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TESTING THE APPLICABILITY OF A RECIPROCAL ALLOCATION MODEL FOR WITHIN SCHOOL DISTRICT EXPENDITURES.

THE UNIVERSITY OF OKLAHOMA, PH.D., 1979

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GRADUATE COLLEGE

TESTING THE APPLICABILITY OF A RECIPROCAL ALLOCATION MODEL FOR WITHIN SCHOOL DISTRICT EXPENDITURES

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

GEORGE WILLIAM MORGAN

Norman, Oklahoma

1979

TESTING THE APPLICABILITY OF A RECIPROCAL ALLOCATION MODEL FOR WITHIN SCHOOL DISTRICT EXPENDITURES

APPROVED BY

DISSERTATION COMMITTEE

ACKNOWLEDGEMENTS

Sincere appreciation is expressed to Dr. Loy E. Prickett, Chairman of the doctoral committee, for his support during the doctoral program and his guidance in planning the study. Gratitude is expressed to the members of the doctoral committee, Dr. Omer J. Rupiper, Dr. John J. Seaberg, Jr., Dr. Don S. Udell, and Dr. Lloyd P. Williams for their friendship and concerned encouragement throughout my doctoral work, and to Dr. Gene Pingleton for his assistance in introducing me to the respondents selected during the investigation of this study.

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TESTING THE APPLICABILITY OF A RECIPROCAL ALLOCATION MODEL FOR WITHIN SCHOOL DISTRICT EXPENDITURES

CHAPTER I

THE PROBLEM

Introduction

Growing concern and related research has appeared on the educational scene dealing with rising operational costs and their associated financial problems. Some of the emphasis has been directed toward school district expenditures and a variety of methods for collecting and analyzing expenditure patterns. Limited spending for operations has been brought about by a number of factors, including inflation, teacher salary increases, tax base erosion, and an ever expanding competition by other state and local agencies for the tax dollar. While these factors have become critical within operational spending, rising interest in the rights of the disadvantaged for equality of educational opportunity has been placing additional demands upon the unencumbered funds.

Research in the field of equalizing support between school districts has taken a position of priority in the United States. Much of this effort has been a direct result of Court action suits filed against State and Local

Education Agencies. Each has been involved in uncovering disparities in between-district expenditures per student.[1] Numerous studies have been generated to analyze the problems and to offer feasible solutions. This effort has narrowly focused its attention on the inter-district inequities. Mandel[2] and others have been suggesting that intra-district disparities may be the root problem that possesses an even more complicated network of variations which seemingly defy easy solution. Effective management at the district level rapidly becomes the keystone for any viable answer.

The State Department of Education in Oklahoma has operationalized, as part of the school district reporting scheme, an Expenditures from the General Fund Including Cash Accounts form. The expenditures (warrants issued and reserves for claims pending) are classified and reported according to services provided through the school district general fund.[3] These district expenditures are collected and eventually provide the state with an expenditure-per-student by district and a per-capita expenditure for the state system.[4] Data such as these may be used in determining disparities between districts. The degree to which local school district administrators have control of current operating expenditure-per-student still remains to be answered.

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[1]Specific cases address the constitutional issue of intra-district disparities. Further comprehensive review is made in Constitutional Reform of School Finance, A National Education Finance Project (U.S. Office of Education, 1972), pp. 109-120.

[2]Allen S. Mandel, "Resource Distribution Within School Districts," Integrated Education, Vol. XIV, No. 1, (Jan.-Feb., 1976), pp. 6-9.

[3]Oklahoma State Department of Education, The State Board of Education Regulations for Administration and Handbook on Budgeting and Business Management (Bulletin No. 145-S; Oklahoma: Central Printing Office, 1977-78), pp. 41-76.

[4]Oklahoma State Department of Education, 1977-1978 Annual Report (Oklahoma: Southwestern Stationery and Bank Supply), p. 27.

A close look at the variables which seem to control current operating expenditure-per-student will begin to indicate that a school district administrator may not have the high degree of control one would first envision. Hickrod completed a review of educational and economic research for the period 1959-1969.[5] He selected studies which directed research to obtain the appropriate variables to be used in predicting expenditure-per-student for districts. Current operating expenditure-per-student was the operational definition given for local demand in each of the studies. In using both cross-sectional and longitudinal studies as the basis of his review, Hickrod was able to assertain several existing relationships: (1) demand was a function of wealth and wealth-related variables of the citizens within the school district; (2) wealth in the form of income acted as a better predictor of demand than did property valuations per student; (3) educational and occupational composition of citizens within the school district were good predictors of demand; (4) other social variables may be used in predicting local demand.[6] Hickrod concluded by saying:

> (t)he educational policy maker probably does not realize the great power with which wealth and wealth-related variables can control demand. When the coefficient of determination rises to 80% as it does in some of these models, one is tempted to conclude that educational administrators have very little control over demand levels in the school districts they serve.[7]

The analysis by Hickrod should add credibility to the notion that inter-district expenditure investigations are narrow in their focus on inequities. A shift in the direction toward intra-district expenditure

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[5] G. Alan Hickrod, "Local Demand for Education: A Critique of Economic Research Circa 1959-1969," Review of Educational Research, Vol. XLI, No. 1 (Feb., 1971), pp. 35-49.

[6] Ibid., pp. 45-46.

[7] Ibid., p. 46.

analysis would allow research to deal with those control variables which would be helpful in meeting the needs of local students, citizens, and the school district administrator when it comes to planning and controlling for within-district equality. While local demand can be measured by a school district's expenditure-per-student (EPS), it is how those expenditures react within the district which is of greater importance.[8] This may be accomplished by identifying the primary services of the general fund for operation and allocating them in such a manner as to provide reliable information on the equitable distribution of those resources on a within-district basis.[9] The objective function of any form of evaluation for within-district expenditures should include a means for minimizing service expenditures; maximizing benefits from those expenditures which are made; minimizing the inter-school spread of EPS; and maximizing or imporving the quality of student output. Technology is available to make it possible for school district administrators to improve their current operations by increasing the quality of information gathered for decision making purposes. With the aid of a reciprocal allocation model, it is feasible to distribute the services provided through the general fund for operations to the different schools and have those costs eventually assigned to the individual student.

