in use, with the other variables is stronger than that of Variable 16, the number of cost accounting records in use, in every case except in school districts with multiple units of elementary, secondary, and community colleges. Evidently, school districts with these multiple units employ cost accounting records to a larger extent than the use of general accounting records. The number of accounting records in use decreases as the number of elementary schools increases indicating the unfavorable disposition of these school districts towards the use of both types of accounting records. As average daily enrollment increases, the use of all types of accounting records increases which is a consequence of larger enrollments. Also, annual per capita costs decrease as the number of accounting records increase which may be an indication of the managerial efficiency present in a school district which makes considerable use of accounting records.

As a conclusion, the correlations show the wider use of general

accounting records as compared with the use of cost accounting records. The positive and negative correlations affecting Variables 15 and 16 are given in Table 19.

Table 19. Coefficients of correlation of variables 15 and 16 with other variables.

Variable	Coefficient of Correlation - Variables 15	16	Description
	POSITIVE		
2	.1100	.0230	Number of teachers in elementary schools
3	.1009	.0432	Number of secondary schools
4	.1357	.0210	Number of teachers in secondary schools
5	.0000	.0000	Number of community colleges
7	.1932	.1041	Number of elementary and secondary schools
8	.1937	.0987	Number of teachers in secondary and elementary schools
9	.1676	.1887	Number of elementary, secondary, and community colleges
10	.1562	.1882	Number of teachers in elementary, secondary and community colleges
11	.0819	.0574	Number of secondary and community colleges
12	.0894	.0392	Number of teachers in secondary and community colleges
13	.2869	.2335	Average daily enrollment
15	1.0000	.4477	Number of general accounting records in use
	NEGATIVE		
1	.2295	.0955	Number of elementary schools
6	.0103	.1084	Number of teachers in community colleges
14	.0837	.0071	Annual per capita costs

Analysis of variable 17--Types of mechanical equipment available

Table 20 shows that strong positive correlations appear between increases in the average daily enrollment and the number of general and cost accounting records in use, and the increase in the types of mechanical equipment available. These correlations are to be expected for these factors are concomitant. The school districts having the larger average daily enrollments (viz., the multiple units of elementary and secondary schools, and elementary, secondary, and community colleges) show strong correlations with increases in the types of mechanical equipment available. This tendency can be expected due to the need for more equipment as enrollment increases. Negative correlations appear in comparisons with Variable 1, the number of elementary schools, and Variable 14, annual per capita costs, as .0550 and .0398, respectively. This shows that elementary schools have less need for mechanical equipment and that schools with smaller annual per capita costs make greater use of mechanical equipment.

Table 20. Coefficients of correlation of variable 17 with other variables.

Variable	Coefficient of Correlation	Description
	POSITIVE	
2	.1891	Number of teachers in elementary schools
3	.1598	Number of secondary schools
4	.1979	Number of teachers in secondary schools
5	.0000	Number of community colleges
6	.1553	Number of teachers in community colleges
7	.2664	Number of elementary and secondary schools
8	.2552	Number of teachers in elementary and secondary schools
9	.2488	Number of elementary, secondary, and community colleges
10	.2309	Number of teachers in elementary, secondary and community colleges

Table 20. Continued

	POSITIVE, Continued	
11	.1441	Number of secondary and community colleges
12	.1331	Number of teachers in secondary and community colleges
13	.4066	Average daily enrollment
15	.3876	Number of general accounting records in use
16	.2875	Number of cost accounting records in use

Analysis of variable 18--Number of employees assigned to duties of a bookkeeping nature

Strong positive correlations appear between Variable 18 and average daily enrollment and the number of teachers in these school districts indicating that as enrollments and the number of teachers increase, the number of bookkeeping employees also increases. Positive correlations with Variables 15, number of general accounting records in use, and 17, types of mechanical equipment available, suggest the possibility that the larger use of general accounting records and mechanical equipment creates more jobs for these employees. It also appears that less of these employees are engaged in cost accounting work than in general accounting work.

A negative correlation of .0122 for Variable 6, number of teachers in community colleges, may indicate that community colleges employ less bookkeeping employees than other types of schools. The positive correlations affecting Variable 18 are shown in Table 21.

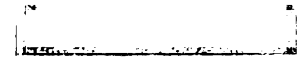
A negative correlation of .0021 for Variable 14, annual per capita costs, shows that as per capita costs decrease, the number of bookkeeping employees increases. This may be due to increased managerial efficiency.

Table 21. Coefficients of correlation of variable 18 with other variables.

Variable	Coefficient of Correlation	Description
	POSITIVE	
1	.3943	Number of elementary schools
2	.6647	Number of teachers in elementary schools
3	.6831	Number of secondary schools
4	.7375	Number of teachers in secondary schools
5	.0000	Number of community colleges
7	.1271	Number of elementary and secondary schools
8	.1860	Number of teachers in elementary and secondary schools
9	.4631	Number of elementary, secondary, and community colleges
10	.4841	Number of teachers in elementary, secondary and community colleges
11	.0109	Number of secondary and community colleges
12	.0065	Number of teachers in secondary and community colleges
13	.7763	Average daily enrollment
15	.2593	Number of general accounting records in use
16	.1431	Number of cost accounting records in use
17	.2971	Types of mechanical equipment available

Comment on statistical analyses

The conclusions which are derived from the statistical analyses of the foregoing data are treated in a special study which examines the interrelations of the variables as a source for answers to pertinent questions in the field of school district accounting. The examination is an outcome of this statistical analysis but because of its importance to the entire findings, it is treated in a topical section at the conclusion of the findings.



Follow-up study

Summarization of the results of the mailed questionnaire survey was sent to the 180 respondents from the participating school districts on August 15, 1962. This summarization encompassed the material shown in Table 5 and in Tables 9 through 13.

To test any changes in the opinions of these respondents, a postcard request was sent inquiring whether the respondent agreed or disagreed with the expression of the majority opinion to question #4 (see Table 5) as disclosed by the questionnaire survey, if he had or had not changed from his former opinion, and if the results of the survey were or were not beneficial to him in his work. The postcard request and the covering letter are shown in Appendix A.

Fifty-nine postcards were returned representing answers from 32.8% of the respondents. The last postcard was returned on October 26, 1962. Only one request for reply was mailed to these respondents. The returns from each state are shown in Table 22.

Table 22. Requests, returns, and per cent of postcards returned.

Regions and States	Number of Requests	Number of Postcards Returned	Per cent of Postcards Returned
Northeast - New Jersey	14	6	42.9%
North Central: Illinois	23	7	30.4
Minnesota	23	11	47.8
South Dakota	15	4	26.7
South: Florida	15	3	20.0
Mississippi	13	4	30.8
Texas	18	8	44.4
West: California	22	3	13.6
Nevada	14	5	35.7
Wyoming	23	8	34.8
TOTAL	180	59	32.8%

Findings of postcard survey. Forty-two (71.2%) of the respondents agreed with the majority opinion to question #4 as disclosed in the questionnaire survey. The answers to question #1 on the postcard appear in Table 23.

Table 23. Answers to question #1 in the postcard survey.

Question	Agree	Disagree	No Response
I (agree/disagree) with the expression of the majority opinion to question #4 as disclosed in the survey.	42	10	7

Twenty-three of the respondents to the postcard request were not the persons who had participated in the questionnaire survey. This change in respondents is evident in the number of no responses received to the second question on the postcard which is shown in Table 24.

Table 24. Answers to question #2 in the postcard survey.

Question	Have	Have Not	No Response
I (have/have not) changed from my former opinion.	9	26	24

Nine respondents changed their former opinions to agree with the majority opinion to question #4 as disclosed in the questionnaire survey. Of the 26 respondents who have not changed their former opinions, 5 disagreed and 21 agreed with the majority opinion to question #4.

The reaction of the respondents to the receipt of the survey results was sought. Their responses to an inquiry regarding the beneficial use to them of the survey material are shown in Table 25.

Table 25. Answers to question #3 in the postcard survey.

Question	Is	Is Not	No response
This material (is/is not) beneficial to me in my work.	33	9	17

The following comments appeared on the postcards received from respondents who indicated that knowledge of the results of the survey was of benefit to them. These comments are identified by states only.

Lack of clerical personnel is a problem with us.--Texas.

Only slightly.--Minnesota.

Material would be of benefit to instructional personnel in selling program.--Florida.

Sorry that I shall not be able to enjoy it more but this office will close forever - January 1, 1963.--Wyoming.

In a limited way applicable to our district. Salary schedules program, pupil-teacher ratio, etc., make dangerous comparison with other districts in any but a very general way.--Illinois.

Respondents who did not feel that the summary report benefited them, gave the following comments:

The time and cost of determining detailed cost breakdowns cannot be justified. We have to teach children. Also, extremely complicated.--New Jersey.

Our district--a county independent district--is so unique that that which applies to other districts varies greatly from procedures we must use.--South Dakota.

Figures are interesting, but not of much use to me. The circumstances vary so greatly for each school involved.--Illinois.

We have no P. T. A. for our high school; only parent-teacher conferences twice a year.--Illinois.

I was not employed by the school district at the time the original questionnaire was sent out so I do not appreciate the report as much as I would had I answered the questions myself.--Minnesota.

Respondents who were noncommital on the value of the report to them, gave the following comments:

> Your report was very detailed. I doubt if lay groups would understand fully the details; yet we administrators like it very much!--Minnesota.
>
> The statistics given are most interesting and I think I can see that finances are a great factor in most schools having interest in this information.--Mississippi.
>
> We are moving into more and more fields of breakdowns, such as these and find it valuable.--Texas.
>
> I appreciate this report. Cost procedures analysis is important or should be to any school administrator.--Texas.

In summary, the postcard requests reaffirmed the prevailing opinion of school administrators that cost information is useful to them. Nine respondents were influenced to agree with the majority opinion after receiving the results of the survey.

Personal interviews

Purposively, to acquire depth and meaning to the answers to the questionnaire used in the survey, the writer interviewed ten key personnel in school districts, either superintendents or those responsible for the accounting records. The school districts were selected by random sampling of districts in the states of Illinois, Michigan and Ohio. Selection of interviewees was limited to these three states due to the necessity of being within a reasonable traveling distance from the writer's residence.

Selection of the cities was based on the city school systems listed in Statistics of City School Systems: Staff, Pupils, and

Finances, 1953-54.[1] These city population groupings are shown in Table 26.

Table 26. City population groupings.

Groupings	Number of City School Systems
100,000 or more	100
25,000 to 99,999	387
10,000 to 24,999	826
5,000 to 9,999	1,061
2,500 to 4,999	1,401
TOTAL	3,775

In this publication, city school systems are described as "those public-school systems in cities of 2,500 population or more which are administered by a superintendent under the board of education as a school district operating coordinate with, or under, a municipal government."[2] As these city systems are also listed in state school systems even though they are subject to the additional municipal authority, it was felt by the writer that a better knowledge of the accounting setup may be obtained through personal interviews in at least ten of these city systems, independent of those cities which may have been selected under the mailed

[1]U. S., Department of Health, Education, and Welfare, Office of Education, Statistics of City School Systems: Staff, Pupils, and Finances - 1953-54, (Washington, D. C.: U. S. Government Printing Office, 1956).

[2]Ibid., p. 2.

questionnaire random sampling selection. The school districts in the three states mentioned were considered as the total population for the five population groupings used by the Office of Education. The number of cities in each population grouping, by states, is shown in Table 27.

Table 27. Number of cities in each population grouping, by states.

Population Grouping	Total Number of Cities	Number of Cities in		
		Illinois	Michigan	Ohio
100,000 or more	13	2	3	8
25,000 to 99,999	67	24	18	25
10,000 to 24,999	74	31	18	25
5,000 to 9,999	88	42	18	28
2,500 to 4,999	110	48	26	36
TOTAL	352	147	83	122

Random selections of the cities in these states were made by numbering the cities in each of the groupings and drawing two numbers from each group. The cities selected represent approximately 3% of the population groupings listed in these states, or approximately .3% of the total city school systems in the United States. The cities selected are shown in Table 28.

The data sheet which had been used for the mailed questionnaires served as the basis for interviewing. The interviews are reported in Appendix B. Letters requesting interviews were sent preceding the date of interview appointment.

Table 28. City school systems selected for personal interviews.

Population Grouping	Selection
100,000 or more	Akron, Ohio Columbus, Ohio
25,000 to 99,999	Bay City, Michigan Port Huron, Michigan
10,000 to 24,999	Chicago Heights, Illinois Mt. Vernon, Ohio
5,000 to 9,999	Bellevue, Ohio Maumee, Ohio
2,500 to 4,999	Marengo, Illinois Stickney, Illinois

Summary of personal interviews. The interviews with school officials lasted approximately an hour in each case. The interest in cost accounting records by interviewees is shown in Table 29.

Table 29. Opinions of interviewees regarding cost accounting records.

City School System	Opinions	
	Positive	Negative
Akron, Ohio		Not interested
Bay City, Michigan	Very interested	
Bellevue, Ohio	Very interested	
Chicago Heights, Illinois		Feel unnecessary
Columbus, Ohio	Already using	
Marengo, Illinois	Very interested	
Maumee, Ohio		Feel unnecessary
Mt. Vernon, Ohio	Very interested	
Port Huron, Michigan	Very interested	
Stickney, Illinois		Insufficient staff

The ratio of the number of school officials who are favorably inclined toward the use of cost records is almost in the same proportion as was disclosed by the mailed questionnaires.

It appeared to the writer that the personnel involved had preconceived ideas about the uses of cost accounting records before there was an opportunity to discuss the uses of cost studies in a school system. The staff position of the interviewee did not appear to have a bearing on his opinion. Rather, it might be conjectured, that the background, training, and experience of the interviewee influenced his attitude toward cost accounting records more than his present position. The number of clerical employees under the direction of the school official was not a decisive factor in the direction of his response, viz., the large school districts of Akron and Chicago Heights were negatively inclined toward the use of cost studies whereas Columbus and Bay City were affirmatively inclined.

It is the opinion of the writer that the enthusiasm which the interviewees had for the use of cost accounting records or their lack of interest had been developed previous to the interview. Generally, the interview did not last over an hour. This was a period of time too short to change the interviewee's attitude but sufficiently long to determine the school official's basic conception of the role of cost accounting. It appears to the writer that further study in the direction of ascertaining the basis of the attitude held by school officials could be undertaken.

Examination of the interrelations of the variables in this study as a source for answers to pertinent questions in the field of school district accounting

Answers to certain questions which are inherent and pertinent to this study are suggested by the relationships of the coefficients of correlation of the various variables. The answers suggested are based upon statistical analyses and related findings presented earlier, of which this presentation is an integral part.[1]

To what extent does school type influence the use of supplementary cost accounting records? The statistical findings suggest that the multiple school district units of elementary and secondary schools, and elementary, secondary, and community colleges are users of supplementary accounting records to a larger extent than school districts encompassing individual units of elementary schools, secondary schools, and community colleges.

To what extent does school enrollment size influence the use of supplementary accounting records? The correlation between the variables inquiring about the use of cost approximations for fundamental subjects and the average daily enrollment suggests that as the average daily enrollment decreases, the use of cost records decreases. Conversely, it suggests that the use of cost approximations for fundamental subjects increases as the average daily enrollment size increases.

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[1]Due to the limitation of 80 columns on an IBM card, a "yes" answer to Variables 20, 21, 22, and 23 was indicated by the number "1"; a "no" answer was indicated by the number "2" in the computational work. Therefore, the correlations to these four questions are based on the predominant "no" answers to Variables 20, 21, and 22, and the predominant "yes" answer to Variable 23. (See Tables 4 and 5).

The correlation between the variables relative to the use of cost approximations for non-teaching items and average daily enrollment suggests that as the average daily enrollment increases, the use of cost records decreases. This may be due to the determinate weight of the opinions of the many districts with elementary schools whose answers are included in the survey (see Table 9). As this question made specific reference to study hall supervision, library and guidance services, etc., the elementary school districts would not be able to answer this question affirmatively as these services are available primarily in secondary schools.

What influence does annual per capita cost of current expenditures of a school district exert on the desire to determine the costs of certain educational expenses? Correlations between the question relative to the use of cost approximations and the question relative to annual per capita costs suggests that as the per capita costs increase the use of cost studies decreases. This finding suggests that the less prosperous school districts are more intent on the use of cost studies or that possibly per capita costs are decreased through the use of cost records.

How extensively are cost accounting records utilized in school districts at the present time? Twenty affirmative answers and 332 negative answers to the two questions relative to the use of cost approximations on the questionnaire shows that approximately 92% of the respondents do not use cost studies.

Does the addition of more mechanical equipment and office personnel influence the amplification of accounting records? Tabulation of the replies indicated that the average school district had four bookkeeping employees and two types of mechanical equipment.

Correlations between the types of mechanical equipment available and the use of cost approximations suggests that any decrease in types of mechanical equipment creates a decrease in cost studies. Conversely, any increase in mechanical equipment available will increase the use of cost studies.

Correlations between the number of employees assigned to duties of a bookkeeping nature and the use of cost approximations suggests that as these employees increase in number, the use of cost studies decreases. This unusual phenomenon leads to two other questions: Are additional employees hired to work on general accounting records? If so, are school officials unfavorably disposed toward the use of employee time for cost studies?

A positive correlation of .2593 of Variable 18, the number of bookkeeping employees, to Variable 15, number of general accounting records in use, as compared with a positive correlation of .1431 of Variable 18 with Variable 16, number of cost accounting records in use, suggests an affirmative answer to the first question (see Table 21). Thus, the effect of hiring employees for general account record-keeping produces the negative effect on hiring additional employees to produce cost records. The material in this study does not provide an answer to the second question.

Is there a felt need by school administrators for the use of underlying cost records as an aid to managerial efficiency? Approximately 52% of the respondents felt that cost information would be useful to them in discussions of school expenses with interested groups. The follow-up study showed that at a later date the majority opinion was shared by approximately 57% of the respondents.

Those school districts which already had some cost studies showed a strong inclination toward cost information gathering as a managerial aid. Also, as a school district increases the types of mechanical equipment in use and the types of general accounting records in use, the correlations suggest that the school district has a propensity to increase its cost studies. Pertinent correlations suggest that the less prosperous school districts feel the need for cost studies more acutely, that school districts with cost accounting records already in use feel a greater need for further cost studies, and that multiple school units were more favorably inclined toward the use of cost studies than school districts encompassing individual units of elementary schools, secondary schools, and community colleges.

Summary

Based on the foregoing findings, it appears that a slight majority of the respondents felt that cost information would be useful in discussions of school expenses with interested groups. Those respondents who participated in the first questionnaire survey indicated

by approximately 52% that they were favorably disposed toward the development of cost studies. The school districts which already had some cost methods in use showed a strong affirmative viewpoint. The questionnaire survey indicated that as a school district increases the types of mechanical equipment in use and the types of general accounting records in use, it shows a propensity to increase its cost studies.