Statement of the Problem

With a network of interrelated variables designed, tested and operationalized, a basis for developing a more reliable feedback and evaluation

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[8]Anita A. Summers and Barbara L. Wolfe, "Intra-District Distribution of School Inputs to the Disadvantaged: Evidence for the Courts," The Journal of Human Resources, Vol. XI, No. 3 (Summer, 1976), p. 341.

[9]Robert S. Kaplan brings this out with great clarity in his discussions of applying linear algebra to the reciprocal service department cost allocation problem presented in "Variable and Self-Service Costs in Reciprocal Allocation Models," Accounting Review, Vol. XLVIII, No. 4 (Oct., 1973), pp. 738-48.

system for within-district control could be provided. This research was directed to determine the environmental factors appropriate for a basis of allocation and then to utilize these variables, within the scope of their importance and value for developing a full cost allocation model for testing.

The specific problem statements were:

1. How are general fund expenditure decisions currently being made by school district administrators?

2. What variables do school district administrators feel are appropriate as a basis of distribution when applying a reciprocal allocation model to a public school district general fund?

3. How will the variables be applied in a reciprocal allocation model designed for use within a public school district?

Definition of Terms

For the purpose of this research, the following definitions applied:

Allocation Base: a systematic means of relating a given cost pool with a cost objective.[10]

Cost Objective: any activity for which a separate measurement of costs is desired.[11]

Cost Pool: an accumulation of related individual service costs for subsequent allocation to cost objectives.

General Fund: an accounting fiscal entity where funds are established to account for resources devoted to financing the general services which the public school district performs for its citizens. Included in this fund are also expenditures from state aid, vocational reimbursements, enrichment for Indian education, hot lunch revolving funds, all federal title funds and PL-874 funds.

Elementary School: a variable grade level classification approved by each school district to indicate a clear separation from middle, mid-high, jr.-high, or high school.

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[10]Charles T. Horngren, Cost Accounting: A Managerial Emphasis (4th ed., Revised; Englewood Cliffs: Prentice-Hall Inc., 1977), p. 497.

[11]Ibid., p. 20.

School District Administrator: a superintendent or the superintendent's appointed representative who possesses both the authority and responsibility for the decision making process in regard to general fund expenditures within Oklahoma school districts.

Reciprocal Allocation: a relationship existing when general fund service accounts provide service to themselves as well as to other service accounts.

Cost Classification: a process to determine if costs have been incurred for the exclusive benefit of a particular school (direct), or incurred for the benefit of several services and/or schools (indirect).

Cost Behavior: a process to determine if costs within each account have been changing in proportion to changes in the level of activity within the school district (variable), or remain unchanged in total amount for a given time period despite wide fluctuations in activity (fixed).

Statement of Purpose

The purpose of this research was to operationalize a reciprocal allocation model for use by school district administrators that will assist them in (1) predicting the fiscal effects of decisions made for planning and controlling, (2) determining the spread of benefits to schools within the district, (3) attaching a more reliable performance measure of costs to the students served, and (4) obtaining a higher level of mid-management motivation through goal congruence. Use of the reciprocal allocation model will aid in identifying general fund cost pools, cost objectives and the various methods for relating the one to the other.

Limitations

This research was limited to independent public school districts within the state of Oklahoma that possessed a multiple elementary school building network. Care was exercised in the sampling process to insure that the elementary schools were of a similar grade structure and to provide the school district administrators with alternatives during their

decision-making process. Further limitations to multiple secondary schools would have placed undue restrictions upon the population. The alternatives for allocation of expenditures between elementary schools, and between elementary and secondary classification of schools, provided adequate data for determining the variables desired.

Numerous funds were available for use by the local school districts in carrying on the affiars of business. This research study was limited to the general fund for operations and adhered to all account definitions as found in The State Board of Education Regulations for Administration and Handbook on Budgeting and Business Management (bulletin No. 145-S).

Tulsa and Oklahoma City school districts were eliminated from those selected for random sampling. Tulsa and Oklahoma City were too different from the norm in size of district, student enrollment and budget, even for larger districts, and were considered special cases with allocation networks of unique character.

Assumptions

Research was not conducted to determine the cost pools of the general fund for operations. Cost pools, as presented by the State Department of Education of Oklahoma for sub-accounts as outlined in bulletin No. 145-S, were utilized.

The cost pools by definition have commonality of purpose among them. It was assumed that this would provide an added amount of homogeneity and accuracy to the allocation methods studied.

Design of Study

Sample

The population for this research was school district administrators from independent public school districts of Oklahoma that possessed at least

two elementary schools within their jurisdiction. A natural separation existed in all of the districts between elementary and secondary schools. It was the intent of this investigator to utilize those school district administrators who must consider priorities and benefits when confronted with alternatives for fiscal decision making. The school district's superintendent was the primary respondent for data collection. The superintendent's appointed representative within the general or central administrative staff became the primary source for data collection when, in the judgment of the superintendent, they were considered more qualified to respond to the survey questionnaire.

Oklahoma Regional Education Service Center areas were used to set the boundaries for sampling the chosen population. This guaranteed that each geographical area of the state was represented in the study. The districts which adhered to the population guidelines were identified and placed within their respective regional education service center. One district was chosen at random from each of the twenty (20) centers.

Procedures

The procedures followed for collecting data were broken into two parts. Part one started with the design of a survey questionnaire to be administered to the school district administrators on a personal contact basis. The objectives of the questionnaire were the collection of data for determining current expenditure decisions and the identification of the variables used in establishing a base of allocation.

A pilot survey preceded the actual sampling survey to discover possible questionnaire problems in the areas of design, phrasing and content. Two school district superintendents from the defined population who were not part of the representative random sample were selected to participate in a

pilot survey of the questionnaire. Factors considered before placing these superintendents in an expert capacity were their length of experience as a school district administrator and their direct involvement with general fund accounting and expenditure decision making. The survey questionnaire was revised following the recommendations of the pilot group.

Initial contact was made with the sample school district administrators using letters of introduction and telephone calls to establish the interview schedules. Anonymity for each respondent was guaranteed at first contact and reinforced throughout the survey.

The analysis of the data gathered from the survey questionnaire progressed along two separate paths. The first one focused its attention upon the mind set of the respondents and how they interpreted their current information needs for general fund decision making. The second path converged toward a concensus allocation base for relating the cost pools to the schools as cost objectives. The analysis in both cases took the form of tabled data, percent and rank calculations, and where appropriate, the degree of sameness between experts and their degree of agreement (Kendall's coefficient of concordance) computed.