The follow-up postcard questionnaire showed a prevailing affirmative majority opinion as had been indicated in the earlier survey. Nine respondents were influenced to agree with the majority opinion after receiving the results of the survey, thus increasing the affirmative majority to approximately 57%.

Interviews with personnel in ten cities disclosed that six of the interviewees were favorably disposed toward the development of cost information in their school districts. This ratio of affirmative opinion by the interviewees is almost in the same proportion as was disclosed by the questionnaires.

It is the opinion of the writer that the personnel involved in this research study had preconceived ideas about the uses and desirability of cost accounting records based on an attitude nurtured by the background, training, and experience of each individual. The postcard questionnaire follow-up study showed that these attitudes may possibly be changed by dissemination of information on this topic. Further study in the direction of analyzing the attitudes held by school officials could be undertaken to determine the effect of

of training and knowledge of accounting on a school administrator's viewpoint with respect to the importance of cost accounting.

CHAPTER IV

STAGE II - ANALYSIS OF THE GENERAL ACCOUNTING FRAMEWORK

A school district works within a body of regulations imposed upon it by regulatory bodies. If the school district is to proceed with its desire to develop cost control methods, it is necessary to ascertain whether these regulatory provisions hamper the use of costing methods. Analysis of the general accounting framework, as recommended nationally by the Office of Education and statewide by the state departments of education, will be made on the following pages with respect to expenditure accounts to determine whether cost accounting records can be easily added to the general accounting framework.

Relationship of General Accounting Records and Cost Accounting Records

Accounting records and reports are the tools by which the school executive secures effective control over the funds and assets entrusted to his care by the school board and taxpayers. The accounting system is based on a suitable classification of accounts in which the detailed data from the books of original entry are sorted out and analyzed. The importance of a good classification of accounts from which reports may be developed in the easiest and quickest manner is apparent.

The classification of accounts should proceed from the general to the specific, that is, general groupings of items should be subdivided to an extent found necessary for the particular school unit. As an example, the amount of total payroll is important for cash purposes but if the payment is for different types of services (or expenses), such as instructional, custodial, etc., provision should be made in the classification of accounts for these specific subdivisions. If further subdivisions are desirable for cost control purposes, accounts for specific school buildings, departments, courses or units of study, etc., may be provided. It should be borne in mind, that the classification of accounts must be devised in such a way that information for both internal and external purposes can be secured with the least possible work.

The Committee on Cost Concepts and Standards of the American Accounting Association describes cost classifications as:[1]

> Cost is classified normally in terms of a managerial objective. Its presentation normally requires sub-classification. Such sub-classification may be according to functional lines, areas of responsibility, the nature of the cost elements, or some other useful breakdown. The appropriate sub-classification depends upon the uses to be made of the cost report.

It seems appropriate to point out the significance of the last quoted sentence. Each school unit needs to devise such sub-classifications that it will desire for its own purposes. The purposes of these cost

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[1]American Accounting Association, "Tentative Statement of Cost Concepts Underlying Reports for Management Purposes," The Accounting Review, (April 1956), p. 184.

records are determined by those in charge--the school administrators. Therefore, all individuals directly concerned with cost information should fully understand the results which are desired and the methods which will be used.

Summarily, a school district needs general accounting records to record the assets, liabilities, receipts, expenditures, and equities of the entity. These accounting records consist of one or more journals, which record the daily transactions, and one or more ledgers, in which transactions are sorted. Control over expenditures is exercised by the use of a budget, which is a financial plan for a definite period of time for the school district. Comparison of the budgeted figures with the accounting records determines whether the district is operating according to plans. Cost control exists when there is a breakdown of the cost elements to such an extent that management can easily and economically determine where favorable or unfavorable conditions exist, where improvements can be made, in what areas changes should or should not be made based on an evaluation of the existing conditions.

Accounting Recommendations by the Office of Education

Much attention has been focused on the recommendations for classifications of school district accounts by the Office of Education as described in their booklet, Financial Accounting for Local and State School Systems.[1] As this paper is concerned primarily with costs, only

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[1]U. S., Department of Health, Education, and Welfare, Office of Education, Financial Accounting for Local and State School Systems, Standard Receipt and Expenditure Accounts, State Educational Records and Reports Series: Handbook II, (Washington, D. C.: U. S. Government Printing Office, 1957), p. xix.

the expenditure accounts recommended by this handbook will be noted. Control accounts using the following series of numbers for use for both small and large school districts and for any fund, general special, are recommended:

Table 30. Classification of control accounts recommended by the Office of Education.

Series	Account Name
100	Administration
200	Instruction
300-400	Attendance and Health Services
500	Pupil Transportation Services
600	Operation of Plant
700	Maintenance of Plant
800	Fixed Charges
900-1000	Food Services and Student-Body Activities
1100	Community Services
1200	Capital Outlay
1300	Debt Service from Current Funds
1400	Outgoing Transfer Accounts

The Office of Education recommends further subdivisions of these accounts in each of the categories listed if the activities of the school district warrants the additional accounts. There are 234 sub-classifications suggested in the Handbook. As an illustration, Account No. 100, Administration is subdivided into Salaries, Contracted Services, and Other Expenses; Salaries is further divided into Salaries, Board of Education, etc.

The Handbook recommends that the accounts be further divided into categories into which different program area expenses may be

accumulated, such as Elementary Day Schools, Secondary Day Schools, Summer Schools, Adult Education, etc. Distribution to these categories may be accomplished by using separate accounts or by setting up distribution columns for accounts which show accumulated totals.

The Office of Education advocates the use of average daily membership as the unit of measure for computing per-pupil expenditures. Two chapters (13 pages) are devoted to the determination and proration of costs. The Handbook states that it is concerned with three prorating problems: (1) as between functions, (2) as between organization units or program areas, and (3) as to community services. There is no recommendation for analyzing the costs of the functions nor the program areas, such as elementary, secondary, adult, etc., into basic cost units. The Handbook further recommends that expenses be prorated on several bases, either time, time-floor area, average daily membership or average daily attendance, hour-consumption, number of pupils, mileage, or quantity consumed.

Although the Handbook does not elaborate on costing techniques, a genesis for cost accounting studies is established. The recommendations of the Office of Education are conducive to the development of cost analyses and studies.

The recommendations made by the Handbook are compatible with the following description of cost control made by Jesse G. Kline, Chief Cost Accountant of The Atlantic Refining Company of Philadelphia, Pennsylvania at the regional conference of the National Association

of Cost Accountants.[1]

> Cost control is the result of executive decision, which can be provided only when management is supplied with the tools for intelligent analysis. The latter can best be rendered by the accounting department, which systematically assembles the necessary cost data. In order that the data desired may be compiled expeditiously, it is best to set up appropriate classifications of expenses . . . . Our task thus is to set the machinery in motion to assemble these data in the most economical manner possible. This will involve machine and manual effort in proportions best suited to individual conditions.

The Office of Education hopefully states in its preface to the Handbook that its use will help to "establish a sound basis for cost accounting." It remains for the individual school district to take the tools which are provided by the Handbook and to use it in establishing cost controls.

Accounting Recommendations by State Departments of Education

An analysis of the manuals, accounting forms, and regulations of the 50 state departments of education was made to determine whether the school district is hampered or encouraged by state regulations in the development of cost accounting records. The accounting record information received by the writer from the departments of education from each state is analyzed in Appendix C to investigate whether it is possible to add cost accounting records to the general accounting records already prescribed by state regulations. The following

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[1]National Association of Cost Accountants, A Return to Cost Control, (New York: J. J. Little & Ives Company, 1946), p. 18.

criteria was used for this purpose:

If a school district is required to have

a. a budget for predetermining costs;

b. a set of general accounting records to show revenues and expenditures; and

c. a sub-classification of the expenditure accounts at least on a one-level gradation;

then it is possible for the school district to add further sub-classifications to compute unit costs on a basis determined to be desirable by its management.

Summary

Analysis of the general accounting framework as prescribed by the 50 state regulatory bodies indicates that with respect to the conditions of the criteria:

a. Each state requires that the school unit operate within the framework of a budget.

b. Each state, with the exception of Georgia, where complete information on accounting is lacking by the writer, requires general accounting records showing receipts and disbursements.

c. Each state, with the exception of Georgia, where complete information on accounting is lacking by the writer, requires that expenditures be divided into at least one-level gradation of account classification. (These findings also apply in the District of Columbia.) With the recommendation of at least a one-level grouping of expenditures in 49 of the states, a beginning has been made for the use of additional breakdowns of expenses.

The analysis of state regulations disclosed that some states permit a single-entry system of accounts where the bookkeeper records all cash receipts and disbursements in a distribution ledger. Other states advocate utilizing a double-entry set of books which provides a more complicated but highly effective system of accounting. With this system each financial transaction is analyzed in relation to its effect on the assets, liabilities, and equity of the school unit. Cash, accrual, or a composite accounting basis is used in the various states.

Rigid control over school accounting is exercised in a majority of the states by the imposition of strict rules governing budget, auditing, and reporting procedures. Annual reports are required in all states, but this is the only control device applied in a few of the states. Legislation governing education has been passed in all the states, and is being carefully followed by the school units. The use of cost studies is recommended in a majority of the states' accounting manuals. The types of cost analyses usable in school districts is discussed in the next section.

CHAPTER V

STAGE III - DEVELOPMENT OF COST ACCOUNTING ANALYSES FOR USE IN SCHOOL DISTRICTS

There is a widespread belief among accountants that cost accounting is a valuable management tool. This belief can be substantiated by the wide use of cost accounting by business enterprises, the large number of persons employed in cost accounting work, and the large amount of interest in cost accounting courses by students. The need for cost accounting records becomes apparent when the uses of these records are considered.

Although financial management decisions are based on statements developed from general accounting records, a large proportion of these decisions also require analytical studies. The techniques for developing cost studies depends, first of all, on the purposes for which the analyses will be used. Then the cost accountant analyzes the costs to supply the needed information. Therefore, the cost accountant must secure the necessary figures from the general accounting records, separate costs into new classifications, and accumulate figures in a form appropriate and significant to the solution of the financial problem. Some of these cost reports may be developed continually, while other cost reports are developed for special purposes.

Cost Control Procedures

Purpose of cost control

In school accounting, cost records should be developed to check actual costs with planned costs, and to plan future costs. The purpose of school cost accounting is to maximize services to the community. The means for accomplishing the maximization of services is discussed on the following pages.

Cost centers for control

According to the Cost Accountants' Handbook, a publication containing the essence of modern cost accounting methods and knowledge, specific unit costs may be accumulated in pertinent cost centers.[1] Such centers are selected to group similar activities. In a school district, these cost centers may be segregated according to the lines of responsibility shown on an organization chart. As an example, accumulation of costs for a school district with the following organizational chart may proceed with an analysis of costs for each department. This chart shows a unit system of administrative organization with the superintendent as the chief executive from whom authority extends to each department. In the development of cost analyses, it is important to determine costs without antagonizing the personnel who have the responsibility for controlling expenses within their service areas.

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[1]Theodore Lang (ed.), Cost Accountants' Handbook, (New York: The Ronald Press Company, 1947), p. 132.

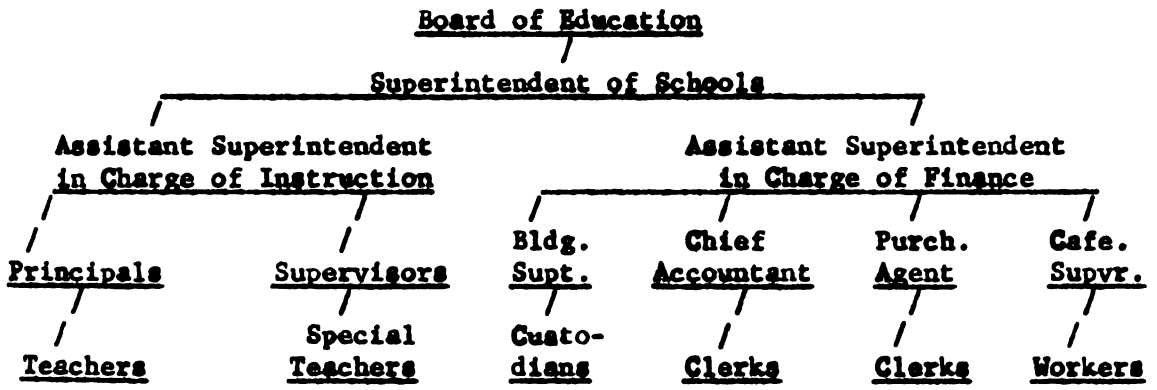

Figure 2. Organization chart.

Cost centers in this organizational example are formed in the following order to correspond with the coordinate classification of accounts as provided in Handbook II of the Office of Education (see Table 30).

Table 31. Account classifications coordinated with cost centers.

Cost Center Based on Organization Chart	Account Classification Provided in Handbook II
Instructional - by schools (direct costs)	Instruction
Principals	Salaries
Teachers	Principals
Supervisors	Teachers
Special Teachers	Consultants or Supervisors
	Other Instructional Staff
	Secretarial and Clerical
	Textbooks
	School Libraries
	Teaching Supplies
	Other Expenses

Table 31. Continued

Non-instructional - Finance (indirect costs)	
Building Superintendent	**Operation of Plant**
Custodians	Maintenance of Plant
Chief Accountant	Office of Business Administration
Clerks	
Purchasing Agent	**Purchasing Office**
Clerks	
Cafeteria Supervisor	Food Services
Workers	

It is incumbent on each school district to form its own cost centers based upon its organizational chart and to coordinate the account classifications to the centers.

Proration of the unassigned account classification expenditures to the cost centers must be performed on some reasonable basis. The necessary distribution must be carefully planned after a thorough study of the characteristics of each element of cost. The plan of allocation may be based on the methods cited in the Office of Education Handbook II.

In the example cited, the method of allocation to cost centers of the unassigned account classification may be as shown in Table 32. School districts, regardless of size, can use these methods of allocation to cost centers with a minimum amount of work. The result of such allocation will be evidence of the actual costs in each area of school activity. The purpose of a cost study of this type is not necessarily to reduce costs but to compare the quality of the educational product with the money being spent to obtain it.

Table 32. Allocation of unassigned account classifications to cost centers.

Account Classification	Method of Allocation
Attendance and Health Services	Time; number of pupils
Pupil Transportation Services	Mileage; number of pupils
Fixed Charges:	
Insurance	Time-floor-area
Pension Payments	Number of employees
Interest on loans	Time-floor-area
Rental	Time-floor-area
Community Services	Number of pupils
Capital Outlay	Time-floor-area
Debt Service	Time-floor-area
Expenditures to Outgoing Transfer Accounts	
Tuition	Number of pupils
Transportation	Mileage; number of pupils

Value of cost control

The value to management of reports which show costs is stated to be:[1]

a. Being able to observe the changing events.

b. Being able to understand their meanings.

c. Action only when the company-wide effects of the events become known.

[1]Spencer A. Tucker, "A System of Managerial Control Using 'Live' Ratios and Control Charts," National Association of Accountants Bulletin, Section 1, (New York: National Association of Accountants, 1962), p. 7.

The value of cost control in a school district is to be able to suggest changes in functions based on an understanding of what is educationally desirable and economically sound. A school building with the lowest unit cost may not be economical in terms of the type of education which may be desirable due to the lack of space, inadequate facilities, and underpaid teachers. On the other hand, high unit costs do not always imply quality education. The administrator arrives at his answers to school problems basing his judgment on information as complete as possible under the circumstances of time, staff assistance, and cost reports. Efficient management is the sum total of understanding the many small things which are constantly presenting themselves as problems.

The administrator improves his position when he is able to explain trends in costs to taxpayers who are not always aware of rising school costs as well as of the quality of the educational product. Cost facts which are valuable to the administrator in his relations with the public include:

The costs of educating per pupil and comparisons with previous years (and possibly with other school districts).

Differences in per capita costs between elementary and secondary education, individual school buildings, or types of educational programs, i. e., college preparatory, general, and business programs.

Costs of extra-curricular activities.

Costs of graduate follow-up.

Costs of transportation.

Costs of adult education.

Costs of new facilities, new buildings, and operation and maintenance of old buildings.

Costs of community services.

Costs of special services, such as guidance, health, library, and school lunches.

Figures on the following items, which relate to internal problems, may be developed continually. These costs relate mainly to educational quality and staff efficiency.

Costs of specific grades, courses, or subject matter, i. e., English, arithmetic, geography, typewriting, etc.

Costs of failures and savings in the acceleration of pupils.

Costs of special programs, i. e., core curriculum, cooperative work training, field trips, etc.

Costs of in-service training.

Costs of clerical work performed by teachers.

Costs of study halls.

Cost accumulation for one of the items shown above is considered on the following pages.

Subject matter costs. Accumulation of costs for specific subject matter may be obtained through the use of "scope and sequence" charts which show the amount of time spent in subject areas in each grade or course. For example, each teacher in the elementary grades who teaches handwriting indicates the amount of time spent on this subject in his classroom as a percentage of the total time available during the school year. Costs are computed by multiplying the percentage shown for each teacher by the total cost of his classroom. The cost of the classroom

should include direct costs, such as salaries, supplies, etc. as described earlier, and possibly include indirect costs as described in the next section. The individual classroom costs for this subject are added together to obtain the cost of this subject in the school system. Continual comparisons of these costs (if possible, with other elementary schools) over a period of time could lead the administrator to investigate the differences in costs as a means to determine the most effective period of time for the teaching of this subject in his particular school district. The answer could lie in changing the textbooks which are being used, or in changing the time of day for instruction, or in the introduction of teaching aids.

An interesting corollary to this study could be the discovery whether teachers who are higher on the salary schedule due to tenure, and consequently, have higher classroom unit costs, teach more effectively because of their experience. Of course, the answer lies partly in the learning potentials of the students, but over an extended period of time, teacher effectiveness may become apparent.

Procedures for analyzing costs of other internal cost items may be developed in a similar manner as was shown for the handwriting course. In the field of cost control, the administrator is limited only by his lack of time, curiosity, or finances. Each school district needs to develop its own cost studies based on its own needs and problems. No two districts could have equal interest in the same problems for they do not have equal administrators, students, teachers, or citizenry. The ingenuity of the school administrator dictates the extent of cost studies in his school district.

Indirect cost centers as a refinement of costing procedures

Cost control is preferably based on the control of costs for which each administrator in the school district knows that he is directly responsible. These responsibilities are fixed in the organization chart. However, school districts of medium and large size with the available personnel can develop additional cost procedures to allocate the costs of indirect burden (cost) centers to direct cost centers.