The second part of the data collecting and analysis procedure began after a skeleton reciprocal allocation model had been designed using the results of the questionnaire. An allocation base was fabricated and applied in an interlocking network between the cost pools and cost objectives. A school district from within the sample group was chosen with the agreement of the school district administrator to provide the data for testing the applicability of the model. The most complete and accurate expenditure amounts were used in the cost pools representing the school district's general fund for operation. To complement the expenditure data obtained, the

same fiscal period was used for collecting the variables appropriate for allocating those expenditures. The cost objectives were identified and classified according to the special needs and requirements of the school district examined. The final results of the testing were given as an equivalent expenditure per student (EEPS) for each school identified within the district.

The collection of data for determining the variables appropriate as the basis for distribution and later as operational input were directed toward the applicability of a reciprocal allocation model. This was accomplished by using algebra and matrices to allocate costs and to recognize reciprocal relationships between the various cost pools. The following formula was used:[12]

$$Y = C^t(I-B)^{-1}b$$

Y = the amount of costs allocated to each school (cost objective) within the district.

C^t = the variable percents applicable to the different schools within the district (transposed matrix).

$(I-B)^{-1}$ = the variable percents applicable to the different cost pools with reference made to reciprocal relationships (matrix transposed and inverted).

b = amounts per cost pool to be allocated.

No other allocation system was explored in this research.

No criterion or definition for controllability was suggested to the respondents. The investigator believed controllability was defined and implemented professionally only in the mind of each school district administrator who had amassed experience in the fiscal decision making processes and who had been held accountable for those decisions in the past.

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[12]Revised from a reciprocal service department allocation model obtained from a lecture given by Dr. Shane R. Moriarity, Associate Professor of Accounting at the University of Oklahoma, in the Spring of 1978.

Organization of the Report

This study was divided into seven chapters. The first chapter contains an introduction to the problem, statement of the problem, definition of terms, statement of purpose, limitations, assumptions and a design of the study.

Chapter II presents the review of literature related to this study. It includes research dealing primarily with the behavior patterns for expenditures within school districts. An effort was made to build upon the theories of allocation and information systems and their possible applications to fiscal decision making in local school districts.

Chapter III provides a description of the procedures necessary for (1) the design of a survey questionnaire, (2) a pilot project testing the reliability of the survey questionnaire, and (3) collecting, categorizing, and analyzing data from the survey.

Chapter IV presents the findings of the survey questionnaire as completed by the school district administrators and describes the procedures used in the design of a skeleton reciprocal allocation model.

Chapter V contains the procedures required for collecting the financial and related variable allocation data. They were required for testing the applicability of the reciprocal allocation model designed in Chapter IV. An accounting was made for every calculation and adjustment needed to operationalize the model.

Chapter VI presents the findings of the reciprocal allocation model testing.

Chapter VII contains the summary, findings, conclusions, and recommendations.

CHAPTER II

LITERATURE REVIEW

Introduction

The principal reason for reviewing the literature was to bring together the existing research relevant to this investigation and to assess its significance. To complement the studies identified for review, a theoretical background of the problem was discussed to show how this investigation and a subsequent full cost allocation model related to a unified explanation of management information systems.

Related Research

The methods employed for searching the literature for information relative to this investigation centered primarily around electronic processing and inquiry. Educational resource information center (ERIC) and current index to journals in education (CIJE) data base files, maintained through the direction of the United States Office of Education, were used. These searches isolated literature in the related area of educational finance, resource allocations, and mathematical models. A search of dissertations was performed by Xerox University Microfilms which maintains a current and comprehensive dissertation query service. This search isolated research in the related area of school districts, expenditures, and allocations.

In the last few years there has been a great deal of concern over the equality of opportunity in education. This concern became evident when reviewing the literature for resource allocation patterns within local school districts. The majority of research identified dealt with the influence of socioeconomic status and race as their primary environmental factors. These same factors were used in assessing the input that students and other vested interest groups have on the inequalities expressed between schools within the same district. Only those studies which addressed the fiscal behavior of general fund expenditure based on controllable resources within the school district were presented for discussion.

In 1974, Peterson conducted a study which examined resource allocation patterns within the elementary schools of Denver, Colorado public school system.[1] The purpose was to determine the allocated costs per pupil in each of the schools and then to establish its relationship between the independent variables of program, facility, socioeconomic, and demographic factors.

First, Peterson had to determine the per-pupil expenditure allocation for each school in order to measure the amounts of intra-district variation. Second, Peterson was required to determine what factors were associated with those variations and what implications, if any, existed. The conclusions drawn have a bearing upon the allocation of expenditures within a local school district. In summary, they were: (1) lower socioeconomic pupils received consistent fiscal support, (2) higher paid teachers were attracted to the higher socioeconomic schools within the district,

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[1] Dennis L. Peterson, "Intra-District Resource Allocation Patterns: A study of Resource Allocations to Denver Elementary Schools," (unpublished Ph.D. dissertation, University of Colorado, 1974).

(3) lower socioeconomic schools indicated a lower pupil-teacher ratio, (4) the total number of pupils in each school had a strong influence on expenditures, and (5) need acted as a consistent factor toward increased allocation of resources.

Simms formulated a decision model in 1974 to equalize resource allocation within a local school district.[2] The model included student ethnic and income composition, school size, citizen voting behavior, and the local level of political agitation as variables. Each variable within the model was assessed for its effectiveness as an equalizing factor. The model was tested using the thirty-six elementary schools of the San Jose, California school district.

Size was the only variable that exerted a significant influence on resource allocation. School enrollment was the most important determinate of per-pupil expenditure due to the school district policies and formulas used for distributing resources among the schools. Simms suggested that some of the inequities in other school districts may be the result of race and class, but the most important variable appeared to be school enrollment and the size factor.

Nephew examined the fiscal allocation patterns in one hundred nineteen school districts across ten northeastern states in 1969.[3] His purpose was to provide realizable and practical guides for the allocation of scarce financial resources. The approach taken was to identify

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[2]Margaret C. Simms, "A Decision Model for Intradistrict Allocation of Educational Resources," (unpublished Ph.D. dissertation, Stanford University, 1974).