Allocation of these indirect costs is purely an administrative device to show total costs of the educational product and does not allocate responsibility for these costs to the direct cost centers. The Cost Accountants' Handbook advocates indirect cost centers for use in productive operations, and this method may be applied to school district cost accounting.[1]

In a school district, the indirect cost centers are the departments not engaged in teaching procedures or in activities connected with teaching. A method of allocating indirect costs, based on the organization chart cited earlier, is given in Table 33. Using distribution of indirect costs results in assigning all costs to the departments which are responsible for the educational product. This cost analysis should be used by those school districts which are interested in a maximum amount of cost information. Each school district will need to develop its own methods of distribution. The resultant figures indicate the actual per unit costs for educating students. The use of this method emphasizes

[1]Lang, op. cit., p. 134.

the interdependence of departments within the school district and shows the need for cooperation by all school workers.

Table 33. Allocation of indirect costs to direct cost centers.

Indirect Cost Center	Method of Allocation to Direct Cost Centers
Finance Building Superintendent Custodians	Allocate costs of building operation based on time-floor-area method. Allocate costs of building maintenance directly if possible; otherwise, time-floor-area method.
Chief Accountant Clerks	Allocate costs of business administration based on number of pupils or employees.
Purchasing Agent Clerks	Allocate costs of purchasing office based on number of purchase orders processed; allocate costs of storeroom directly to departments using services.
Cafeteria Supervisor Workers	Costs should be recovered from those using services; allocate profits or losses based on number of pupils.

In addition to the foregoing section on cost accounting procedures, two topics of special interest, which were developed in detail by the writer to show the development of cost studies in special areas, are shown on the following pages.

Projection of Costs for School District Consolidation

There are several ways of comparing costs when a school district decides to consolidate. A study can be made which compares the costs of

consolidated schools with the costs of non-consolidated schools offering the same type of educational program. A study can be made, through statistical methods, of what costs can be expected from a proposed consolidation. Or, the costs of a proposed consolidated school district can be compared with the costs of the individual school units before they are consolidated. While the cost figures used may be practicably quantifiable, the changes in the quality of the educational program are more difficult to measure, or to change into dollar equivalents. An expectation of improvement in course offerings is implicit in any reorganization program, and in most programs the educational content has been better, or at least different, in the consolidated school from the units from which it was formed.

Realizing the indefensibleness of qualitative measurements, this study does not endeavor to assign any value to improved curriculum offerings, but will attempt to determine: (1) what effect consolidation has on current costs where the same grade or course offerings are anticipated, and pupil-teacher ratios remain the same, (2) what effect consolidation will have on current costs where pupil-teacher ratios change thereby causing a contraction in grade or course offerings, and (3) what effect consolidation has on current costs for variable expenses, such as transportation, fuel, janitorial services, clerical personnel, etc. A schedule for use in the project of costs is shown as Figure 3.

Limitations

This study on consolidations will be confined to current expenses without regard to fixed expenditures for bond indebtedness and debt service

Expenditures	(Name) School District	(Name) School District	Total Individual School District Costs	Consolidated Costs	Savings Amount	Savings %
Administration						
Salaries						
Contracted Services						
Other Expenses						
TOTAL						
Instruction						
Salaries						
Principals						
Consultants or Supervisers						
Teachers						
Other Instructional Staff						
Secretarial and Clerical						
Other Salaries						
Textbooks						
School Libraries						
Teaching Supplies						
Other Expenses						
(This schedule is to be continued with other expense classifications.)						

Figure 3. Schedule for projection of costs for school district consolidation using classification of accounts recommended in Handbook II of the Office of Education.

as these items cannot be considered as exerting an influence on consolidation. Even if a consolidation occurs between units where one or the other is heavily indebted and cannot meet its debt obligations, the new unit will still have to look toward savings in its current expenses to meet these bills, or increases in its tax structure, rather than to expect any relief from the consolidation of long-termdebts. Neither will refinancing of long-term debt be considered as this matter depends on the peculiarities of the laws of the several states.

Consideration of a new building erection or acquisition may be covered in a separate study after the projection of current costs for consolidation, or it may be considered as the stimulation for the consolidation which makes it the basis of comparison with the costs of the separate units before the consolidation. It, also, follows that if school districts with varying rates of taxation are consolidated, and the same amount of taxes are to be collected, some persons will pay higher school taxes and some will pay lower than they did before the consolidation. While equating of tax rates sometimes proves a stumbling block for consolidation, this study will not attempt to determine what effect consolidation will have on current tax rates.

Procedures for consolidation

Attempts at reorganization stem from local initiative which recognizes that a larger school system is in a better position to provide educational opportunities and special services, or from stimulations from the states in the form of penalties, aids in grant, or mandatory legislation which reduces the number of school districts within a state. There is

constant pressure exerted by the states for the merger of school districts. An investigation by the Michigan Public Education Study Commission showed that there should be no more than 253 school districts in all of Michigan at a period when there were 4,736 school districts.[1] Operating against this pressure is the lethargy of the rural people in certain districts, together with their insistence on the home-rule principle.

The best instrument for combating indecisiveness about consolidation, which needs to be accomplished by the vote of the districts' constituents, is accurate cost analyses which emphasize savings. In many cases, such savings can later be used as a basis for an expanded qualitative program.

Structural reorganization proceeds from these beginnings to a study undertaken by representatives of the state or county government, or other competent persons, which attempts to provide recommendations for the consolidation of certain coterminous school districts based on the needs of the community area, the number of school children, and the underlying tax base. It is these independent studies which provide the foundation for a successful school consolidation from which the projection of costs should be computed.

Cost studies

Studies of projected costs in a consolidation should consider the effect of pupil enrollment, the changes in pupil-teacher ratios and

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[1] Betty Tableman, Paying for Public Schools in Michigan, Bureau of Government, Institute of Public Instruction, (Ann Arbor: University of Michigan Press, 1951), p. 12.

its effect on instructional costs, any increases or decreases in transportation costs, and any savings in non-instructional costs. These matters are discussed in their respective orders.

Pupil enrollments. Statistics by the Office of Education show that, on the national average, the number of pupils in average daily attendance per teacher in 1953-54 was 24.8, a mean reflected from approximately 63,000 school districts of which two-thirds were still one-teacher schools.[1] As instructional costs are variable with the pupil-teacher ratio, the first determinant in the cost study should be the number of pupils to be enrolled in the proposed school district, both in the elementary school and in the high school, based on the number of children between the compulsory school ages.

A breakdown of school census figures into grade school placements will determine the number of teachers required for the elementary grades using the same average pupil-teacher ratio as the consolidating school districts have been experiencing. In those instances, where enrollments do not provide for a full classroom, split sections have been used for expediency. Having determined the number of instructional employees required, this information then serves as a basis for instructional costs which is compared with the instructional costs of the elementary schools of the consolidating school districts. It is generally in this area that savings can be noted, for the equating of classroom size produces economies through maximum staff utilization.

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[1]U. S., Department of Health, Education, and Welfare, Office of Education, Statistics of State School Systems: Organization, Staff, Pupils, and Finances, 1953-54, (Washington, D. C.: U. S. Government Printing Office, 1956), p. 11.

On the high school level, in addition to determining the anticipated number of students, it is necessary to ascertain the number of class periods during the day, the type and quantity of courses to be offered, the number of classrooms available, and the number of teachers necessary to staff the program. The simplest way is to start with the number of periods, classrooms, and teachers already in the individual consolidating systems, and to note any savings due to enlarged classes.

Many variables crop into the projection at this point. In a majority of the consolidations, it has been found that small school districts with only an elementary program merge into a larger school district where there is already a high school to which they have been sending their students and have been paying tuition charges for them. In these cases, the receiving district not only receives tuition, but may also receive state aid based on the number of tuition pupils. Payment of this stimulant for a high school education has varied between making payments to receiving districts in some cases and to sending districts in other cases depending on the exact legislative provision. However, a careful consideration of all the facts in each case should disclose reliable figures to account for the differences in high school costs before and after consolidation.

It will be noted that the basis for these comparisons has been the actual figures in each particular case. There may be instances, however, in which actual figures may not be available or the circumstances affecting actual figures exert such strong influences as to make these figures unreliable. In these cases, estimates may be used in place of pupil-teacher ratio experience. A determination of the pupil-teacher

ratio in larger schools in an area, such as a county, township, or state, which offer similar courses, or in which the educational quality is similar, provides the base for making instructional cost comparisons. These ratios can be related to the class size in the consolidating school districts, thereby arriving at the approximated instructional costs. Any savings in instructional costs are due mainly to the greater ease in blocking out grade enrollments when total pupil enrollment is large, the advantage of having sufficient classrooms in the larger school districts, a factor which simplifies teaching procedures and enables the handling of larger classes, and there may even result an improvement in teaching quality when the instructor is able to concentrate on the special learning problems of one age group rather than dividing his attention among pupils of varying ages.

A few words of caution should be considered. A saturation point may be reached with the pupil-teacher ratio beyond which the increase in the size of the school will not increase the number of pupils per teacher. This is the cumulative effect of the classroom size, teacher efficiency, and teacher cooperation. Little, in 1934, stated this as 29 pupils per teacher for elementary schools and 22 pupils per teacher for high schools.[1] These figures appear low at the present time when congested classroomscharacterize the schools. Current studies being undertaken on methods of teaching by TV monitoring systems, utilization of teacher apprentices, teaching machines, and similar experiments may reveal new

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[1]Harry A. Little, Potential Economies in the Reorganization of Local School Attendance Units, (New York: Teachers College, Columbia University, 1940), p. 20.

figures on classroom size. On the other hand, minimum figures may be set by legislative action. In Michigan, no equalization grant is given to school districts with less than 10 children.[1] Thus, it may be stated that instructional costs are variable with the pupil-teacher ratio, but become fixed at certain minimum and maximum levels.

Transportation costs. The evidence points toward the greatest anticipated savings in transportation expense as bus routes can be modified to accommodate maximum pupil numbers on each route. By handling larger numbers of pupils, costs of transportation operations per pupil will decrease. It is only in rare instances of population sparsity that transportation costs may increase with consolidation due to an extension of transportation facilities to areas where the service had not been available.

National averages indicate that approximately one-third of the public school pupils were transported during the year 1953-54 at an average cost per pupil of $36.55; the range in state costs varies from $17 to $87.[2] The difference in these costs may be attributed to the effects of population sparsity, road conditions, types of equipment, and price level variations in the several states.

To project transportation costs, it is necessary to take the survey studies of approved plans of consolidation, which were mentioned earlier, to determine the number of pupils who would be transported under a consolidation program. Charting the actual bus routes, the number of bus stops, the number of pupils who live on each route will determine the number of buses to be required.

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[1] Betty Tableman, op. cit., p. 9.

[2] Office of Education, op. cit., p. 20.

Economies in route service can be effected by the use of the double or dual trip plan in cases where the bus routes are not necessarily long. The double trip plan provides for each bus to cover two or more different routes morning and afternoon, and is suited to districts of relatively dense population. The dual trip plan uses the same bus for two or more morning trips and two or more afternoon trips over the same route. In these instances, high school pupils are brought to school before the elementary children. Under either of these plans, fewer drivers will put in more hours on the job which facilitates their recruitment, and produces less idle time for the transportation equipment.

A comparison of the transportation costs for the present school district and for the proposed district reveals any savings, which may be expressed as a percentage. Districts which may have encountered difficulty in buying and maintaining their buses may find that with modified routing, there is idle equipment which may be sold or traded in, and the monies received may be spent for the improvement of the entire transportation system which, in turn, results in lessened maintenance costs.

In place of actual cost projections, any savings in transportation costs may be measured statistically by first determining the average cost per pupil for transportation for the county or the state. In the use of county or state figures, any peculiar factors which now affect local transportation costs, and which may or may not exist after a consolidation is effected, are eliminated. For example, four districts contemplating consolidation may have current costs for transportation for varying

numbers of pupils transported as is shown in Table 34. In this case, with the use of a county average cost as a base for comparison, an anticipated savings of 4% may result. While this method is subject to the inaccuracies inherent in the use of average figures, it can be very useful in arriving at estimated costs.

Table 34. Comparison of districts' transportation costs with county average transportation costs.

District	Transportation Costs of Each District	Number of Pupils Transported	Per Pupil Costs Using County Average - $36.50 for Each District	Percentage of Savings
A	$ 57,000	1,500	$ 54,750	1.0%
B	25,000	600	21,900	1.5%
C	48,000	1,200	43,800	2.0%
D	72,000	2,000	73,000	(.5%)
TOTAL	$202,000	5,300	$193,450	4.0%

Other non-instructional costs. Estimates of administrative costs are predicated on the number of employees, and the number of board members required after consolidation. The number of reports required of small school districts equal those required of large school districts so it is axiomatic that savings will ensue in this expense area. Also, specialization of work procedures which is possible in larger school districts results in greater efficiency.

It is more economical to provide teaching supplies and textbooks for one large school than for a number of small schools. Centralized purchasing insures closer study of prices, taking advantage of discounts, and checking of merchandise quality.

Plant operation and maintenance are also affected by centralized purchasing operations. Costs of fuel, electricity, water, and other utilities are affected by quantity purchases which favor large consumers.

Insurance costs also vary with the number of vehicles covered, the number of buildings insured, and the age and state of repair of the fixed assets. It follows that the large school district with a large number of better equipment and buildings will have proportionately smaller insurance costs than the small school district. Other costs peculiar to the consolidating districts, such as food services, library services, or community services will need to be surveyed in each consolidation program to discover whatever potential economies are present in these areas.

Weighted elementary classroom units. A method of estimating current costs in a proposed consolidation where the same grade or course offerings are anticipated, and pupil-teacher ratios remain the same is the weighted elementary classroom units (called WECU) device for comparing total expenses of consolidated and unconsolidated school districts. This method presupposes that there will be savings due to more economical purchasing of supplies, lowered administrative costs, and increased transportation efficiencies, but does not attempt to measure these specific savings. It is especially useful in predicting expenses in consolidations where a new high school unit is anticipated where there has been no previous high school cost experience, or where elementary school districts merge with a larger high school unit. The WECU method takes the average expense per classroom for elementary schools, multiplies it

by a factor which represents the national average difference in per classroom expense between elementary and high schools to show average classroom expense in weighted elementary classroom units.

Thus, suppose that in 1954, the Office of Education estimated that nationally per pupil expenditures for high schools were 1.602 times the per pupil expenditures in elementary schools. If, in a school district undertaking consolidation with elementary school districts, there were 30 elementary teachers and 24 high school teachers, computation would give 68 WECU; that is, 30 plus 24 teachers times 1.602. If current costs totaled $350,000 for this district, there would be an approximate cost of $5,147 per WECU. Determining how many classrooms are anticipated in the proposed consolidation with the elementary school districts will give an approximate total cost for the new school district. It is assumed that the economies inherent in the larger school district will be carried over to the new school district. The advantage of this method lies in its circumvention of an extended analysis of proposed operations which may be extremely difficult to project in some instances. Its disadvantage lies in using average figures which may be a poor indicator of actual conditions, and may cast doubt on the reliability of the statistical results.

Summary

In summary, projection of costs for school district consolidation can proceed either on an actual cost basis or on an estimated cost basis depending on the circumstances in each case. While actual costs may prove to be more accurate, they entail greater amounts of planning, computation,

and cooperation among the consolidating units. Estimated costs based on statistical computations are subject to error proportionate to the degree of dissimilarity of the specific school district to the average school district. In all events, cost studies should produce a clearer picture of organizational procedures before and after consolidation, thus becoming an important factor in the influencing of school mergers.

Long-Term Variable Budgets for School Districts

Forecasting costs for school districts entails the preparation of a budget for the ensuing year in which there is embodied the plan for financial management. A properly prepared budget should show the sources of revenue or borrowings as well as a summary of expenditures with supporting schedules to reveal past years' figures and methods of arriving at the estimates. Long-term variable budgets are a device for forecasting revenues and expenditures for an extended period of time into the future and contain a plan for the future educational program of the school district.

Budget preparation

Differences in the sequence of the items presented in the budget stem from the underlying philosophies of particular school systems. Some school districts show the revenue to be expected for the new school year, then allocate those revenues to cover the school expenses. Other units show the cost of the educational program which is desired, then follow with a statement of the revenue needed to pay for that level of educational activities.

In presenting the budget, the report may be shown in three parts. One section may consist of a message from the budget-making authority with a summary of the proposed revenues and expenditures, another section may show the schedules supporting the summary, and the last section may detail any drafts of borrowing measures necessary to put the budget into effect. The budget may be distributed to all the taxpayers of the community as a method of engendering interest in the educational program. If it is to function as a public relations document, attempts to create public interest are made by the use of human interest photographs, pictographs, art work, and clever captions in connection with the educational story followed by the costs of supporting the projected educational objectives.

Regulatory provisions

The drafting of the budget might be affected by three authorities. Federal regulations concern budget items, such as school lunches, vocational education, etc., and both current expenses and building construction in federally controlled or affected areas. State provisions and regulations may limit the rate of tax levy, the state aid support, establish minimum teachers' salaries, or prescribe certain types of special education programs. Local regulations, such as city charters, may provide for school revenues as well as for expenditure controls.

Revenue sources

Local school revenues are created in the main by assessments on property whose situs is within the boundaries of the taxing authority. School districts which are not controlled by city charters levy school taxes through the state subdivisional taxing authority, and these taxes, for the most part, are levied on real property. In addition to this revenue, school districts receive aid from the state. Most states attempt to work on the principle of equal educational opportunities for all children, and by this maxim allocate state aid on the basis of need by the school districts.

A large portion of the monies allocated by states to the school districts comprises general purpose funds which may be used for any current expense purpose at the discretion of the local district. A smaller portion are of the special purpose type, such as for transportation, for the education of exceptional children, and for special types of programs. In an effort to assure that the minimum educational requirements are being met, the states impose certain minimum standards or requirements for participation in these state funds.

Provisions for expenditures

It was stated in 1957 that the "expenditures for current operation of schools are likely to exceed $100,000 a year even in a small district having as few as 500 pupils. In a district with 5,000 pupils, expenditures may exceed $1,000,000 a year."[1] The means by which this money is spent

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[1]Lee O. Garber (ed.), Law and the School Business Manager, (Danville, Illinois: Interstate Printers and Publishers, 1957), p. 93.

may make the difference between an economical or an uneconomical operation and an adequate or an inadequate educational program.

In constructing the figures for the budget, due emphasis should be given to the cost experience of the past year. An analysis of anticipated expenditures by classrooms, by departments, by buildings, and by elementary, junior and senior high divisions should be made in order to bring into clearer focus the trend in the spending for the various programs. In setting the total program, anticipated student enrollments are forecast from the school census and any unusual increases or decreases from these figures can be determined in advance from current circumstances. In determining the estimate for staff requirements, the following general guide has been suggested.[1]

Table 35. Guide for staff requirements.

Staff Position	Staff Requirements
Principals and other administrative officers	1 to 12 teachers
Classroom teachers	1 teacher to 25 pupils
Counselors	1 to 200 high school pupils
Librarians	1 to 500 pupils
Clerk	1 to 50 pupils (No school of 12 teachers or more should be without a full-time clerk. A clerk can divide her time between two or more schools.)
Nurse	1 to 1,500 elementary pupils 1 to 2,000 high school pupils
Custodian	1 full-time custodian for approximately 16,000 sq.ft. of floor space

[1]American Association of School Administrators, School Boards in Action, (Washington, D. C.: National Education Association, 1946), p. 122.

Long-term budgeting

Thus far the material has outlined what is required for budgeting purposes. With this background of general conditions, it is suggested that variable budgets be developed by the school district showing anticipated trends in pupil enrollment to determine long-term forecasting for buildings, instructional staff requirements, and modifications of the school program to include new and desirable changes. In the use of this method, the annual budget becomes a part of a projected plan which may extend to five or ten years in scope, and reflect the variable elements of the educational program. There are several reasons why projecting variable costs in long-term planning is especially useful:

a. Publicity regarding needed building improvements may be started in time so that there is sufficient opportunity for public discussion and agreement on issues.

b. Trends in higher pupil enrollments can be watched with respect to staff replacements or recruitments before the needs become critical.

c. Increased costs due to rising price fluctuations may be anticipated and provided for.

d. The need for consolidations may be visualized if the receipts, expenditures, tax rates, and taxable property are considered over a long-term period of time.

The continuous long-span method of budgeting for schools entails the techniques of adjusting the forecasts annually or periodically, and of budgeting constantly in the light of new developments, and always

working several years in advance of the current annual budget. While long-term planning may not be feasible from the legal (state-aid) standpoint, the use of this expedient together with variable budgets considered in the light of minimum and maximum pupil enrollment figures is to be recommended as a helpful technique for financial steering.

Procedures for long-term budgeting. Projected pupil enrollments can be secured from the school census and adjusted for dropouts based on the experience records of the school system. For this purpose, it is necessary to utilize past historical records. The use of an enrollment chart covering a period at least comparable to that of the forecast showing grade enrollments through the years is a useful method of ascertaining very closely the dropout rate. The resulting anticipated pupil enrollment figures showing minimum and maximum enrollments, while possessing high reliability, should be adjusted each year to reflect current trends in the innovations of the educational programs and changes in economic conditions, thus necessitating the constant review and adjustment of the budgetary figures.

Once the enrollment study has been finalized, the projection of the costs of the educational program proceeds. The pupil-teacher ratios of the several grades can be extended into the enrollment study to determine staff requirements for the term of the budgets not only on the basis of the anticipated ranges in enrollment but also on the basis of the varying educational programs. As the enrollment figures vary within some predictable range due to the approximations inherent in them, the variable budgets are developed to show the resultant ranges in expenses.

Per pupil unit costs on instructional supplies, library books, audio-visual materials, transportation expense, and other expenses directly related to pupil costs can be analyzed with respect to their adequacy. Salaries of custodians, clerical workers, counselors, and administrative and instructional staff members are based on salary schedules which are subject to periodic revisions and contain annual increment provisions. A realization that such salaries will increase or decrease to reflect economic cyclical fluctuations makes for sensible long-term planning.

Especially important is anticipatory planning in the field of public borrowing. Budgetary planning which encompasses the effects of alternative borrowing programs and procedures, various types of building programs to group grade divisions, and the resulting changes in expenditures due to these factors makes for a realistic viewing of the long-range monetary needs. The "going-concern" concept is as valid for school districts as it is for business concerns.

Charts for long-term budgeting. The following charts are presented for use in variable budgeting (see Figures 4 through 8). In connection with their use, it is desirable to retain in mind the aforementioned perspectives on budgetary procedures. The group covers personnel salaries only; however, extension of the materials shown can be developed for other revenue and expense classifications.

Year (1962-72)

PUPIL ENROLLMENTS

	YEAR (1962-1963) Min.	Max.	Avg.	(1963-1964) Min.	Max.	Avg.
ELEMENTARY						
Kindergarten..						
1.....						
2.....						
3.....						
4.....						
5.....						
6.....						
JUNIOR HIGH						
7.....						
8.....						
SENIOR HIGH						
9.....						
10.....						
11.....						
12.....						
TOTAL.....						
SPECIAL.....						
POST GRADUATE...						

NOTE: Worksheet to be extended for entire 10-year period.

(Figures should include transferring rural students.)

Figure 4. Long-term budget schedule showing pupil enrollments.

Year (1962-72)

INSTRUCTIONAL STAFF REQUIREMENTS

Elementary - Building (A)

(To be used in conjunction with PUPIL ENROLLMENTS)

	YEAR						
	(1962-1963)			(1963-1964)			
	Min.	Max.	Avg.	Min.	Max.	Avg.	
Kindergarten..							
1.....							
2.....							
3.....							
4.....							NOTE: Worksheet to be extended for entire 10-year period.
5.....							
6.....							
SPECIAL.....							
TOTAL.....							

(Scheduling of half-day sessions should be taken into account.)

Figure 5. Long-term budget schedule showing teachers required for an elementary school.

Year (1962-72)

INSTRUCTIONAL STAFF REQUIREMENTS

Secondary

(To be used in conjunction with PUPIL ENROLLMENTS)

	YEAR (1962-63) Min.	Max.	Avg.	YEAR (1963-1964) Min.	Max.	Avg.
JUNIOR HIGH						
7th Grade Subjects..						
_____..						
_____..						
_____..						
_____..						
8th Grade Subjects..						
_____..						
_____..						
_____..						
_____..						
SENIOR HIGH						
9th Grade Subjects..						
_____..						
_____..						
_____..						
_____..						
(This listing is to be continued through 12th grade subjects.)						
SPECIAL.....						
STUDY HALL.....						
TOTAL.....						

NOTE: Worksheet to be extended for entire 10-year period.

Figure 6. Long-term budget schedule showing teachers required for a secondary school.

Year (1962-1972)

NON-INSTRUCTIONAL STAFF REQUIREMENTS

(To be used in conjunction with PUPIL ENROLLMENTS)

	YEAR (1962-1963) Min.	Max.	Avg.	YEAR (1963-1964) Min.	Max.	Avg.
ELEMENTARY						
Building A						
Full-time Custodians..						
Part-time Custodians..						
Clerical.....						
Other.....						
Building B						
Full-time Custodians..						
Part-time Custodians..						
Clerical.....						
Other.....						
JUNIOR HIGH						
Full-time Custodians..						
Part-time Custodians..						
Clerical.....						
Other.....						
SENIOR HIGH						
Full-time Custodians..						
Part-time Custodians..						
Clerical.....						
Other.....						
LIBRARIANS.....						
NURSES.....						
COUNSELORS.....						
SPECIAL.....						
TOTAL.....						

NOTE: Worksheet to be extended for entire 10-year period.

Figure 7. Long-term budget schedule showing employees required for non-instructional work in elementary and secondary schools.

Year (1962-72)

SALARY EXPENSES
INSTRUCTIONAL AND NON-INSTRUCTIONAL STAFFS

(To be used in conjunction with PRECEDING SCHEDULES)

	SALARY, INCLUDING ANNUAL INCREMENTS						
	PRIOR YEARS			YEAR			
	1959-1960	1960-1961	1961-1962	(1962-1963) Min.	Max.	Avg.	
NAME OF TEACHER:							
Elementary Building A							
Kg...							
1....							
2....							
3....							
4....							
5....							
6....							
Add'l..							
Elementary Building B							
Kg...							
1....							
2....							
3....							
4....							NOTE: Worksheet to be extended for entire 10-year period.
5....							
6....							
Add'l..							
Junior High							
7....							
(This listing is to be continued through 12th grade subjects.)							
LIBRARIANS							
STUDY HALL							
NURSES							
COUNSELORS							
SPECIAL							
TOTAL.....							

Figure 8. Long-term budget schedule showing salary expenses for instructional and non-instructional employees.

Summary of long-term variable budgeting

Long-term variable budgeting is an aspect of school financial administration which has not yet received the attention of school administrators. The advantages of budgeting over an extended period of time becomes self-evident as the revenues and expenditures of school districts are affected by population trends and economic conditions. Future educational plans are dependent on current information regarding costs and the projection of these costs for financial steering. The base for sound future plans is cost control through cost studies and information.

Summary

The development of cost analyses for school districts proceeds from a study of costs affecting departments directly involved in teaching. Indirect cost functions are allocated to instructional departments as a further refinement of costing techniques. Projection of costs in consolidation and in variable budgeting are two extensions of costing functions in school district accounting.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Problem and Procedures

This research study was performed to determine the frame of mind of school administrators respecting their desires for the use of an additional financial tool--cost accounting, and whether it is possible to utilize cost studies in school district accounting. The survey of the literature preceding the initiation of this research study indicated that there is a great deal of interest in school accounting by various school groups and authors. However, less interest is evident in the application of cost accounting. This study investigated the application of cost accounting to school financial management.

Purpose of the study

This study was conducted to determine whether school administrators utilized cost records as an essential tool in financial management, and whether there was a felt need for such records by school district officials. Then to test the feasibility of cost record utilization, analyses were made of the manuals, accounting forms, regulations and rules of the state departments of education in the 50 states as well as a study of Handbook II of the U. S. Office of Education. Based on the desires of school administrators and the permissive nature of regulatory provisions imposed by the

states, selected cost accounting studies were developed. Each of the steps in this study resulted in an affirmative finding.

Methodology and design

The conduct of this study required three types of research techniques.

1. The feelings of school administrators toward cost accounting procedures was tested by a mailed questionnaire to 233 school districts selected by random sampling. A follow-up postcard request was sent to 180 participating respondents to test any changes in attitude after they had received the results of the survey.

2. Personal interviews with school administrators in ten city school districts was conducted to provide depth and meaning to the answers to the questionnaire used in the survey.

3. Analytical study of the general accounting framework imposed by governmental bodies was conducted to determine the types of cost accounting reports which may be formulated for use by school districts of varying size.

To explore the theory that school administrators are desirous to initiate improvements, that they are not hampered by regulatory bodies to prepare suitable cost reports, and that cost accounting procedures can be applied to school district accounting, the answers to three questions were sought:

a. Is there a felt need by school administrators for the use of underlying cost records as an aid to managerial efficiency?

b. Does the general accounting framework, as set by state regulatory bodies, hamper the use of costing methods?

c. Can cost accounting records be developed independently of the general accounting framework, either on a limited or extensive basis, depending on the type of educational program offered, the size of the school administrative unit, and the size of the pupil enrollment?

Analysis of survey data. The analysis of the information obtained from the respondents' answers to the mail questionnaire was summarized by the writer and tabulated, and statistically analyzed by the MISTIC Computer at the Michigan State University Computer Laboratory.

Summary of Findings

This study revealed extensive interest by school administrators in the subject of cost accounting studies which is indicated by the 74.6% return of the mailed questionnaires. Interest by state departments of education is equally high as the writer was able to secure replies from these agencies to a request for accounting manuals, regulations, and forms in an abundance which far exceeded expectations.

The findings from this study are presented as answers to the three questions posed earlier.

Question one: Is there a felt need by school administrators for the use of underlying cost records as an aid to managerial efficiency?

This question received an affirmative answer by a slight margin. A follow-up postcard request survey created the implication that an unfavorable attitude of a school administrator toward cost accounting procedures may possibly be changed through dissemination of literature favoring cost accounting.

Respondents who participated in the questionnaire survey indicated by approximately 52% that they were favorably disposed toward the use of cost studies. The school districts which already had some cost methods in use showed a strong affirmative viewpoint. The survey showed that as a school district increases the types of mechanical equipment in use and the types of general accounting records in use, it possibly shows a propensity to increase its cost studies.

Question two: Does the general accounting framework, as set by state regulatory bodies, hamper the use of costing methods?

The answer to this question is that the general accounting framework does not hamper the use of costing methods. The criteria used for determining the possibility of cost studies was that a school district was required to have: (1) a budget for predetermining costs; (2) a set of general accounting records to show revenues and expenditures; and (3) a sub-classification of the expenditure accounts at least on a one-level gradation.

Analyses of the manuals, accounting forms, regulations and rules of the state departments of education in the 50 states as well as a study of the recommendations in Handbook II of the U. S. Office of Education showed that at least 49 of the states require that school districts prepare a budget, that account classifications contain information on receipts and disbursements, and that there is at least a one-level gradation of the chart of accounts which permits school districts to develop cost studies to aid in the solutions to their financial problems. (These findings also apply in the District of Columbia.)

Question three: Can cost accounting records be developed independently of the general accounting framework, either on a limited or extensive basis, depending on the type of educational program offered, the size of the school administrative unit, and the size of the pupil enrollment?

The answer to this question is apparent in the cost analyses using direct cost and indirect cost centers which were developed for varying size of school districts and were based on acceptable business practices. Adaptation of cost analyses from business practices to school district use proceeded from a consideration of recommendations for cost accounting methods from authoritative sources, such as the Cost Accountants' Handbook, various publications of the National Association of Accountants, the American Accounting Association, and Handbook II of the U. S. Office of Education. Also, the writer's experience as a certified public accountant since 1948 contributed to the development of these cost analyses. Cost studies on consolidations and long-term variable budgets are presented as two types of cost reports singularly useful for school district financial planning which is possible under the prevailing general accounting structure at the present time.

Conclusions

The findings in this study indicate that school administrators are not fully acquainted with cost accounting procedures although they show an interest in this area of financial management. The potentials of cost studies are not realized by many school officials due to their unfamiliarity with the subject. This may be the result of a paucity

of literature on cost accounting for school districts or to the lack of training by school administrators in this subject. The adoption of the recommendations in Handbook II of the U. S. Office of Education by a majority of the states is focusing attention on accounting records in use by school districts. This is a trend in the direction of improved reporting methods. It is felt by the writer that further improvements can be accomplished in financial reporting by the dissemination of information on cost accounting uses in school districts.

The types of cost studies needed by each school district varies with the size of the school district, the demand for cost information by the tax-paying public, and the urgency for the use of cost information by the school administrator. That school districts are making cost studies spasmodically on the demand of the particular occasion is well known. Also, many school administrators have statistics on the costs of the various services offered by the system. However, individual thought and effort on the part of each administrator is required to develop figures on the costs of specific cost units. There is a need for a textbook on cost accounting procedures wherein the theory and techniques of analysing costs of typical school expenditures is explained, illustrated, and carefully integrated with school business administration.

As stated earlier, quality education is not necessarily expensive nor do high expenditures signify quality in education. It is only when a school district receives full measure for the expenditure of funds that the conditions for public trust in the administration of the school are satisfied. The school administrator checks on the measure of value received through cost reports. Thus, cost reports can be utilized to interpret, and even

direct, the philosophy of the school system. The interpretation of school philosophy occurs when the cost of each school service is compared with the prior year's cost and with the cost of every other service which the school offers. The administrator can check on the direction of school expenditures to determine whether the philosophy of the school is being followed. Recurring expenditures for certain classes of services can direct the school system toward a philosophy of education which the costs of the various services indicate.

The findings disclosed that school districts with multiple units of elementary, secondary, and community college exhibited the greatest interest in cost accounting procedures and, therefore, are the most favorable users of this managerial device. Small school districts complain of a lack of trained personnel to develop cost information. Thus, a concentration of cost analyses to suit the multiple unit school system may be the most propitious method to introduce continuing cost analyses to school administrators.

Those school districts which employ data processing equipment have an unusual opportunity to amplify their financial information by fact-finding reports on costs. School districts using manual and mechanical methods can improve their financial reporting by periodical reports on unit costs at a time when school is not in session and the demands on the clerical staff have subsided. Based on the material in this study, the conclusions are:

a. The receptiveness of school officials to cost studies can be increased by publicizing the merits of cost-finding techniques.

b. The adoption of cost accounting as a managerial tool by school personnel can be increased by implementing school fund accounting courses with material on cost accounting.

c. Cost reports may be utilized to interpret the philosophy of the school system to the community.

d. In order to introduce continuing cost studies to school administrators, the needs of the multiple school units of elementary, secondary, and community college should be considered first as these school units evidenced the greatest interest in further cost studies.

e. The trend toward automated equipment in school district accounting provides the means for valuable cost reports without necessitating the addition of office personnel for the preparation of these reports.

f. School districts of small size can prepare cost reports during those periods of time when there is an abatement of school activities.

Implications for Further Study

The material in this study has led to the following recommendations for further study:

a. It appeared to the writer during the personal interviews with school officials that they had preconceived opinions on the value of cost accounting which may be based, in part, on their experience and training. To what extent the answers to the mailed questionnaires were influenced by this factor cannot be determined. A study in the area of the background of school administrators can be very useful in the consideration of further research studies of this type.

b. The types of cost reports already used by school administrators could not be determined from this study. A search in this area could indicate the direction of further development in this subject.

c. The use of long-term variable budgets appears as a new type of long-range planning for school units and a study in the area of long-term

planning could initiate a transfer of this effective managerial device from business usage into the educational field.

d. A study in the area of training programs for school personnel could reveal the present trend for school administrative work preparation on the executive level. An increase in accounting training for school administrators on a quality rather than a quantity basis may increase the managerial efficiency of those to whom school business management is entrusted.

e. A study at a later date similar to the current study may reveal changing attitudes of school administrators toward cost accounting procedures. It is the opinion of the writer that greater interest in this area will be manifest at a later date due to the emergence of this subject in the area of school administration.

Summary

The function of schools is to educate. The means for accomplishing this function are constantly changing, both educationally and administratively. In the administrative field, cost accounting is a tool which has not been put into use as fully as its potentials warrant. The findings of the study indicate that school administrators are, as a majority, interested in cost procedures, that regulatory provisions permit cost studies, and that adaptations of business cost analyses can be made for school district use. The conclusions indicate that the introduction of cost accounting as an aid to school financial management can proceed along several well-marked avenues which relate to the training of the school administrator, and the type of school and facilities with which he works. Further studies to implement this research thesis are implied in the aforementioned findings and conclusions, and are itemized for convenience.