[3]Charles T. Nephew, "Guides for the Allocation of School District Financial Resources," (unpublished Ed.D. dissertation, State University of New York at Buffalo, 1969).

and concentrate research upon these inputs within the school system which decision makers could regulate. The primary focus of the study was to assess the effects of regulable financial inputs upon school quality or output.

Eleven expenditure items, given in terms of per-pupil costs, were used as the regulable input. Twenty-two residual items, adjusted for socioeconomic effects, were used as output in determining school systems input-output relationships. The outputs were divided and classified either as measures of a student's ability (achievement or as a measure of motive (need). Regression analysis of the output measures to the per-pupil costs was used as the primary statistic for determining the degree of relationship.

The findings and conclusions from the Nephew study verified previous research which had shown that environmental inputs have a significant impact on school system outputs. As much as fifty percent of the variance in the measures for output was accounted for by the type of clientele used in the study. This should suggest that any model developed to assess the allocation patterns of a local school district be designed and tailored to fit the needs of that particular environment. Failure to account for these variables could render any decision model inadequate.

Another conclusion from the Nephew study suggested that the way money was allocated did have an effect upon school outputs even after all of the effects of socioeconomic status were accounted for. There was no one best way discovered to allocate the fiscal inputs in order to facilitate the growth of all or even several of the outputs measured. There may be as many different allocation strategies and plans as there were

programs and objectives within the local school district. Priorities were a function of the general administration of the district and should be assigned before financial resources were allocated.

The consensus from a review of the studies by Peterson, Simms, and Nephew suggested that each school district under investigation should be considered as a unique case when determining its basis of financial allocation. The policies and priorities were established by each school district to meet the needs of the pupils served. The policies and priorities should be considered in any model designed to aid school district administrators in their fiscal decision-making process.

Theoretical Framework

A theoretical background of the problem was discussed in the remainder of this chapter. It seemed important that the review of literature be complemented with a description of management information systems as a composite of several management theories. Management accounting, management science, management theory, and computer processing were all dependent upon one resource which bound them together; the resource information. To conclude the discussion, cost allocation was reviewed as a means of distributing information in such a manner as to provide estimates or predictions about the impact of various actions on the total costs of the organization.

Management Information Systems

Management information systems (MIS) was a concept which was central to the understanding of processing information resources in support of managerial and decision-making functions of an organization.[4] The

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[4]Gordon B. Davis, Management Information Systems: Conceptual Foundations, Structure, and Development, (New York: McGraw-Hill Book Co., 1974), p. 3.

results of a MIS should be directed toward the decisions which need to be made within the different levels of responsibility. The ideal MIS served a dynamic role in management by continually orienting itself to shifting demands and requirements rather than developing into an absolute state with its assigned reports and well documented procedures.[5]

A closer look at the four major concepts which together made up MIS could provide a more descriptive assessment of what it was and from where it came. Although the MIS idea predated many of its parts, it had not been until recently that the process could be implemented with the speed and accuracy needed to make it work effectively. The concepts significant in the evolution of MIS were (1) managerial accounting, (2) management science, (3) management behavioral and decision making theory, and (4) electronic data processing.[6] Each one was dealt with in general terms.

Managerial Accounting

The field of accounting was largely divided into two parts. A definitive look at each part, financial and managerial, was helpful in drawing a distinction between them. Primarily, their difference rested in their use by two classes of decision makers.[7] Financial accountants were concerned with how the process could serve and provide decision-making information to the external environment of the business (i.e. investors, taxing agencies, and shareholders). Managerial accounting theory related to how the accounting process could serve and provide decision-making

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[5]Ibid., p. 7.

[6]Ibid., p. 8.

[7]Charles T. Horngren, Cost Accounting: A Managerial Emphasis, (4th ed., Revised; Englewood Cliffs: Prentice-Hall Inc., 1977), p. 4.

information to the internal environment (i.e. strategic planning, management control and operational control).

The essence of the management process was decision-making.[8] The accounting information and the decision process interacted to provide the planning necessary to coordinate the purposeful direction of resources and then the control necessary to implement and evaluate the performance of those plans. Through internal planning, control, and regulation, managerial accounting had grown from the step child role of financial accounting to become a cornerstone to the broader concept, Management Information System.[9]

Management Science

Operations research assisted today's managers in managerial planning and controlling for decision-making. Operations research was the application of scientific methods along with mathematical techniques to analyze problems and provide possible alternatives for management decision.[10]

A key to operations research was the collection of all the various factors affecting a particular problem and reduce them to quantities that could be measured and analyzed mathematically. When there was sufficient repetitiveness, models could be created and expressed as sets of mathematical equations. With these different sets of equations, it was possible to identify relationships and determine their interrelatedness under varying conditions. Careful consideration should be given each

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[8]Ronald A. Seaberg and Charlotte Seaberg, "Computer Based Decision Systems in Xerox Corporate Planning," Management Science, Vol. XX, No. 4 (December 1973), p. 584.

[9]Larry N. Killough, "Does Management Accounting Have a Theoretical Structure?" Management Accounting (April 1972), pp. 20-22.

[10]Wayne S. Boutell, Computer-Oriented Business Systems (Englewood Cliffs: Prentice-Hall Inc., 1968), pp. 108-139.

important variable, probability, and reasonable outcome for a given decision before an action was taken.

Management Theory

The theories that have been dealt with up to this point have been directing attention to physical aspects of collecting information for making decisions. But decisions were eventually made and acted upon by people. The human factors of the organization were extremely important when building a much larger management information system whose goal it was to direct all effort toward results which were "decision-impelling."[11] Management theory focused its attention upon man as an integral part of a man/machine interaction within MIS.

To study organizations, one must be prepared, not only to study its structure, but its people and the activities in which they were involved. The emerging concepts within management theory were exploring new ways of reaching a satisfactory solution within the decision-making apparatus of the organization and had begun to point out the human limitations in the search for solutions.[12]

Management theory attempted to explain what organizations were and what they had. What they were has been previously identified; what they had was human behavior, processes, and a network of structure to relate each to the whole. A study of human behavior focused its attention upon recognizing, satisfying, and/or developing needs, attitudes, motivations, leadership and group dynamics. The structure of the organization needed attention in order to grow, develop, change, combine or divide;

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[11]Gordon B. Davis, op.cit., p. 6.

[12]Gordon B. Davis, op.cit., pp. 147-151.

while the processes which the people were actively engaged in revolved around communication and decision-making.[13]

Computer Processing

When the computer first appeared on the business scene in the mid-fifties, it was viewed as simply a fast calculator for large scale routine transactions.[14] The first business applications were concerned mainly with clerical operations which could be performed faster and cheaper than they had been before. As a result, "data processing" became the familiar phrase when referring to the computer process.

As technology has progressed, both in the hardware and software stages of computer processing, the problems which had bound the business-oriented computer were overcome and the way has been opened to the more complex structure of MIS. Computer technology has been a major factor in MIS development through improved processes, equipment, transmission, and response. Clearly, without the capabilities of the computer, the concept of MIS could not be implemented.

Efficient use of the computer cannot be achieved by isolating individual functions from an ongoing system and assigning them to a computer for processing. MIS has been instrumental in redirecting such thinking toward the absorption of data processing and making it a service rather than the served.

Management information systems appeared to be a concept which lay at the intersection of management accounting, management science, management

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[13]James L. Gibson, John M. Ibancevich, and James H. Donnelly, Jr., Organizations: Behavior, Structure, Processes (2nd ed., Revised; Dallas: Business Publications, Inc., 1976), pp. 5-7.

[14]Robert G. Murdick and Joel E. Ross, MIS in Action, (St. Paul: West Publishing Co., 1975), p. 559.

theory, and computer processing. Each exerted its own significant influence upon the designed purpose of MIS; to make it possible for management to direct and control the business for its survival in the dynamic environment.

Information

To survive, organizations needed to change as the environment changed. To cope with these changes and to improve operations, administrators needed to base their decisions on a more complete view of activities across the functional and operational lines of the organization. Such an overall view helped the administrator understand how an action in one area could impact and effect other areas.[15]

Decisions made were usually as good as the information on which they were based. Information was as important to the operation and survival of an organization as any other resource. It should be available throughout the business and managed with as much care as other more visible resources.[16]

Decision-making was divided in such a way as to make higher levels of responsibility set the wider policy lines within the organization while the lower-echelon administrators broke the policy down into more detailed decisions.[17] In this way the total organization could be viewed as policy making at the top, proposals for carrying out policy at the middle ranks,

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[15]Claude McMillan and Richard F. Gonzalez, Systems Analysis: A Computer Approach to Decision Models (3rd ed., Revised; Homewood: Richard D. Irwin, Inc., 1968), pp. 432-440.

[16]IBM Corporation, Business Systems Planning: Information Systems Planning Guide (White Plains: Technical Publications/Industry, 1975), p. 1.

[17]Stephen J. Knezevich, Administration of Public Education (3rd ed., Revised; New York: Harper & Row, Publishers, 1975), pp. 41-42.

and actual work performance carried out at the operational level.[18] A goal of MIS was to serve each level within the organization with the required information for making the best decision possible at the least cost in the long run. The network of information should be built around the processes essential to achieving the desired objectives.

Information was central to the overall theme behind management information systems. It remained at a key junction between a point of decision and the feedback provided for evaluation from the point of action.[19] Thus we had completed the loop of a decision-making process. The continuation of this dynamic process was the organization's way of coping with change.

Cost Allocation

Cost allocation was a managerial accounting concept which had as its goal the assignment of business expenses to the different objectives within the organization by some systematic means. In business, the purposes had been to predict economic effects of decisions, to determine income and asset valuations, to determine mutually agreeable prices, and to obtain desired motivation from within the different responsibility levels.[20] The concept was used extensively within business and had long been the established cost principle for costing defense procurement.[21] Although the allocation of period costs had not been a common practice for internal management purposes, it did possess the necessary ingredients to

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[18]Amitai Etzioni, "Authority Structure and Organization Effectiveness," Administrative Science Quarterly, Vol. IV., No. 1 (June, 1959), pp. 43-67.

[19]Claude McMillan, loc.cit.

[20]Charles T. Horngren, op.cit., p. 495.

[21]James D. Edwards and Homer A. Black, The Modern Accountant's Handbook (Homewood: Dow Jones-Irwin Publishing Co., 1976), p. 884.

fit within the scope of MIS. Cost allocation could provide information for decision-making at any level of responsibility for the purposes of planning and control.

The best allocation base for distributing costs was one which recognized a cause-and-effect relationship. For direct cost allocation, the relationship was easy to determine; the expenditure item was simply identified with a particular cost objective. But with indirect cost the relationship may be difficult or impossible to determine. As Vatter explains:

> (a)ll costs are more or less interwoven in a complex fabric; in large measure, costs are joint as to their incurrence, as well as to their associations with various costing units.[22]

In cases where costs could not be directly identified with final cost objectives, they should be accumulated into homogeneous cost pools for subsequent allocation. The grouping of costs into like functions aided in providing a more direct and definitive relationship to the cost objectives which they were benefiting.[23]

Functionally, service departments were assigned responsibility for providing benefit and/or service to the other operational units within an organization. The assistance which they provided may vary in scope and range; but, normally it would include support for the production departments, other service related departments and, occasionally, itself. Service department expenses were not considered a direct cost of producing a particular unit of output. Classification as an indirect expenditure was recommended along with cost pooling of related expenses. The allocation

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[22]William J. Vatter, "Limitations of Overhead Allocation," Accounting Review, Vol. XX, No. 2 (April 1945), pp. 164-165.

[23]James D. Edwards and Homer A. Black, loc.cit.

process assigned these pooled expenses to the appropriate cost objectives within the organization.

The three primary methods for allocating service department costs to the production departments within the organization were (1) direct, (2) step, and (3) simultaneous equation. The direct method of allocating service department costs to the production departments was the most widely used.[24] It ignores any reciprocal relationship among the service departments and simply allocated each cost pool directly to the producing department. The problem which remained was to determine an appropriate basis for allocating the pooled service costs.