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APPENDIX A

QUESTIONNAIRE

Date_____

City or School District_____ State_____

Report prepared by_____ _____
(Name) (Title)

1. WHAT TYPE OF EDUCATIONAL PROGRAM DO YOU OFFER:

	(Check One)	Number of Schools	Number of Teachers
Elementary only			
Secondary only			
Community college only			
Elementary and secondary			
Elementary, secondary, and community college			
Secondary and community college only			

2. AVERAGE DAILY ENROLLMENT_____ NO. OF DAYS IN SESSION_____

3. ANNUAL CURRENT EXPENDITURE PER PUPIL IN AVERAGE DAILY ENROLLMENT (PER CAPITA COST)_____

4. PLEASE CHECK THOSE ACCOUNTING RECORDS WHICH ARE IN USE:

General accounting records:

Cash receipt journals_____
Insurance registers_____
Note registers_____
Bond registers_____
Petty cash records_____
School lunch records_____
Voucher registers or disbursement ledgers_____
Individual earnings records_____
Student activities records_____
Revenue ledgers_____
Property ledgers_____
Payroll journals_____
Appropriation or encumbrance and expense ledgers_____
Other_____

Cost accounting records:

Transportation cost analyses____
Payroll allocation schedules____
Cafeteria costs analyses_____
Job cost ledgers_____
Expense allocation schedules_____
Other_____

5. PLEASE CHECK MECHANICAL EQUIPMENT AVAILABLE:

Adding machines_____ Bookkeeping machines_____
Calculating machines_____ Other_____
Data processing equipment_____

6. NUMBER OF EMPLOYEES ASSIGNED TO DUTIES OF A BOOKKEEPING NATURE_____

7. WHICH OF THE FOLLOWING METHODS DO YOU USE FOR AVERAGING EXPENDITURES:
(Please check one)

Per pupil units_____ Weighted elementary classroom units_____ Grade or course units___ Other_____

8. DO YOU HAVE COST APPROXIMATIONS ON THE TEACHING OF CERTAIN FUNDAMENTAL SUBJECTS (SUCH AS SPELLING, HANDWRITING, PHYSICS, ETC.) TO EACH STUDENT IN YOUR SYSTEM? Yes_____ No_____

9. DO YOU HAVE COST APPROXIMATIONS ON THE COSTS OF NON-TEACHING ITEMS (SUCH AS STUDY HALL SUPERVISION, LIBRARY SERVICES, GUIDANCE SERVICES, ETC.) TO EACH STUDENT IN YOUR SYSTEM? Yes_____ No_____

10. DO YOU HAVE YOUR EMPLOYEES (ADMINISTRATIVE, INSTRUCTIONAL, CLERICAL, CUSTODIAL, ETC.) KEEP TIME REPORTS ON ALL TIME WORKED BY THEM? Yes_____ No_____

11. HAVE YOU EVER FELT THAT INFORMATION OF THE ABOVE TYPE WOULD BE USEFUL IN DISCUSSIONS OF SCHOOL EXPENSES WITH P. T. A., FACULTY, OR CITIZENS' GROUPS? Yes_____ No_____

12. COMMENTS:

_____

_____

_____

YOU WILL BE INFORMED OF THE RESULTS OF THIS SURVEY

COVERING LETTER

HELEN M. SMITH
Certified Public Accountant

1051 Lakeshore Drive - US 25
Carsonville, Michigan

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The enclosed questionnaire pertains to a study of accounting procedures prevalent in school districts in the United States. Your district is included in a sampling drawn from 50 states to determine the practicability of using cost accounting methods.

Will you please complete the questionnaire by checking in the appropriate blanks, and return it in the enclosed stamped envelope.

I know that your time and your employees' time is valuable, but a small favor in this respect will be appreciated.

Sincerely,

Helen M. Smith

Enclosures:
Questionnaire
Return envelope

You will be informed of the results of the survey.

FOLLOW-UP LETTER

HELEN M. SMITH
Certified Public Accountant

1051 Lakeshore Drive - US 25
Carsonville, Michigan

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. . . . . .
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. . . . . .:

Your assistance is needed for the purpose of completing a study on school district accounting which investigates cost procedures helpful to school administrators.

While I realize that the demands upon your time make it impossible for you to consider every request sent to you, I do hope that you will complete the enclosed questionnaire and return it in the stamped envelope. This material is identical to that sent to you previously.

This small favor will be most appreciated.

Sincerely,

Helen M. Smith

Enclosures:
Questionnaire
Return envelope

You will be informed of the results of the survey.

SAMPLES OF STATE SCHOOL DISTRICTS

Regions and States	County	City	Population	Reply Received
Northeast				
New Jersey (21 counties)	Atlantic	Margate City	4,715	Yes
	Bergen	Midland Park	5,164	No
	Burlington	Pemberton	7,107	Yes
	Camden	Clementon	3,191	Yes
	Cape May	North Wildwood	3,158	No
	Cumberland	Bridgeton	18,378	No
	Essex	Caldwell	6,270	Yes
		Millburn	13,775	Yes
	Gloucester	Williamstown	2,632	Yes
	Hudson	Kearny	39,952	No
	Hunterdon	Lambertville	4,477	No
	Mercer	Lawrence Twp.	4,433	Yes
	Middlesex	South Plainfield	8,008	Yes
	Monmouth	East Keansburg	2,596	No
	Morris	Lincoln Park	3,376	No
		Morris Twp.	3,852	Yes
	Ocean	Toms River	2,517	Yes
	Passaic	Wanaque	4,222	No
	Salem	Salem City	9,050	Yes
	Somerset	North Plainfield	12,766	No

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
New Jersey - Continued				
	Sussex	Franklin	3,864	Yes
	Union	Hillside Twp.	21,007	Yes
	Warren	Hackettstown	3,894	No
		Phillipsburg	18,919	Yes
North Central				
Illinois	Boone	Belvidere	9,422	Yes
(102 counties)	Carroll	Savanna	5,058	Yes
	Clark	Centralia	13,863	Yes
	Cook	Homewood	5,887	Yes
	DeWitt	Clinton	5,945	Yes
	Edwards	Albion	1,855	Yes
	Franklin	Christopher	3,545	Yes
	Grundy	Morris	6,926	Yes
	Henderson	Oquawka	912	Yes
	Jasper	Newton	2,780	Yes
	Johnson	Vienna	1,173	Yes
	Knox	Abingdon	3,300	Yes
	Lee	Dixon	11,523	No
	McHenry	Crystal Lake	4,832	Yes
	Madison	Collinsville	11,862	Yes

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
Illinois - Continued				
	Massac	Metropolis	6,093	Yes
	Montgomery	Litchfield	7,208	Yes
	Peoria	Peoria	111,856	Yes
	Pope	Golconda	1,301	No
	Richland	Olney	8,612	No
	Sangamon	Springfield	81,628	Yes
	Stark	Toulon	1,230	No
	Vermilion	Danville	37,864	Yes
	Wayne	Fairfield	5,576	Yes
Minnesota	Becker	Detroit Lakes	5,787	Yes
(84 counties)	Blue Earth	Mankato	18,809	Yes
	Carver	Chaska	1,927	Yes
	Clay	Moorhead	14,870	Yes
	Cottonwood	Windom	3,165	Yes
	Douglas	Alexandria	6,319	Yes
	Freeborn	Albert Lea	13,545	Yes
	Hubbard	Park Rapids	3,027	Yes
	Jackson	Jackson	3,313	Yes
	Koochiching	International Falls	6,269	Yes
	Lake of the Woods	Baudette	1,017	Yes

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
Minnesota - Continued				
	McLeod	Glencoe	2,801	Yes
	Martin	Fairmont	8,193	Yes
	Mower	Austin	23,100	Yes
	Nobles	Worthington	7,923	No
	Pennington	Thief River Falls	6,926	Yes
	Polk	East Grand Forks	5,049	Yes
	Redwood	Redwood Falls	3,813	Yes
	Rock	Luverne	3,650	Yes
	Sherburne	St. Cloud	28,410	Yes
	Steele	Owatonna	10,191	Yes
	Todd	Staples	2,782	Yes
	Waseca	Waseca	4,927	Yes
	Winona	Winona	25,031	Yes
South Dakota	Aurora	Plankinton	694	No
(67 counties)	Beadle	Huron	12,788	Yes
	Bennett	Martin	1,013	Yes
	Brown	Aberdeen	21,051	Yes
	Butte	Belle Fourche	3,540	No
	Clark	Clark	1,291	Yes
	Corson	McIntosh	626	No

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
South Dakota - Continued				
	Day	Webster	2,503	Yes
	Douglas	Armour	1,013	Yes
	Faulk	Faulkton	747	Yes
	Haakon	Philip	833	No
	Hanson	Alexandria	746	Yes
	Hutchinson	Olivet	-	No
	Jerauld	Kessington Springs	1,352	Yes
	Lake	Madison	5,153	No
	Lyman	Kennebec	-	No
	McPherson	Leola	795	Yes
	Miner	Howard	1,191	Yes
	Pennington	Rapid City	25,310	Yes
	Roberts	Sisseton	2,871	Yes
	Spink	Redfield	2,655	Yes
	Todd	Mission	-	Yes
	Union	Elk Point	1,483	No
	Yankton	Yankton	7,709	No
South				
Florida	Alachua	Gainesville	(County-unit school systems - see explanation under state column.)	Yes
(67 counties	Bay	Panama City		Yes

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
Florida - Continued				
In this state, the schools in the cities are administered as a part of the county in which the city is located; therefore, requests were sent to county superintendents.)	Broward	Fort Lauderdale		Yes
	Citrus	Inverness		No
	Columbia	Lake City		Yes
	Dixie	Cross City		Yes
	Flagler	Bunnell		No
	Gilchrist	Trenton		No
	Hamilton	Jasper		No
	Hernando	Brooksville		Yes
	Holman	Bonifay		No
	Jefferson	Monticello		No
	Lee	Fort Myers		Yes
	Liberty	Briston		Yes
	Marion	Ocala		Yes
	Nassau	Fernandina		Yes
	Orange	Orlando		Yes
	Pasco	Dade City		Yes
	Putnam	Palatka		Yes
	Santa Rosa	Milton		Yes
	Sumter	Bushnell		Yes
	Union	Lake Butler		No

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
Florida - Continued				
	Walton	De Funiak Springs		No
	Washington	Chipley		Yes
Mississippi	Amite	Liberty	665	No
(82 counties)	Calhoun	Pittsboro	-	No
	Choctaw	Ackerman	1,528	Yes
	Coahoma	Clarksdale	16,539	No
	DeSoto	Hernando	1,072	No
	Greene	Leakesville	834	Yes
	Harrison	Biloxi	37,425	Yes
	Issaquena	Mayersville	-	Yes
	Jasper	Bay Springs	1,228	Yes
	Kemper	DeKalb	866	Yes
	Lauderdale	Meridian	41,893	Yes
	Leflore	Greenwood	18,061	No
	Madison	Canton	7,048	No
	Montgomery	Winona	3,441	Yes
	Noxubee	Macon	2,261	No
	Perry	New Augusta	-	Yes
	Prentiss	Booneville	3,295	Yes
	Sharkey	Rolling Fork	1,320	No

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
Mississippi - Continued				
	Stone	Wiggins	1,141	Yes
	Tippah	Ripley	2,011	No
	Union	New Albany	3,680	Yes
	Wayne	Waynesboro	3,442	Yes
	Winston	Louisville	5,282	No
	Yazoo	Yazoo City	9,746	No
Texas	Bandera	Bandera	-	No
(254 counties)	Brazos	Bryan	18,102	Yes
	Cameron	Brownsville	36,066	No
	Coleman	Coleman	6,530	Yes
	Crane	Crane	1,420	No
	Dickens	Dickens	465	No
	Falls	Marlin	7,099	Yes
	Galveston	Texas City	16,620	Yes
	Guadalupe	Seguin	9,733	Yes
	Hays	San Marcos	9,980	Yes
	Hudspeth	Sierra Blanca	725	No
	Johnson	Cleburne	12,905	Yes
	Kinney	Brackettville	2,653	Yes
	Limestone	Mexia	6,627	Yes

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
Texas - Continued				
	Mason	Mason	1,535	Yes
	Mitchell	Colorado City	6,774	Yes
	Nueces	Corpus Christi	108,287	Yes
	Presidio	Marfa	3,603	Yes
	Rockwall	Rockwall	1,318	Yes
	Shelby	Center	4,323	Yes
	Tarrant	Fort Worth	278,778	No
	Upton	McCamey	3,121	Yes
	Wharton	El Campo	6,237	Yes
	Young	Olney	3,765	Yes
West				
California	Alpine	Fredericksburg	3,854	No
(58 counties)	Calaveras	San Andreas	1,082	No
	Contra Costa	Pittsburg	12,873	Yes
	Fresno	Reedley	4,135	Yes
	Humboldt	Eureka	23,058	Yes
	Kern	Taft City	3,707	Yes
	Lake	Lakeport	-	Yes
	Madera	Madera	10,497	Yes
	Mariposa	Mariposa	-	Yes

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
California - Continued				
	Modoc	Alturas	2,819	Yes
	Monterey	Pacific Grove	9,623	No
	Orange	Santa Ana	45,533	Yes
	Plumas	Quincy	-	No
	San Benito	Hollister	4,903	Yes
	San Diego	San Diego	334,387	Yes
	San Luis Obispo	San Luis Obispo	14,180	Yes
	Santa Barbara	Santa Barbara	44,913	Yes
	Shasta	Redding	10,256	Yes
	Siskiyou	Weed	2,739	Yes
	Stanislaus	Turlock	6,235	Yes
	Tehama	Corning	2,537	No
	Tuolumne	Sonora	2,257	Yes
	Yolo	Davis	3,554	Yes
	Yuba	Marysville	7,826	Yes
Nevada	Churchill	Fallon	(County-unit school systems - see explanation under state column.)	No
(17 counties	Clark	Las Vegas		Yes
	Douglas	Gardnerville		Yes
	Elko	Elko		Yes

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
Nevada - Continued				
In this state, the schools in the cities are administered as a part of the county in which the city is located; therefore, requests were sent to county superintendents.)	Esmeralda	Goldfield		No
	Eureka	Eureka		Yes
	Humboldt	Winnemucca		Yes
	Lander	Battle Mountain		Yes
	Lincoln	Panaca		Yes
	Lyon	Yerington		Yes
	Mineral	Hawthorne		Yes
	Nye	Tonopah		Yes
	Ormsby	Carson City		Yes
	Pershing	Lovelock		Yes
	Storey	Virginia City		Yes
	Washoe	Reno		Yes
	White Pine	East Ely		No
Wyoming (23 counties)	Albany	Laramie	15,581	Yes
	Big Horn	Lovell	2,508	Yes
	Campbell	Gillette	2,177	No
	Carbon	Rawlins	7,415	Yes
	Converse	Douglas	2,544	Yes
	Crook	Sundance	-	No
	Fremont	Lander	3,349	Yes

SAMPLES OF STATE SCHOOL DISTRICTS - Continued

Regions and States	County	City	Population	Reply Received
Wyoming - Continued				
	Goshen	Torrington	3,247	Yes
	Hot Springs	Thermopolis	2,870	Yes
	Johnson	Buffalo	2,674	Yes
	Laramie	Cheyenne	31,935	Yes
	Lincoln	Kemmerer	2,026	Yes
	Natrona	Casper	23,673	Yes
	Niobrara	Lusk	1,814	Yes
	Park	Powell	3,804	Yes
	Platte	Wheatland	2,110	Yes
	Sheridan	Sheridan	11,500	Yes
	Sublette	Pinedale	647	Yes
	Sweetwater	Green River	3,187	Yes
		Rock Springs	10,857	Yes
	Teton	Jackson	1,046	Yes
	Uinta	Evanston	3,863	Yes
	Washakie	Worland	4,202	Yes
	Weston	Newcastle	3,395	Yes

FOLLOW-UP POSTCARD REQUEST

Date_____

PLEASE CROSS OUT ONE:

1. I (agree/disagree) with the expression of the majority opinion to question #4 as disclosed by the survey.
2. I (have/have not) changed from my former opinion.
3. This material (is/is not) beneficial to me in my work.

COMMENTS:_____

_____

_____ _____

Name Title

_____ _____

School District State

COVERING LETTER

HELEN M. SMITH CLOYD
Certified Public Accountant

1051 Lakeshore Drive - US 25
Carsonville, Michigan

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Enclosed is the summarization of the replies to the questionnaire investigating cost procedures prevalent in school districts in the United States.

Replies were received from 174 school districts located in the states of California, Florida, Illinois, Minnesota, Mississippi, Nevada, New Jersey, South Dakota, Texas, and Wyoming, a return of 74.6% of the mailed questionnaires.

Your cooperation in this study is sincerely appreciated. Your name will be kept on the mailing list to receive free informational material in the future.

Sincerely,

(Mrs.) Helen Smith Cloyd

Enclosure - postcard request

APPENDIX B

PERSONAL INTERVIEWS

Case A

The superintendent and the auditor had intended to meet with the writer but the superintendent was called away for a school consolidation meeting. Consequently, the auditor furnished the writer with the following information.

The schools in this district are unusually well equipped with five data processing machines, which were originally leased and later purchased. At the time of the interview, a small IBM 604 computer had been ordered. The machines handle all payroll, registration, and reporting records as well as the accounting records, including the general ledger. The machines are used, also, to determine the effectiveness of the teacher by correlating students' achievements on grade material with their intelligence quotients. The machines already in use saved the work of three employees and doubled the output of records. No employee was laid off due to the installation of these machines, but there were no additions to the accounting staff for the past three years despite the increase in statistical records.

The school system develops cost information on their clerical and custodial employees but not on their instructional employees. They are hopeful of developing comparative costs on the three junior high schools and two senior high schools operated by the school system.

The writer was shown the machine installations in the basement of the board of education building. Three employees were assigned to the

data processing department to handle the work of the school system which comprises 11,600 pupils and 700 teachers. The school system did not encourage any outlying districts to use their data processing equipment because this action may mean the addition of employees to their staff. They do not feel that the charges that they can make for machine operations would cover the additional costs of new employees. As more districts consolidate with them, it is anticipated that the machines will be better utilized.

The auditor stated that he had formerly taught courses in cost accounting at a business school, thus, he was very interested in the development of cost studies. This school system is well equipped to develop cost information for managerial purposes.

Case B

The results of the mailed questionnaires were discussed with the superintendent, who was very interested in the number of public school officials who indicated that they were desirous of developing cost estimates on expenditures. He stated that his school system comprised 36 schools, 950 teachers, and 14,000 pupils making it the eleventh largest school system in the state. A data processing equipment installation aids the superintendent's office to develop cost studies.

The superintendent indicated that he was particularly interested in developing costs in specific subject areas. He stated that he knows what the cost of failures were in his school system. He computed these costs in terms of classrooms occupied by the failed students, the number of teachers required for these classrooms, and the operating and maintenance

costs of the classrooms. In a discussion on "scope and sequence" charts, the superintendent became interested in the charts as a means of identifying the optimum level for teaching certain subjects. The development of costs pertaining to students' early entrance and consequent failure of beginning elementary students was another item which interested him. He doubted whether the correlation of students' intelligence quotients and achievements in certain classrooms could measure the effectiveness of the teacher due to extraneous conditions. However, he agreed that over a period of time, this device could be used as a part of a general measure of teaching competence. He stated that his greatest concern with the development of cost figures on the electronic machines was whether the operator would be sufficiently trained to recognize the many variables which affect the material obtained from the machines.