The step method of allocating costs recognized the reciprocal relationships which existed between service departments. The recognition, however, was only partial. Due to the sequence of step-by-step allocation, each department was eliminated from further consideration once it had been allocated.[25] The subsequent allocation of cost to the production departments using the direct or step methods were at best arbitrary when concerned with obtaining the true costs of assorted departments and products.[26]

To achieve a more accurate solution to the allocation problem when service departments render services to one another reciprocally, the use of simultaneous equations was recommended. If the reciprocal relationship between the different services was significant, some procedure more powerful than the direct or step method should be considered. This method was far

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[24]Charles T. Horngren, op.cit., p. 525.

[25]Nicholas Dopuch, Jacob G. Birnberg, and Joel Demski, Cost Accounting (2nd ed., Revised; New York: Harcourt Brace Jovanovich, Inc., 1974), p. 584.

[26]Charles T. Horngren, op.cit., p. 502.

more complex in its calculations, but had been made approachable for many organizations which had access to computer processing equipment. Even with the more elaborate calculations, Horngren had labeled the simultaneous equation, "The more theoretically defensible method,"[27] and Dopuch had added:

> (w)e may question the usefulness of these elaborate allocation procedures. . . these procedures may be desirable for managerial decision making when we extend the problem to include both fixed and variable service department costs.[28]

Summary

The purposes of this chapter were to provide a review of the literature for existing research pertinent to this study and make an assessment of their significance. In addition, a theoretical basis of the problem was explored in order to relate the focus and direction of reciprocal allocation models to the more comprehensive explanation of management information systems.

A research void was detected between educational administration and the use or applicability of reciprocal allocation models. The discussion of a theoretical background of the problem had indicated that the use of a cost allocation concept could be instrumental in providing information to meet the decision-making needs of school district administrators for better planning and control. The remainder of this study was directed toward bridging the detected void and providing an operational full cost allocation model to be used in educational administration.

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[27] Charles T. Horngren, op.cit., p. 527.

[28] Nicholas Dopuch, op.cit., p. 581.

CHAPTER III

SURVEY PROCEDURES

Introduction

The purpose of this chapter was to provide a procedural look at the (1) selection of the population's sample, (2) design of the survey questionnaire, (3) pilot study testing the validity of the questionnaire design, (4) data collection, and (5) data analysis. These topical divisions had been identified by this investigator as the necessary steps to be completed prior to the development and subsequent testing of the reciprocal allocation model.

Sample

The purpose of this study was to develop an allocation model that would be beneficial to school district administrators when making general fund expenditure decisions. Data collection limitations were prime factors in reducing the scope of this study to the state of Oklahoma. The reference to school district administrators had been made to identify those individuals who comprised the population, and who were directly involved with the expenditure decisions for general operating funds. The top two levels of administration (general and central) were combined as

defined by Knezevich,[1] to insure collection of data from the point of responsibility and authority. Further significance for identifying the population as school district administrators was found in an article by Zani which stated:

> (t)raditionally, management information systems have not really been designed at all. They have been spun off as by-products while improving existing systems within a company. No tool has proved so disappointing in use. I trace this disappointment to the fact that most MIS's have been developed in the 'bottom up' fashion. . . an effective system, under normal conditions, can only be born of a carefully planned, rational design that looks down from the top, the natural vantage point of the managers who will use it.[2]

The school district administrators who would provide the most professional opinion on perceived cost allocation bases for future model development were those facing alternatives for making decisions daily. For the assurance of collecting data from this level of school district administrator, additional limitations were assigned to the population. Only administrators who were actively involved in managing independent public school districts requiring multiple elementary schools of similar grade level and structure were considered appropriate for selection. A further limitation to include only those administrators who possessed multiple secondary schools within their district became too restricting upon the population and provided too great a bias toward the largest of districts within the state. To help eliminate the bias of extremely large districts, Oklahoma City and Tulsa school districts were not considered options for selection in the sampling process.

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[1]Stephen J. Knezevich, Administration of Public Education (3rd ed., Revised; New York: Harper and Row, Publishers, 1975), pp. 41-43.

[2]William Zani, "Blueprint for MIS," Harvard Business Review, Vol. IIL. No. 6 (December 1970), p. 100.

The Oklahoma education directory[3] was the primary source for identifying the school district administrators who met the qualifications for selection as population members. To aid in the accounting of administrators, school district location names were substituted in their place. No references were made within this study revealing the names of individuals considered or selected.

Eighty-three school districts were selected by considering each new listing as it appeared in the directory. First, this investigator had to determine whether or not the district listed was an independent school district. If it was identified as independent, the number of elementary schools was determined by cross referencing the school names, principals, and the number of teachers assigned to each. Those districts which met the population qualifications were written down by school district name and assigned to one of the Oklahoma Regional Education Service Center (RESC) areas. Appendix A depicts the geographic location within the state for each of the regional education service centers. This grouping of school districts within the RESC boundaries was to insure a representative geographic distribution for the selected sample.

Each qualifying district was provided with a two-part number to serve as a basis for possible selection to the sample. The first number merely served to assign a school district to a RESC. The second number corresponded to the relative alphabetic position that the school district held within each RESC grouping. Selection began with RESC No. 1 and continued sequentially until all twenty sample school districts had been

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[3]Oklahoma State Department of Education, Oklahoma Educational Directory, 1978-79 (Bulletin No. 110A; Oklahoma: Central Printing Office, 1978), pp. 47-122.

chosen. A table of random numbers was used to select the relative position number identifying the RESC representative.[4] Selection was made by placing a pointer on the table without looking and then proceding along the row until the first number was located that matched one from the particular RESC group. A new list was developed for the twenty school districts selected to serve as the survey sample.

A profile table was developed for the sample group. Each qualifying district was listed with its (1) number of elementary schools, (2) number of middle/mid-high/jr. high schools, (3) number of senior high schools, (4) number of elementary teachers, (5) number of secondary teachers, (6) 1977-78 average daily attendance, and (7) 1977-78 total receipt of revenue. Table 1 provides the descriptive statistics for each type of data classification listed above.

TABLE 1

SAMPLE PROFILE - 20 QUALIFYING DISTRICTS

VARIABLE	MEAN	STD. DEV.	MAX	MIN	RANGE
1	7.70	7.25	34	2	32
2	1.70	1.17	5	1	4
3	1.35	.81	4	1	3
4	128.85	153.12	656	26	630
5	130.80	114.05	445	36	409
6	4,460.05	4,645.59	17,585	970	16,615
7	5,525,223.00	5,661,112.00	22,316,928	1,073,420	21,243,508

[4]N.M. Downie and R.W. Heath, Basic Statistical Methods (4th ed., Revised; New York: Harper and Row, Publishers, 1974), pp. 324-325.