Case C

The superintendent stated that his school district comprises 8 elementary schools, one high school, and a community college. The school system operates with a $2,000,000 budget and employs 331 teachers. The annual per capita costs average $580 for the high school and community college level, and $350 for the elementary school level.

The superintendent said that his business department keeps many records and can develop cost figures whenever there is a need for it. They know the cost of non-teaching items, such as the costs of library services, guidance services, and study hall supervision. However, they have not developed costs on the teaching of fundamental courses in the school system. Costs are continuously kept for industrial arts, art,

music, vocal, and instrumental music courses. Time reports are kept by a majority, but not by all employees. The superintendent stated that he knew that certain items cost more than others. As an illustration, he said that a course in graphic arts had been added to the curriculum despite the possibility of high costs and low enrollment in such a course. This, in his opinion, indicated that there was a desire for quality education in his school system.

The superintendent said that in a recent vote to determine what types of courses and curriculum were popular, the voters in the school system voted against adult education and varsity activities. However, he stated, that both these activities were shortly back in the curriculum on a limited basis and that the students sold tickets to finance their varsity activities.

Case B

The superintendent was very interested and enthusiastic about developing cost information. He felt that information of this type would be needed more and more in the future. He stated that he had recently made a study of custodial services in his school system. As a result, the administrative offices are in a renovated old school building that had been built in 1875. He stated that the use of the building as a school was abandoned because its maintenance costs were $2.36 per cost unit as compared with $1.50 per cost unit for over-all building costs. He explained that his new business manager had retired from operating his own hardware business before he took his present job and, therefore, he knew a good deal about maintenance costs, a knowledge which had been very helpful in the study of custodial costs.

The superintendent was interested in developing truck costs because of the varying maintenance costs of trucks, regardless of their age. When the writer told him about the use of "scope and sequence" charts to determine the extent of instruction in certain fundamental areas, the superintendent said that he was desirous of developing costs for English and language arts.

A Burroughs bookkeeping machine had been installed in the accounting offices of the school district. Payroll and transportation expenses were being analyzed presently; other accounting procedures will be converted from manual to machine operation in the near future.

The superintendent filled out the information requested on the questionnaire giving the following statistics:

> The school district operates 11 schools on the elementary and secondary level with a staff of 184 teachers.
>
> Average daily enrollment is estimated at 4,350 pupils with a per capita cost of $335 for each pupil.
>
> There are eight general accounting and two cost accounting records in use.
>
> There are two employees assigned to bookkeeping duties and three types of mechanical equipment are used by them.
>
> Per pupil units are used for averaging expenditures.

While the superintendent did not have cost approximations on either the teaching of subjects or non-teaching costs, he felt very strongly that information of this type is useful. He stated that the state auditors offered no help in developing cost approximations; their only function was to check on the general accounting records.

Case E

The superintendent of schools was not available to meet with the writer, but the principal of the high school was prepared to answer questions. This officer indicated immediately that he thought cost information was useful and desirable in school district accounting. He had cost information on driver education but not on the costs of course units.

This school district includes five elementary schools and one high school with a total of 81 teachers. The per capita costs are approximately $300, which the principal stated was $8 or $9 above the average for the state. The school district has the use of thirteen general accounting and four cost accounting records. Four employees were assigned to bookkeeping work and they had three different types of mechanical equipment available to them. Per pupil units are used for averaging expenditures. Time reports are kept by all clerical and custodial employees but not by the administrative or instructional employees.

The principal was very cooperative and interested in the survey. The superintendent sent a letter regretting that he had not been available for the interview.

Case F

The superintendent was unavoidably occupied with class scheduling during the time of the interview appointment on August 28. He indicated that he did not feel that detailed cost information was useful to his school district. In his opinion, per pupil expenditures were useful in

discussions with the faculty or with other interested groups. The writer did not have an opportunity to discuss with the superintendent the uses to which cost records could be applied.

The superintendent stated that his business department did have records on non-teaching costs but not on the teaching of specific courses. Time reports were not kept by all employees in the school district. The superintendent said that he knew personally the expenses of the school district and that he did not feel that detailed cost records would be of value in financial management.

Case G

The superintendent stated that his school district was so small that he was aware of detailed school costs without the use of cost analyses. He indicated that recently he had analyzed transportation costs for his district and the figure came to 31¢ a mile, which was less than many of the surrounding districts. He was very particular about expenses in connection with school buses, trading-in the vehicles at the end of three to eight years depending on the use to which the vehicle had been put.

This school system has the fourth lowest per pupil costs in the state, the superintendent said. The small high school has approximately 430 students. A complete study of athletic costs had been completed recently, and other expense items, he felt, would be analyzed when it became necessary to do so within two or three year periods. The superintendent was very conscious of costs but did not feel that detailed cost studies were necessary in a small school district.

Case H

The superintendent, who was new in his position, requested the business manager to meet with the writer. The business manager was also new in his position and he felt unsure that he was capable of answering many questions with regard to the business department. However, he had been a superintendent at another school district and he was familiar with school accounts in general.

The school district is located in an area where there had been a rapid development from three schools in 1949 to eight schools at the present time. Consequently, the district found that it was difficult to keep up with the necessary paper work in connection with the enlarged enrollments. There were six clerical employees in the business department, and, while the business manager stated that the development of cost records would be very helpful, he did not think that these records could be developed in the near future due to inadequate help and the heavy clerical work with which they were faced. He was very interested in the methods of developing cost information, however, and indicated that after he became familiar with his position, he would have an opportunity to consider this aspect of accounting more carefully.

Case I

The assistant superintendent in charge of finance told the writer that he was not interested in cutting costs. He stated that the costs in this public school system were always high, but they were able to explain their costs. He was of the opinion that high costs and quality

education were synonymous. The superintendent's office, he declared, emphasized the positive features of their educational program whenever they are questioned about their high costs.

The assistant superintendent stated that his office would like to develop cost figures but they had no intention of disclosing it to the public. He claimed that the superintendent of schools' office was very politically minded and a strong public relations program was in force. He felt that disclosure of cost figures might interfere with their public relations program.

The interviewee felt that maintenance costs in their schools were high but "they wanted to keep up the buildings which had been entrusted to them." The writer was told that the school system had to keep salaries high or neighboring cities would lure away their master teachers. The assistant superintendent stated that in order to cut their costs they were considering using larger classrooms in high income areas where the intelligence quotients of the students was surmised to be high. Also, they utilized auditoriums for chemistry classes and small laboratories for working purposes.

The school district's instructional expenses were approximately $9,000,000 during the 1953-54 school year. As the accounting work for such large expenditures would be voluminous, the writer queried whether this school system used data processing machines in their accounting department. The assistant superintendent replied that they had considered the use of these machines but there was no need for hurry in this direction. He thought that if, through the use of these machines, cost information

were developed regularly, the public might expect to look at it and compare it with costs of other school districts. He stated that he did not approve of disclosing cost information to P. T. A. and other interested groups because, in his opinion, these groups did not know what financial information meant. His office did not have a systemized method of providing cost analyses; and such internal information as is needed is developed when the superintendent of schools asks for it.

Case J

The interview disclosed that the superintendent of schools was very alert to controlling school costs. Some of the methods which this school system uses to control costs are: (1) homogeneous groupings of students to reduce failures (which cause additional instructional expense); (2) low teacher salary schedule due to the proximity of a state university whence beginning teachers are recruited; (3) low maintenance costs of buildings, a majority of which are new, and (4) no provision being made for instruction by special teachers. Control over supplies is exercised by the use of a centralized storehouse.

The superintendent's office was attempting to revise the accounting system in order to cut down clerical costs. The school district is considering the installation of data processing equipment because they are encountering large clerical costs in issuing 6,000 payroll checks monthly, and additional difficulty in processing year-end withholding forms with manual and bookkeeping machine methods.

Individual schools are asked periodically to develop per pupil costs which are then compared with the other schools in the system. The

schools use the TV channels for the teaching of languages. These courses are taught by "master" teachers and this method was instituted in order to reduce costs. The interviewee stated that the school district did not have any difficulty asking the public for additional money due to their good public relations program.

Statistically, this school system operates 95 elementary schools, 2 elementary-junior high schools, 15 junior high schools, 3 junior-senior high schools, 5 senior high schools, and 3 special schools, making a total of 123 buildings. The total day school enrollment in 1960 was 83,631 pupils, and operating cost per pupil was $299.29. During the school year 1960-61, the system employed 2,986 instructional and 904 non-instructional employees.

APPENDIX C

STATE ACCOUNTING PROVISIONS

Alabama

A uniform accounting system is prescribed for local schools in Alabama. A single entry system is in use in this state. The main control for the accounts of the school district is provided by a General Cash Ledger into which are entered in columns the cash receipts and payments transactions from receipt books and checkbooks. Budgetary breakdown into the following accounts is provided in the General Cash Ledger:

Non Budgetary

Total Budgetary

- Instruction
  - Teachers' Salaries
    - Elementary
    - High
  - Supplies
  - Library
- Operation
  - Wages of Janitor
  - Janitors' Supplies
- Maintenance - Repair, Replacement and Upkeep
- Auxiliary Agencies
  - Transportation
  - Other
- Fixed Charges
  - Insurance
  - Rent
  - Other

Capital Outlay
  New Grounds and Building
  New Equipment
  Alterations

Debt Service

The "ledger" is maintained on a cumulative basis for the year, monthly totals from this record constitute "Monthly Financial Reports to the Superintendent"; the last month of the year totals constitute "Annual Financial Report to the Superintendent." The use of subsidiary ledger accounts for receivables and payables is recommended; credits being made directly to the vendors' ledger accounts on the approval of invoices, debits being made the time of the recording of the cash payments in the General Cash Ledger. The uniform system provides for a modified cash basis of accounting for accounts receivables; and for recording accounts payable on an accrual basis in the subsidiary ledger only.

The analysis of the school lunch program provides for the itemizing of income and expenditures fully and completely for each day of the month. This analysis is consistent with proper cost accounting methods. This procedure is necessary to comply with the requirements of the National School Lunch Program.

Despite the shortcomings of this single entry system, cost accounting analyses could be made of the various budgetary expenses showing breakdowns into areas of responsibility or functional lines. Alabama's recommended accounting system for school districts will permit further subclassifications of the accounts to show per unit costs as desired by the school management. The accounting systemmeets the conditions of the criteria.

Alaska

A letter from Mr. Jerry M. Waddell, Chief Accountant in the Office of Commissioner of Education indicated that Alaska since the printing of the Office of Education's Handbook II in 1957 has been using that publication as a guide. An accounting manual is contemplated for publication in the future under the provisions of the National Defense Education Act. Conformity to the recommendations of the Handbook II meets the conditions of the criteria, including budgetary procedures.

Arizona

The preface to the Accounting and Code Handbook carries the following comment from Mr. C. L. Harkins, Superintendent of Public Instruction:[1]

> No successful business of today would attempt to operate without an adequate, accurate, and uniform accounting system. No one will deny that the operation of a modern school requires all the "know-how" of successful business operation. In fact, the efficient operation of the schools' business is more important, and more exacting than most any private enterprise.

The uniform accounting system imposed on the school districts shows a refinement of accounting classifications which reflects the attitude embodied in the statement above.

The expenditure code has the following main headings which are further classified into more numerous account titles:

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[1]Arizona State Department of Public Instruction, Accounting and Code Handbook, 1955, (Phoenix: State Superintendent of Public Instruction, 1955).

Account Series	Account	Number of Sub-accounts
1000	Administration	9
2000	Instruction	12
3000	Operation of School Plant	4
4000	Maintenance of School Plant	3
5000	Auxiliary Agencies	11
6000	Fixed Charges	7
7000	Capital Outlay	5
8000	Tuition to Other Districts	-

Disbursements for expenses are paid by the County Superintendents who keep records of the revenue, cash control, budget, warrants, and fund accounts for each school district within the county boundaries. Strict procedural control is exercised over monies received and paid out. The school accounting system not only meets the requirements of the criteria but also shows a progressive attitude looking toward accounting improvements.

Arkansas

The Department of Education of Arkansas approves accounting forms called CODE (meaning Comptroller's Office and Department of Education forms). Code 1 is a summary form for recording income and expenditures from other Codes which are numbered from 2 through 13. A double entry system is used with Code 1 as a summary journal for debits and credits to the several accounts. No ledger is used because the totals shown in Code 1 constitute the entries for the period (monthly for large districts and quarterly for small districts). Thus, this form is called a "ledger" rather than a journal.

Control is exercised over expenditures by comparing the budgeted figures with accumulated expenditures each time an entry is made in the several Codes. The Codes and their functions are as follows:

Code 1 Summary Receipts and Expenditures

2 Teachers' Salary Fund (showing gross amount of warrants and deductions)

3 Warrant Register - Operating Fund Accounts
Instructional Expense
Operation of School Plant
Maintenance
Auxiliary Service
Fixed Charges
Capital Outlay

4 Debt Service Fund

5 Post Dated Warrants (obligations due)

6 Record of School Bonds

7 Teachers' Payroll Ledger (individual accounts)

8 School Employee Payroll Ledger (individual accounts)

9 Record of School Bus Purchases (including depreciation allowances)

10 Insurance Record (register)

11 Monthly Summary of Operation of School Buses

12 Record of Buildings

13 Record of Real Estate

14 School Board Minutes

Instructions for the use of the several Codes is issued by the Budgets and Loans Division of the State Department of Education and each school district is audited annually by the School Audit Division.

The completeness of the records required to be used by school districts in Arkansas is remarkable. The records meet the requirements of the criteria, and with respect to transportation costs, an introduction to costing procedures is already made. The accounting terminology is being

changed to conform to the Office of Education Handbook II which will enable these school districts to profit by comparisons with national figures.

California

The following booklets relating to accounting are issued by the California State Department of Education:

Title	Date of Issue
California School Accounting Manual	1951
Supplement to California School Accounting Manual	1954
Administration of the School Insurance Program	1956
Administration of the School Food Service Program	1957
Accounting Procedures for Student Organizations	1957
School District Property and Equipment Accounting	1957
Attendance Accounting in California Public Schools	1957

A study of these booklets indicates that the State Department of Education has been very active in devising, formulating, and recommending good accounting procedures to the school districts in California. No uniform accounting forms are required or issued by the State Department because, "Accounting methods and devices may vary and must vary because of the fact there is such a range in size of districts. Many districts find standard ledger forms, available in great variety from commercial stationers, suitable for their needs. The larger districts usually require special designs for some forms."[1]

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[1]California State Department of Education, California School Accounting Manual, Bulletin of the California State Department of Education, (Sacramento: California State Department of Education, 1951), p. v.

General ledger accounting is recommended although not required. Other suggestions are the use of double entry accounting, the preparation of financial statements (balance sheet and an operating statement), no provisions for depreciation (except for statistical cost studies), proper budget planning, and fund accounting with provisions for appropriations and encumbrances. The accrual basis is used for recording expenditures. An exactitude in accounting procedures and terminology is evident in the instructions to the school districts in the several booklets issued by the State Department of Education. Expenditure classifications are:

Current Expense

- Administration
- Instruction
- Auxiliary Services
- Operation of School Plant
- Maintenance of School Plant
- Fixed Charges (Prepaid Expense)
- Transportation of Pupils
- Food Service
- Community Services

Capital Outlay

The above accounts have 41 sub-classifications in the chart of accounts and the following suggestion is made for further subordinate accounts:[1]

> Many school districts find that subdivision or expansion of the expenditure classes contained in the foregoing outline, in accordance with, or similar to, the unnumbered and unlettered classes of expenditure by object, activity, or organized unit may be desirable for local administrative purposes.

---

[1] Ibid., p. 12.

School district accounting as prescribed by California regulations not only meets the requirements of the criteria but excels with suggestions and instructions in conformity with recognized accounting theory.

Colorado

Uniform budget and annual reports are used by all school districts in Colorado. The standard accounting system is patterned on the recommendations of Handbook II of the Office of Education and uses a simplified double entry system. This system is for the smaller school district which comprises 90% of the school districts in the state (those with fifty or less staff members); and larger school systems are encouraged to develop a system suitable for their particular needs.

The basic recording document is a Financial Record which consists of monthly summaries of receipts and disbursements. Warrants are paid by the County Treasurer and are analyzed with respect to type of fund disbursement and type of expense account, and then summarized in the Financial Record. The chart of accounts has these classifications:

Administration
Instruction
Attendance Services
Health Services
Pupil Transportation Services
Operation of Plant and Equipment
Maintenance of Plant and Equipment
Fixed Charges
Food Services
Student-Body Activities
Community Services
Capital Outlay
Debt Service
Outgoing Transfers

The classification of accounts to be kept by the school boards is as follows:

Administrative Control
Instruction
Operation of Plant
Repairs and Replacements (Maintenance)
Fixed Charges
Auxiliary Services
  Health
  Adult Education
  Attendance
  Transportation
Capital Outlay
Debt Service

There are 49 additional sub-classifications listed in the chart of accounts. The accounting records are kept on distribution sheets which record receipts and disbursements.

Budgets for school districts which receive state funds are sent to the State Board of Education for approval before the beginning of the school year. The state law requires that each district shall keep detailed accounts of all receipts and expenditures in the classifications prescribed by the Budget Commission.

All invoices, including payroll disbursements based on a uniform salary act, are paid by the State Treasurer after transmittal on approved forms and signed by the local school board. The Budget Commission audits the school records and annual reports which are prepared by the school boards in conformity with the uniform accounting system. Transportation costs are also paid from state funds by the State Board of Education. Stricter financial control is exercised over 1-2-3 teacher schools whose budgets are prepared by the State Board of Education.

The means for developing cost information is inherent in the account classifications and, therefore, the state accounting recommendations meet the requirements of the criteria. However, it is problematical whether, with the strict control exercised by the State of Delaware, it is incumbent upon the school boards or the State Departmentof Education to develop cost studies for the benefit of the school districts.

District of Columbia

The public schools of the District of Columbia conduct their systems of accounting as prescribed by governmental regulations in the Federal Government Accounting Manual. Mr. Bert K. Adams, Finance Officer, stated in a letter to the writer that the schools maintain two types of accounts: allotments and costs. These accounts are recorded in an Allotment Ledger for receipts and a Cost Ledger for expenditures. Comparisons of the accounts maintained by the schools and those maintained by the Accounting Officer of the District of Columbia provide a check on the accuracy of the accounting. In addition, post audits are conducted by the auditors of the General Accounting Office of the U. S. Government and by the auditors of the District of Columbia. The public school budget office determines the amounts available for each account.