The information made available by listing the different variables for each district and the subsequent profile statistics was instrumental in the decision to use total district revenue received as the primary demographic factor to cross examine the results collected via the interview questionnaire. A revenue code was assigned to each sample district based upon the following revenue ranges in Table 2.

TABLE 2

CODING TOTAL DISTRICT REVENUE RECEIVED

RANGE	CODE
$ 1 - 2,499,999	1
2,500,000 - 4,999,999	2
5,000,000 - 7,499,999	3
7,500,000 - 9,999,999	4
10,000,000 - above	5

It was in the design of this study to have all twenty RESC areas represented. When data collection was made impossible at the originally selected site, an alternate was authorized for that particular RESC group. The random selection was to be repeated for the affected group and the sample list adjusted accordingly. Only one alternate had to be selected for the sample.

Questionnaire Design

The primary purpose of the survey questionnaire was to serve as a structural set of questions to be used during the personal interview of selected school district administrators. The interview method of collecting data was considered most appropriate for this study because of the relative

newness of the theoretical background of the topics covered and the large amount of data which needed to be collected from each respondent. The structured questionnaire added the extra dimensions of standardization and sequencing to the interview process, as well as providing specific locations and coding possibilities for the obtained answers.

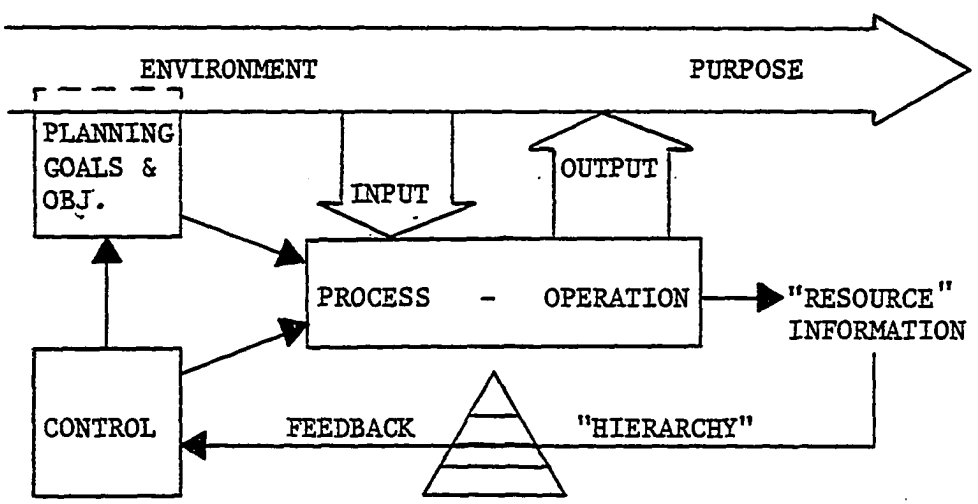
The design of the survey questionnaire centered around the first two parts of the problem statement as presented in Chapter I. To briefly restate them, they were (1) to determine how school district administrators made general fund expenditure decisions, and (2) what variables they felt would be appropriate for the design of an allocation model pertaining to the general fund accounts. The two-part questionnaire emphasized the concepts of management information systems and cost allocation.

Part I

The emphasis of Part I of the survey questionnaire was in the direction of determining current information needs for general fund decision making. Reference to Figure 1 may be helpful in the following discussions.

FIGURE 1

MANAGEMENT INFORMATION SYSTEM FOR PLANNING AND CONTROL



The model depicted in Figure 1 shows this investigator's modification of Dopuch's formal control system to meet the definition of the larger concept, MIS.[5]

To determine the information needs of school district administrators and how they made general fund decisions, Part I of the questionnaire was divided into three sub-parts. The first dealt with the role importance of general fund accounting; the second sought to measure the adequacy of current information support; and the third focused its attention on specific decision factors of selected school system resources. The combination of these three sub-parts presented the general fund decision making processes within the framework of MIS.

Sub-part A

One of the primary limitations of this study was to consider decision making criteria and cost allocation of only the general operating fund. School district administrators were involved in the accounting of general operating funds and were responsible for the expenditure patterns established. Accounting, in its broadest terms, included the steps of planning, recording, summarizing, and interpreting the effects of transactions on the affairs and activities of a fiscal unit.[6] The function of sub-part A was to determine how important a role general fund accounting played in the everyday affairs and activities of the school district administrator.

The first area to consider was the degree of relationship that existed between the position held by the administrator and the general

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[5]Nicholas Dopuch, Jacob G. Birnberg, and Joel Damski, Cost Accounting (2nd ed., Revised; New York: Harcourt Brace Jovanovich, Inc., 1974), p. 295.

[6]William W. Pyle and John A. White, Fundamental Accounting Principles (3rd ed., Revised; Homewood: Richard D. Irwin, Inc., 1961), p. 1.

fund accounting process. This was established by determining: Does general fund accounting play an important role in their role of responsibility?

For planning purposes, did the accounting function play an important role in anticipating needs and setting the objectives for the administrator and organization? This line of questioning aided in determining how much the accounting process was tied to the environment and how well defined were the purposes of the organization. In relation to the short-run requirements for planning, it was also important to determine the same degree of relatedness between the accounting process and operational needs.

The control of operations and a tie-in with the general fund accounting function should be accomplished through the recording and summarization processes. How much emphasis the administrator placed upon these functions was determined by their perceived agreement or disagreement on the role importance of general fund accounting to the control for operational success within the organization.

Evaluation should be made through the interpretation of transactions and their relationship to the activities within operations. Evaluation in this text was limited to the fiscal boundaries as identified and reported through the accounting functions of the general fund. Decisions should ultimately be made as an end result of the evaluation/feedback process of the organization; how important was the role of general fund accounting to this feedback process? In addition, how important was the accounting role to the school district administrator when preparing to evaluate the subordinates who shared in the responsibility accounting of the general fund? Finally, did the general fund accounting process play an important role in

how the school district administrator was evaluated? Each of the evaluation questions concerned the perceived appraisal by the administrator interviewed. It was understood that financial findings did not make for a complete evaluation process. However, the purpose of sub-part A was based solely on the process of accounting for general fund expenditures.