The operation of the accounting system of the District of Columbia is being improved in conjunction with improvements in accounting for the Federal Government. Public Law 863, enacted in 1956, established "the principles of budgeting in terms of costs and for accounting on the

accrual basis."[1] In connection with the District of Columbia, the General Accounting Office and the Budget Office "developed a standard classification for coding which, when fully implemented, will permit a more complete application of punchcard methods to accounting for all agency budgetary transactions."[2]

While the criteria conditions are being met in this circumstance, it is improbable that cost accounting methods can be developed in this school system unless such policies are to be used in the Federal Government. While individual administrators can use cost studies in their particular schools, it is improbable, that without Federal sponsorship, such studies will be utilized extensively.

Florida

The schools in Florida are administered on a county-unit basis. As approximately 50% of the school funds are appropriated by the State, a close control is exercised over the county programs.

Uniform accounting is used throughout the state with variations in printed forms for those counties using data processing and bookkeeping machines. The school budgets for each county are approved by the State Department of Education and this agency also reviews the monthly statements. Annual audits are conducted by the State Audit Section (not a part of the Department of Education).

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[1]U. S., Secretary of the Treasury, Director, Bureau of the Budget, Comptroller General of the United States, 8th Annual Progress Report Under the Joint Program to Improve Accounting in the Federal Government, (Washington, D. C.: U. S. Government Printing Office, 1957), preface.

[2]Ibid., p. 93.

The county superintendents of schools keep a record of the expenditures for each school within their jurisdiction. Account classifications for expenditures are:

Account	Number of Sub-accounts
General Control (Administration)	11
Instruction	10
Operation of Plant	4
Maintenance - Repairs	-
Auxiliary Agencies	7
Fixed Charges	5
Other Schools	2
Capital Outlay	8
Debt Service	10

The annual report requires that the county superintendent submit a comprehensive account of the year's operations with detailed analyses of transportation, instructional salaries, and insurance. The uniform accounting system in Florida is a well-integrated system of control over the financial transactions of the county-unit district. The uniform accounting system meets the specifications of the criteria.

Mr. Donald R. Thomsen, Assistant in Finance, indicated to the writer that Florida is changing its accounting to conform more closely with the Office of Education Handbook II recommendations, but the changes will be only in the grouping of the accounts within the major classifications listed above.

Georgia

The State of Georgia does not have any published booklets on financial accounting for dissemination to the school districts. The

The account numbers for these classifications correspond to those listed in the Office of Education Handbook II. There are 64 sub-classifications of the major accounts recommended for the use of the school districts. The State of Colorado was one of the first to convert their accounting system to reflect the improvements suggested by the Office of Education Handbook II. Their system meets the requirements of the criteria and contains a base for cost accounting records.

Connecticut

A letter from Mr. Willis H. Umberger, Chief of the Bureau of Federal-State-Local Relations states that the Connecticut State Department of Education does not require any particular accounting forms or procedures but recommends that the school districts follow the accounting classifications shown in the Office of Education Handbook II. Budgetary procedures, year-end report forms are required using the accounting terminology and other suggestions advocated by the Handbook. The users of the Office of Education Handbook II meet the requirements of the criteria for accounting records and, therefore, the school districts in this state have the essential information necessary for preparing cost reports.

Delaware

Mr. R. L. Herbst, Assistant Superintendent in Charge of Business Administration, sent to the writer the booklet which he had written entitled, "A Handbook for Boards of School Trustees in Delaware," published in 1954.

forms which the state provides to the school districts are:

Journal - Record of receipts and payments

Ledger sheets - Permanent record of classified receipts and payments other than personnel

Check register - Payroll

There are 123 county-unit systems in the state, which is the predominant type of school organization. A letter from Mr. Allen C. Smith, Director, Division of Administration, to the writer indicates that the State does not exercise control over the accounting systems in the county-units. With the scant information that is available on school district accounting in this state, it cannot be determined that the criteria requirements are being satisfied, except with respect to the use of a budget. Therefore, unless further study is undertaken on an individual county unit basis, there can be no statement on the status of cost accounting possibilities in the Georgia school districts.

Hawaii

Hawaii retains the statewide system which prevailed during the territorial period. The State of Hawaii gives allotments to the schools; issues purchase orders for them, processes invoices, and makes payments on behalf of the schools. School budgets are prepared by the principals, and the accounting system comprises a general ledger, cash journal, and check register. The accrual method for school accounts is dismissed as too cumbersome and the modified cash basis is advised. A double-entry system is recommended in the accounting manual issued by the Superintendent

of Public Instruction to cover internal accounting activities by the school districts. The accounts for which the school keeps records are:

Cash
Investments
Funds
  Book Rental
  Cafeteria
  School Fees
  School Activities
  Trust and Agency Fund (P. T. A., R. O. T. C., etc.)

As the major accounting records are retained by the Department of Public Instruction for each school, only incidental cost accounting studies can be undertaken by the individual school administrator. Thus, there is no incentive to develop cost accounting records on the local level. The conditions of the criteria are met, however, on the state level where cost studies can be developed from the general accounting records and from the reports submitted by the schools.

Idaho

By legislative action (House Bill No. 245), an accounting committee was commissioned to establish a uniform accounting system for the school districts in the State of Idaho by July 1, 1959. Improvements in accounting effected by this committee are physical verification of inventories, complete audits biennially, and detailed annual school district reports. The State Board of Education supervises and examines the books and accounts of each school district. The state advocates proper budgetary procedures with the use of the accounting system. The uniform accounting system pertains to filing uniform reports and using prescribed account classifications,

but no attempt is made to enforce the use of uniform accounting forms. Accounts are maintained for the following expenditures:

Account	Number of Sub-accounts
Administration	6
Instruction	14
Operation of Physical Plant	4
Maintenance of Plant	-
Auxiliary Agencies	18
Fixed Charges	3
Capital Outlay	19
Debt Service	2

The school districts are required to submit cost analyses of transportation expenses, including provisions for depreciation of school buses. A state minimum salary schedule for teachers is in effect and detailed reports of salaries paid to teachers is required to be filed with the State Board of Education.

The revised accounting system in force typifies the best and latest material in use in public school systems. The exactitudes of the criteria are met in this uniform accounting system. A step in the direction of the utilization of cost accounting methods has been made with the introduction of transportation cost analyses.

Illinois

Illinois was changing to the accounting terminology recommended in the Office of Education Handbook II, but as of August 1961, the change had not yet been effected. The changes to be made will enlarge the sub-classifications of the accounts. Prior to the change, the following accounts, which correspond very closely with the classifications sponsored

by the Office of Education. The State Department of Public Instruction advocates proper budgetary procedures. The annual reports submitted by the school districts are examined by the county superintendents of schools before they are filed with the State Department of Public Instruction. The conditions of the criteria are met in this accounting system.

Indiana

A system of uniform accounting prevails in Indiana with control exercised over accounting forms and procedures by the State Board of Accounts. The Indiana Accounting Handbook prescribes 43 forms for the use of school districts.

Entries are made in the Funds Ledger of Receipts and Disbursements, which is a distribution sheet with columns for the different classifications of receipts and expenditures. Entries to coincide with the expenditure columns of the Funds Ledger are made in the Functional Distribution Ledger which is numbered with the account letters of the functional expenditures. These accounts are:

Account Letter	Account
A	Administrative
B	Instructional
C	Coordinate Activities (library, transportation, etc.)
D	Operation of School Plant
E	Maintenance
F	Fixed Charges
G	Auxiliary Activities (cafeteria, adult education, etc.)
H	Debt Payments
I	Capital Outlays (new)
J	Capital Outlays (old)

These accounts are subdivided into 131 classifications which permit a minutiae of accounting information to the administrator. Special regulations are written for the handling of school extra-curricular activities. Proper budgetary procedures are advocated by the State Board of Accounts.

The accounting system prescribed in the State of Indiana amply meets the qualifications of the criteria. When accounts are subdivided to the extent indicated in the uniform accounting system, the interrelations of cost factors becomes discernible to the administrator.

Iowa

The State of Iowa provides in its Uniform Financial Accounting Manual a well-defined and integrated system of general accounting which groups expenditures along the following lines:

General Control (Administrative)
Instruction
Auxiliary Services
Operation of Plant
Maintenance
Fixed Charges
Capital Outlay
Debt Service

These accounts are sub-classified into 35 lesser items. Budgeted figures are also shown in the accounts for comparison purposes.

Four pages in the Manual are devoted to a description of the computation of unit costs by departments; these departments representing separate schools. Direct charges, where applicable, are advocated for allocating expenditures and other methods, well recognized in cost accounting, such as floor space allocations, etc., are described and illustrated for the use of the administrator. The school district accounting in this state amply meets the conditions of the criteria.

Kansas

Annual reports by the county superintendents in Kansas show receipts and expenditures as well as budgeted figures for all school districts under county supervision. Expenditures are listed for the following items:

General Control - Administrative
Instruction
Operation
Fixed Charges
Auxiliary Agencies
Pupil Transportation
Maintenance
Capital Outlay

The financial summary is compiled by the county superintendent from annual reports submitted by the boards of education of the several cities or by the teacher, clerk, or treasurer of the common, rural high, and community high school districts. The annual report shows a complete analysis of transportation expenditures.

A letter to the writer from Mrs. Kay Kampschroeder, Assistant Director of School Finance in the State Department of Public Instruction, stated that there is no uniform accounting system for school districts in that state but many reporting forms are furnished to schools by that department. As sub-classifications of the major accounting classifications are requested from the school districts in the compiling of the report forms to the State Department of Public Instruction, the conditions of the criteria are met in this state.

Kentucky

This state has 49 county-units which places the county as the

prevailing reporting unit. Reports by both the county and independent school districts are subject to the regulations for uniform school financial accounting which had been revised in June 1958 to conform to the recommendations of Handbook II of the Office of Education. In addition to this revision, improvements were made in auditing procedures by the Department of Education, in control procedures for accounting for athletic activities, in policies for issuing checks, and in policies and regulations relating to budgets, bonds, and insurance.

The expenditure nomenclature of the Kentucky chart of accounts is almost identical with that shown in Handbook II except that the accounts in the Handbook are subdivided to a larger extent. The changes that were made reflect a greater concern with costs then is evident in the Federal manual. Indicative of this sentiment, is a statement in the introduction to the Kentucky manual:[1]

> It will be expedient for many local districts to maintain an even more detailed analysis of their financial activities than is provided herein.

The accounting system instituted in Kentucky complies with the requirements of the criteria.

Louisiana

Except for three independent city systems, the schools of Louisiana are administered by the parish (county) unit. Louisiana does not have a

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[1]Kentucky Department of Education, Uniform School Financial Accounting, (Frankfort: Department of Education, 1958), p. 287.

uniform accounting system nor is there any indication that the county records are checked by any state agency. The budget, however, is approved by the State Budget Committee.

Annual statistical reports are required to be filed with the State Department of Education listing receipts and expenditures. The expenditure accounts show the following classifications:

General Control (Administrative)
Instructional - White
Negro
Operation of Plant
Maintenance of Plant
Auxiliary Agencies
Fixed Charges
Capital Outlay
Debt Service

There are 130 sub-classifications of the major account classifications. Inventories of parish-owned property is accounted for in the annual report together with a cost breakdown of transportation expenditures. Salaries to the teachers are based on a state-wide schedule enacted by the legislature. The basis for developing cost accounting records is evident in the information requested in the annual report and budget from each reporting unit. The accounting requirements in this state satisfy the requirements of the criteria.

Maine

The State of Maine has adopted the classification of accounts recommended in the Office of Education Handbook II. The accounting records consist of distribution sheets with columns for the account classifications separated into elementary and secondary sections.

The annual reports are prepared by transferring the totals of the distribution sheets to the report summary. Budget and annual reports are required of each school district. There is no indication that cost accounting methods are in use in any of the independent, supervisory union, or town school systems. As Handbook II of the Office of Education is the manual for accounting purposes in the State of Maine, the conditions of the criteria are met.

Maryland

According to the Maryland School Code, the county superintendents bear the responsibility for the maintenance of an adequate set of accounting records. Except for the City of Baltimore, the school districts are operated as a part of the county in which they are situated.

There is no uniform account classification system in use but the State Department of Education recommends that the system in use be checked periodically with outside auditors to determine whether the system conforms to good accounting principles. Annual financial reports are submitted to the State Department of Education and are published for interested citizens. Procedures on internal control, contents of agreements between the auditor and the board of education, pro forma audit programs, and standards of audit reporting are defined in a procedural bulletin issued by the State Department of Education.

A suggested procedure for recording receipts and disbursements is also contained in the bulletin promulgated by the State Department, which is to be used by individual schools for internal activities. A single entry cash receipts and disbursements record which employs the

modified cash basis of accounting is the method recommended by the State Department. There is no recommendation for account classifications or for the use of cost methods for analyzing expenditures because centralized accounting is conducted by the counties. An itemized budget is required by the State Code from each county as well as an audit report of income and expenditures. While the lack of control over expenditure groupings may not be conducive to cost accounting developments, the conditions of the criteria are met due to the mandatory requirements for proper accounting procedures which are verified by independent auditors.

Massachusetts

The Department of Education of the Commonwealth of Massachusetts requires that city and superintendency school unions file annual reports disclosing complete financial figures but there is no requirement that the reporting unit adopt a uniform system of accounts. Information on the following types of expenditures is requested in the annual report:

General Control (Administrative)
Instruction
Operation of School Plant
Maintenance of School Plant
Auxiliary Agencies
Capital Outlay

Except for the major groupings of general control and capital outlay, the expenditures are required to be apportioned between day schools (elementary, junior high, and senior high), evening schools (elementary and high), and vacation schools. Annual budgets are required by state law.

A letter from Mr. John P. McMorrow, Director, Divisions of Research and Statistics of the Department of Education, to the writer indicated that the Department was "in the process of suggesting the accounting methods outlined in Federal Handbook #2." The expenditure classifications listed in this section conform to the generally accepted classifications for school districts, and it may be presumed that any revisions will not be of major importance. The account classifications in this state conform to the specifications of the criteria.

Michigan

Michigan's manual of instructions for financial reporting has been revised to conform to the accounting recommendations in the Office of Education Handbook II. Although the classifications are basically the same, the accounts do not bear the same account numbers as recommended by the Handbook.

Michigan also prescribes uniform accounting for school activities by reporting these receipts and disbursements under fund accounting principles. An annual statistical and financial report is filed with the county superintendent of schools, and requirements for the preparation of budgets by school districts are stated in the general school laws. The conditions of the criteria are met in the uniform accounting system employed in Michigan.

Minnesota

Minnesota requires that the schools maintain their accounting records in conformity with their manual, "Uniform Financial Accounting for Minnesota School Districts." The financial accounting system designates that annual reports be filed with the county superintendent of schools by July 10. The following expenditure account classifications are budgeted and shown in both the records and the annual report:

Administration
Instruction
Operation of Plant
Repair and Upkeep (Maintenance) of Plant
Auxiliary Services
Fixed Charges
Transportation
Capital Outlay
Debt Service

The major account classifications are subdivided into 55 lesser groups. These classifications are used in connection with the following funds:

General
Community School Lunch
Veterans' Training
School Library
Capital Outlay
Building
Debt Redemption
School Auxiliary
Trust

The requirements of the criteria are met in the accounting system which is recommended for the school districts in Minnesota for this system is similar in the extent of its account classifications to the system suggested by the Office of Education Handbook II.

Mississippi

The State Auditing Department has prepared accounting forms and a bulletin for the use of counties and separate school districts in the State of Mississippi. Each school district which is a part of a county unit, submits its proposed school budget to the County Superintendent of Education for approval. In turn, the County Superintendent submits the county budget for approval to the State Department of Education. Separate school districts submit their budgets directly to the State Department of Education. The classification of expenditure accounts shown on these budgets is as follows:

Administration
Instruction
  High Schools
  Elementary
Transportation
Auxiliary Services
Operation and Maintenance of School Plant
Other Costs
Capital Outlay and Non-operating Costs

There are 44 additional classifications of the major accounts. The comprehensive accounting manual of 58 pages describes the accurate handling of the accounting records, and the preparation of annual reports and budgets. The uniform system in Mississippi meets the conditions of the criteria.

Missouri

The Missouri uniform system of accounts contains this quotation in its preface:[1]

> The basic structure of good school business administration is a sound system of general accounts, a set of accurate cost accounts, trust-worthy auditing, intelligent budgeting, and a series of popular and technical reports for parents, school boards, state departments of education, and national agencies.

The accounting system provides for the accumulation of current costs, comparisons with budgeted figures, and the use of appropriation and encumbrance accounts. Vouchers are recommended for recording disbursements. Entries for expenditures are made in distribution "ledgers" provided with columns into which the amounts for the separate accounts are entered. The titles of the accounts are those recommended by the Office of Education Handbook II. The same classification of accounts had been in use prior to the adoption of the Handbook II series of account numbers. It was necessary to change only the account numbers to conform to the national classification.

Cost studies are recommended for use in allocating salaries to pertinent cost centers, such as attendance, health, transportation, etc. Also, the total cost of instruction is analyzed to show amounts spent for teaching, supervisory, and instructional supplies. Special regulations relating to the handling of school lunch and activity monies are in effect

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[1]Missouri State Department of Education, Missouri Uniform Financial Accounting System, (Jefferson City: Missouri State Department of Education, 1954), p.5.

under the direction of the State Department of Education. The school records are audited biennially as provided by Missouri General Assembly Senate Bill 107, dated August 29, 1955.

This accounting system, as devised, is in conformity with generally accepted accounting principles as well as embodying the recommendations of the Office of Education Handbook II. Supplementary cost records are already being used, and the requirements for meeting the conditions of the criteria are present in this accounting system.

Montana

Montana has no uniform accounting system in effect, but by state law, the trustees of the school district are to provide for a system of bookkeeping and an annual audit of the extra-curricular funds. It is the duty of the school board budget supervisors to approve the annual budget. Information is furnished to the Office of Education in Washington, D. C. on the costs of administration, instruction, operation of school plant, maintenance of school plant, auxiliary school services, and fixed charges. While the writer was not furnished any information relative to the implementation of the accounting records, the conditions of the criteria are met based on the information furnished by the State Department of Public Instruction.

Nebraska

The Department of Education of Nebraska states in its handbook of instructions for uniform financial accounting that the Office of Education Handbook II was used as a guide in departmentalizing income

and expenses. Nine major departments are used:

Administration
Instruction
Other School Services
Operation of Plant
Maintenance of Plant
Fixed Charges
Capital Outlay
Community Services
  Summer Schools
  Adult Education
Debt Service and Transfers

Each of the departments is subdivided making a total of 63 subdivisions.

Neither the nomenclature nor the series of account numbers conform to those suggested in Handbook II of the Office of Education; however, the broad categories suggested by the Handbook are evident in Nebraska's uniform accounting system. Funds accounting is provided in the instructions in the state accounting manual as well as the use of a continuing budget record. The conditions of the criteria are satisfied in the accounting system recommended by the State Department of Education based on the material in Nebraska's 47-page accounting manual.

Nevada

The Nevada school laws require that county school districts prepare budgets, publish a statement of school district expenditures quarterly, and cause the school books to be audited at least biennially. Nevada's school system is composed of 17 county-units. Budget classifications are patterned after the Office of Education's Handbook II, except that the series of numbers is not as expansive. The account classifications are:

Administration
Instruction
Auxiliary Services
  Attendance and Health
  School Lunch Program
Transportation of Pupils
Operation of Plant
Maintenance of Plant
Fixed Charges
Evening Schools, Summer Schools,
  and Community Services
Capital Outlay
Transfers
Debt Service

Detailed costs are kept for transportation, and evening and summer schools expenditures. There are 65 subdivisions of the above accounts enabling the school administrator to accumulate and analyze costs relating to specific activities. This system of accounts meets the essentials of the criteria and establishes the basis for developing cost analyses.

New Hampshire

School districts in this state are required to submit to the Department of Education financial budgets and annual reports in which are disclosed expenditures in the following groupings:

Administration
Instruction
Operation of School Plant
Maintenance of School Plant
Auxiliary Activities
Fixed Charges
Capital Outlay
Debt and Interest
Adult Education

There are 30 sub-classifications of the above accounts. A balance sheet disclosing assets, liabilities, and surplus is also prepared.

Mr. Paul R. Fillion, Chief, Division of Administration, indicated to the writer that the Department of Education was in the process of developing a new manual for financial accounting procedures. The classification of accounts for school districts in New Hampshire conforms to the general grouping of accounts as recommended by the Office of Education Handbook II, and the accounting system also conforms to the specifications of the criteria.

New Jersey

The Department of Public Instruction requires that school districts maintain their records according to the uniform accounting system prescribed by their office. It is necessary for the school districts to distribute their costs to day, evening, summer, or special classes; by types of schools, such as kindergarten, elementary, etc.; and by school buildings. Budgets are a part of the accounting system and their use is required. The major classification of accounts are:

Administration
Instruction
Operation
Maintenance
Coordinate Activities (Attendance and Health)
Auxiliary Agencies
Fixed Charges
Capital Outlay

The accounts are subdivided into 100 separate classifications to permit control over specific items. Cost records are kept for property, insurance, and supplies.

A revision of the accounting system is in process although the

the major classifications conform to the Office of Education Handbook II. This accounting system is based on generally accepted accounting principles and meets the conditions of the criteria.

New Mexico

A uniform system of accounting is in effect under the direction of the Public School Finance Division of the Department of Finance and Administration. Budgets, monthly reports showing unencumbered budget balances, annual physical inventory-taking, and annual audits are required. Control accounts are provided for the following items:

Account	Number of Sub-accounts
General Control	10
Instructional Services	8
Operation of Plant	4
Auxiliary Agencies	6
Bus Transportation	4
Direct Charge (Fixed Charges)	8

The accounts are entered in a distribution ledger where the monthly totals are accumulated and compared with budgeted figures. This is a single entry system providing for cost analyses for insurance, transportation, and operation of plant. This accounting system meets the specifications of the criteria.

New York

The uniform system of accounting in New York employs a cash entry system, i. e., receipts and expenditures are recorded when received or paid. Expenditures are recorded in a voucher register. The distribution

ledger which summarizes expenditures has the following major categories:

General Control
Instructional Services
  Regular Schools
  Special Schools
Operation of Plant
Maintenance of Plant
Auxiliary Agencies
Fixed Charges
Debt Service
Capital Outlay

These accounts are further subdivided into 92 sub-accounts.

Budget and annual reports are required as well as cost analyses of transportation expenses; the use of an insurance register, a note register, and a bond register; and payroll records for each employee. This system of accounts corresponds very closely with the recommendations of the Office of Education Handbook II with a few variations in account descriptions. The accounting requirements in this state comply with the criteria definitions.

North Carolina

North Carolina has 48 county-unit school districts and 58 city districts. Operating budgets for the school districts are submitted to the controller's office of the State Board of Education and local superintendents draw vouchers upon the State Treasurer up to the amount of their approved budgets. The accounts for which disbursements may be made are for general control, instructional service, operation of plant, and auxiliary services. There is no uniform accounting system to record the budgeted expenditures.

A uniform system of accounting for school activities is in use

which embodies the principle of one central set of records (with only one bank account for all funds). A single entry cash system has been adopted which employs a distribution ledger for receipts and disbursements. The ledger, when totaled, provides the necessary information for report purposes.

In 1953, a uniform system of cost accounting and perpetual inventory records for transportation costs was instituted, and the General Assembly of North Carolina appropriated sufficient money to provide for the employment of property and cost clerks in the counties. Consequently, complete cost records are available for transportation expenditures. The alertness of the State Board of Education to the usefulness of cost records indicates an unusual awareness of cost procedures. The conditions of the criteria are satisfied in the accounting controls imposed upon the state's school units.

North Dakota

There is no uniform accounting system in use in North Dakota. The school district clerks and treasurers are required to transmit individual annual reports on activities to the county superintendents of schools. The clerk's annual report records warrants issued for budgeted disbursements while the treasurer's report discloses warrants paid during the year. At the year end, the two reports are reconciled. The classifications of expenses on these reports are:

Administration
Instructional Services
Other Services
  Health
  Transportation
  School Lunches
  Tuition to Other School Districts
  Miscellaneous
Operation of Plant
Maintenance of Plant
Fixed Charges
Capital Outlay
Debt Service

There are 32 sub-classifications of the above accounts. Despite the lack of information on the accounting systems in use in the several school districts, the information required of the school districts indicates that sufficient records are maintained to meet the requirements of the criteria.

Ohio

The Bureau of Inspection and Supervision of Public Offices prescribed the system of accounting for the use of school districts in the State of Ohio. The system has been developed to disclose the cash balances of the various funds so that no unlawful appropriation will issue. Appropriations in the budgets are approved by the county budget commission. The forms used are the cash journal, receipts journal, and an appropriation and authorization ledger. Consequently, the use of a general ledger with asset and liability accounts, and the development of cost information is left to the discretion of the school official. The classification of accounts is as follows:

Personal Service
  Salaries and Wages
    Administration
    Instruction
      Day Schools
      Summer Schools
      Evening Schools
  Coordinate Activities
  Auxiliary Agencies
  Operation of School Plant
  Maintenance
  Special Services
Supplies
Materials for Maintenance
Equipment Replacements
Contract and Open Order Service
Fixed Charges and Contributions
Contingent
Debt Service
Capital Outlay

There are 116 sub-classifications of these major accounts. Further divisions are recommended by the Bureau if deemed necessary by the local board of education. The account classifications are sufficient to enable the school administrator to develop cost records and, therefore, the accounting system meets the criteria specifications.

Oklahoma

The Oklahoma Handbook on budget and business management states:[1]

> School accounting and reporting are geared to one end--the continuous improvement of the total education program. Thus the aim is to maximize education and not, as in business and industry, to maximize profits.

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[1]Oklahoma State Board of Education, Finance Division, The School Finance and Transportation Laws Including the State Board of Education Regulations for Administration and Handbook on Budgeting and Business Administration, (Oklahoma City: State Board of Education, 1959), p. 62.

With this concept in mind, the Handbook authors offer 116 pages of constructive suggestions for proper record-keeping. Many of the ideas incorporated in the Office of Education Handbook II are also in the Oklahoma Handbook. Provision is made for the detailed recording of general fund, building fund, bond fund, sinking fund, and school activity fund transactions. The state law requires that budget appropriations have to provide for a minimum education program as defined in the law. The following expenditure classifications are to be used by the school districts:

Administration
Instruction
Attendance and Health Services
Pupil Transportation Services
Operation of Plant
Maintenance of Plant
Fixed Charges
Food Services and Student-Body Activities
Community Services
Capital Outlay

There are 198 sub-classifications of the above accounts. The refinement of the various classifications permits an easy accumulation of various cost elements. The conditions of the criteria are satisfied in this uniform accounting system.

Oregon

The Department of Education of the State of Oregon is patterning its accounting system on the classifications recommended by the Office of Education Handbook II, according to a letter to the writer from Mr. J. L. Turnbull, Assistant Superintendent. Accounts are to be maintained for:

General Control
Instruction
Operation of Plant
Maintenance and Repairs
Auxiliary Services
  Health
  Transportation
  School Lunch
  Other
Fixed Charges
Capital Outlays
Debt Service

There are 55 sub-classifications of expenditures which are recorded on distribution ledger sheets. Budgets and annual financial reports are required. Based on the requirements of the accounting system in force in the State of Oregon, the conditions of the criteria are satisfied.

Pennsylvania

The Department of Public Instruction is incorporating into its uniform system of accounting the recommendations for proper accounting classifications advocated in the Office of Education Handbook II. Prorating of expenditures to the several departments, i. e., types of schools, was made mandatory for all school districts. Audits by the comptroller of the Department of Public Instruction are performed annually.

The Joint School Plan in this state permits the pooling of resources by one or more school districts causing a central administrative control unit. The school districts may use either a strict cash basis, or strict accrual basis, or modified cash basis of accounting. Budgets are also required.

The accounting classifications used in the uniform system in Pennsylvania will not be stated here for they are the accounts listed in

the Office of Education Handbook II. It is interesting to note that the school districts are required to furnish a balance sheet and a special expenditure report with their annual financial report. The special expenditure report varies each year depending on the activity being analyzed by the Department of Public Instruction. The uniform accounting system which has for its foundation the accounting regulations of the Pennsylvania Department of Public Instruction and the account classifications of the Office of Education Handbook II contains the requisites set by the criteria.

Rhode Island

A letter to the writer from Mr. Edward F. Wilcox, Director of Field Studies, Department of Education, indicates that this state does not have any published regulations for the keeping of books of account for school districts. Forms are prescribed for the keeping of cash receipts and disbursement records in a distribution ledger with separate sheets provided for the following major groups of accounts:

Account	Number of Sub-accounts
General Control	22
Instruction	19
Operation of School Plant	7
Maintenance of School Plant	7
Fixed Charges	7
Auxiliary Agencies	17
Capital Outlays	10

Although this is a single entry system, the account classifications easily permit the analyzing of the expenses into cost units. Budgetary procedure

is also in effect to allow for accounting for appropriations. The system of accounting for school districts in this state meets the conditions of the criteria.

South Carolina

The uniform system of accounting devised for the use of school districts has been patterned after the Office of Education Handbook II. Eleven major accounts are used; these accounts, however, were retained from prior account classifications. The chart of accounts shows the following classifications:

Administration
Instruction
Attendance and Health Services
Pupil Transportation Services
Operation of Plant
Maintenance of Plant
Fixed Charges
Food Services and Student-Body Activities
Community Services
Capital Outlay
Debt Service

There are 64 sub-classifications in the uniform accounting system which also provides for cost analyses, budget preparation, and other statistical studies.

In addition to the accounting manual, South Carolina prepared for the use of school district personnel, a uniform accounting system for school activity funds, and a handbook of business management for public schools. Reports by county superintendents consolidate the information received from the individual school districts within their jurisdiction and provide for comparisons of costs of school district activities. Disbursements

require the county superintendent's approval before payments are made. The uniform accounting system provides for sufficient accounts to permit cost analyses. The system meets the conditions of the criteria.

South Dakota

The uniform accounting system in South Dakota uses the account classifications of the Office of Education Handbook II. These account titles will not be repeated here. The entries for expenditures are made in distribution ledgers which are totaled to arrive at the figures necessary for the annual report to the Department of Public Instruction.

Additional records maintained by the county and independent school districts are a securities record, warrant register, promissory note record, and bond record. The public school budget is adopted in July of each year, and annual reports are due from public, private, and parochial schools. In view of the conversion of the accounting system to the accounting terminology in Handbook II, the uniform system meets the conditions of the criteria.

Tennessee

The revised uniform accounting system was developed in 1958 in accordance with the recommendations contained in the Office of Education Handbook. The classifications of receipts and expenditures are identical with those of the Handbook. The balance sheet accounts also conform to the Handbook II recommendations. The system is based on double-entry bookkeeping, and the modified cash basis of accounting has been prescribed

by the State Department of Education. Careful control of expenditures is accomplished through constant comparison with budgeted figures. A manual describing uniform accounting procedures for school internal funds is also provided for the school districts. The detailed and elaborate system of uniform accounting procedures for the 153 school districts in Tennessee meets with the conditions of the criteria.

Texas

The Texas Education Agency prescribes the uniform accounting system for the Office of Education for use by school districts. According to Texas law, the school accounting system must be used in conjunction with the school budget so that the budgeted figures will not be exceeded. A double-entry system is advocated with the general ledger as the central accounting form. The fund basis of accounting is required with continuing information on unencumbered appropriation balances. The books should be maintained on a modified accrual basis. Standards for audits are also prescribed by the Texas Education Agency. In view of the adoption of the principles outlined in the Office of Education Handbook II, the uniform accounting system complies with the specifications of the criteria.

Utah

The uniform accounting system adopted in Utah requires detailed information on receipts and disbursements based in principle on the recommendations issued in the Office of Education Handbook II. The classification of expenditures shows the following accounts:

Administrative (General Control)
Instruction
Other School Services
  Health
  Attendance
  Transportation
  School Lunch
  Other
Operation and Maintenance of Plant
Fixed Charges
Community Services
Public Summer School
Adult Education
Capital Outlay
Debt Service

There are 88 sub-classifications of the major accounts. Annual financial reports and budgets are required. Instructional expenses are allocated to types of schools. The Utah manual of accounting provides for constant revisions of the accounting procedure as necessary changes present themselves. In view of the comprehensive classification of accounts prevailing in this uniform system, the requirements of the criteria are met.

Vermont

No rules or regulations are published by the State Department of Education of Vermont for it is their belief that the contents of the Office of Education Handbook II are sufficient for the needs of their school districts according to a letter received by the writer from Mr. Winn L. Taplin, Director of Educational Planning.

The forms which the writer procured from a supply house in Vermont show that expenditures are accumulated separately for elementary, secondary, and summer schools, including adult education, in each district. Distribution ledger sheets summarize the expenditures monthly (July through

June). The totals placed on the distribution ledger sheets are transferred to the regular books of account which conform to the recommendations of the Office of Education Handbook II. At the end of the school year, the accumulated monthly totals shown on the distribution sheets become a part of the district's annual report by writing in the totals on a perforated stub at the right side of the ledger sheet and detaching it for insertion in the annual statistical report. Budgetary planning is also required. In view of the complete adoption of the recommendations in Handbook II of the Office of Education, this system meets the conditions of the criteria.

Virginia

In Virginia, the schools are a part of the county or city government in which the school system is situated. Therefore, these school systems operate as departments of a county or city unit. The receipt and disbursement of funds lies with the county or city treasurer who pays school expenditures with city or county checks, the school board merely approving invoices or issuing warrants for the use of the treasurer of the governing unit.

School operations are reflected in the city or county budgets and those schools which maintain their own accounting records reconcile their figures with the controlling accounts of the governing units while those schools which do not maintain their own records are furnished with monthly financial reports to inform them whether they stay within their budgeted figures. The classification of accounts is as follows:

Account	Number of Sub-accounts
School Board - Administration	10
Instruction	39
Regular Day Schools (elementary, secondary, vocational, supervisors)	
Part-time, Evening, and Substitute	
Coordinate Activities	3
Auxiliary Agencies	11
Housing - Operation and Maintenance of School Plant	11
Fixed Charges	5
Miscellaneous Operating Functions	4
Capital Outlay	6
Debt Service	3

In all cases, records are maintained with respect to estimated revenues, realized and unrealized revenues, appropriations, expenditures, encumbrances, and unencumbered appropriation balances. Year-end audits of school records are conducted by the Auditor of Public Accounts at the time of the governing political unit audit and school operations are included as a part of the report on the larger unit. A uniform accounting system is prescribed for school activity funds. The accounting system in force complies with the standards of the criteria.

Washington

The accounting system for school districts in this state is patterned after the Office of Education Handbook II. Changes from the earlier accounting guide issued by the Office of the Superintendent of Public Instruction were not major because the State of Washington school districts had been using the generally accepted accounting classifications which is repeated throughout this section on state accounting provisions.

Prorations of teachers' salaries to the types of schools and to the type of work, whether supervisory or teaching, is recommended in the accounting manual. Per capita costs are computed according to levels of instruction and budgetary procedures are strictly defined. In view of the adoption of Handbook II accounting recommendations, the accounting system of the school districts in this state meets the requirements of the criteria.

West Virginia

In West Virginia, the schools are administered as a part of the county in which they are located. The school boards receive a monthly financial report showing unencumbered balances from the County Boards of Education to aid them in holding to budget estimates. The State Board of School Finance imposes an accrual system of accounting on the county school districts which provides for monthly and quarterly reports of expenditures, encumbrances, and free balances for the budgeted appropriations. Account classifications are as follows:

Account	Number of Sub-accounts
General Control	25
Instruction	18
Operation of Plant	13
Repairs and Replacements	18
Transportation	19
Auxiliary Agencies	18
Fixed Charges	15
Capital Outlay	19
Veterans Training Program	3
Building Program	5

The school districts are audited by the Board of School Finance and by the Tax Commissioner. This accounting system complies with generally accepted accounting principles and meets the conditions of the criteria.

Wisconsin

The Department of Public Instruction prescribes a uniform accounting system for school districts as well as budgeting, accounting, and auditing procedures. Provision is made for asset, liability, surplus, revenue, and expenditure accounts. Special accounts are maintained for capital outlay and special funds. The classification of expenditures is as follows:

Account	Number of Sub-accounts
General Control	9
Instruction	9
Operation	4
Maintenance	2
Auxiliary Services	6
Other Disbursements for Current Operations	4
Transportation	9
Community Services	4
Capital Outlay	6
Debt Service	6

Annual audits of the school books are required by state law. Recommendations for allocation of operational costs for purposes of developing tuition fees is one area in which the principles of cost accounting are employed. Based on the well-integrated set of accounting procedures advocated by authority of the state, the accounting system in Wisconsin complies with the specifications of the criteria.

Wyoming

A letter to the writer from Mr. Zan Lewis, Fiscal Agent in the Department of Education, indicates that while there is no pamphlet available on school district accounting, the districts within the State of Wyoming adhere to the recommendations of the Office of Education Handbook II, with minor modifications. Budgeting for the school districts is required. In view of this information, it is reasonable to conclude that the accounting system in this state meets the conditions of the criteria.