Sub-part B

The principle purpose of sub-part B was to explore the degree of adequate information support provided the organization. Information support related well to the feedback process within the planning and control model of MIS. The areas of concern were (1) information type, (2) information quality, and (3) information for change.

Information type became pertinate when one tried to determine the status or well-being of the operational unit. Starting with a general school district overview and working toward a focal point of specific programs within the system was an example of information type. The questions which were designed took the respondent from a broad overview to service performance to general program overview, and eventually to specific program performance. In this way, it was possible to determine how adequate the information support was for providing information of type value.

The quality of information was determined to be important when making decisions. A look at the perceived quality should show concensus of the study's respondents. Areas considered were (1) appropriateness of data, (2) timeliness of data, (3) accuracy of data, and (4) the provisions for alternatives.

The decision-making process should lead to action either in the operating or planning stages of the organization. Action toward operations normally required an adjustment within the process for performance errors

while action toward planning required an adjustment in standards, objectives, or goals. The action phase tested a unit's ability to quickly adjust to change. An open system has the ability to adjust rapidly and still maintain a clear understanding of the purposes and goals set forth by the unit. The degree of perceived openness was tested by the last three questions within sub-part B of the questionnaire.

Sub-part C

The assumption was made that general fund expenditures were necessary to maintain the major school resources. The purpose of sub-part C was to determine what factors the school district administrators felt were important when forced to make a fiscal decision concerning each of the resources. Only the top three choices were ranked.

The resources selected for sub-part C were:

1. Equipment
2. Facilities
3. Instructional materials and supplies
4. Other materials and supplies
5. Professional personnel
6. Classified personnel
7. Pupils
8. Programs
9. Transportation

The factors for ranking were designed to provide as many different alternatives as possible and still keep the primary separations of quantity, quality, use, natural level divisions, and service given or benefit received. All of the resources did not qualify for all of the separations; each one was considered on its own merits and requirements. The questions were open-ended to allow for additional choices.

Part II

The emphasis of Part II of the survey questionnaire was in the direction of determining the perceived basis of distribution for full cost

allocation of general fund expenditures. The accounts which were considered were those listed on the annual general fund expenditure report which must be filed each year by the local school district to the Oklahoma State Department of Education. A total of thirteen major service accounts were listed with forty-nine related sub-accounts. Each sub-account was divided into five separate areas of investigation. These areas were designed to determine (1) the sub-account's use, (2) the classification of the expense, (3) the cost behavior of the expense, (4) the best perceived allocation base, and (5) the degree of control the school district administrator had over the expenditures within the sub-account. The results were expected to lead to the development of a reliable reciprocal allocation model.

Sub-account Use

Each sub-account listed in the questionnaire was analyzed to determine its perceived cost properties and the allocation base which most often represented the opinion of the school district administrators inverviewed. Use of the sub-account became an important question; only those responding in the affirmative were asked to offer opinion on the remaining questions.

Cost Classification

Each expenditure assigned to the general fund sub-accounts was spent for school district operations. Classification of cost dealt with the ease of tracing those expenditures to the operational school site. An expense was classified as being direct if it had been incurred for the exclusive benefit of a particular school. It was classified as indirect if it had been incurred for the benefit of several services and/or schools. When sub-accounts were established, the accumulation of costs often allowed for the mixing of direct and indirect expenses. If this condition had occurred, in the opinion of the interviewee, then the option of both direct and indirect expense existed.

The ease with which direct expenditures were traceable to cost objectives did not lend itself well to the use of reciprocal allocation models. However, indirect expenditures displayed a certain degree of reciprocal interaction between services among schools to make them most appropriate for the cost allocation concept. A model for allocating reciprocal service costs to be used for decision making should be adapted to control for both the direct and indirect cost classifications.

Cost Behavior Patterns

When controlling for expenses and planning operations based upon predictions, it was important that the cost behavior patterns be analyzed and understood. The school district administrators were asked to specify the cost behavior pattern of each sub-account that they indicated using.

The determination of cost behavior patterns was related to the total expenditure fluctuations which occurred within each of the sub-accounts. The expense was said to be exhibiting a variable cost behavior pattern if changes in the level of activity within the district created a proportionate total cost change within the sub-account. A total expense within the sub-account was said to be fixed if the amount generally remained unchanged for a specific time period despite wide fluctuations in district activity. The third cost behavior pattern was one which possessed some of the characteristics of variable and fixed costs. This pattern was known as semi-variable.

Percieved Allocation Base

Allocation base had been previously defined as a systematic means of relating service costs to other service accounts and/or schools. The sub-account acted as a cost pool when the expense had been classified as indirect. These expenses, once accumulated, should be distributed to the

cost objectives which were served or benefited by the expense. Nine allocation bases were provided to serve as examples for the way the school district administrators would like to see the expenses distributed throughout the district. The allocation base examples were (1) employee, (2) classified employee, (3) professional employee, (4) pupil, (5) program, (6) grade level, (7) facility, (8) use/need, and (9) arbitrary decision. The examples were given as possible options and the interviewee was allowed to offer other means of distribution for any of the sub-accounts listed.

Control

The respondent was asked to rank the degree of control which they felt they had over the expenditure of funds within each sub-account. When adjusting resources within a district in influence the affairs and activities of the unit, the most logical starting point would be to focus upon the sub-accounts and services which were more controllable.

General fund planning and control were likely to be more effective within the district if the sub-accounts were classified direct or indirect; had an identifiable behavior pattern of variable, semi-variable, or fixed costs; had a basis for allocating the expenses throughout the district; and were ranked according to the amoung of control the unit had over them.

Pilot Study

A pilot study was carried out to discover possible questionnaire problems in the areas of design, phrasing, and content. In addition, the pilot study provided a base for testing the interview process and determining the length of time to allow for each respondent. The recommendations of the pilot study participants were incorporated into the final interview schedules and procedures.

Two school district administrators were selected from the original population to participate in the pilot study. One of the restrictions to

their selection was that they not be assigned to the study's sample as well. Further limitations were placed upon the participants in the areas of official district position and the degree of general fund involvement to which they had been exposed in the past. Both of the administrators selected for the pilot study held the position of school district superintendent. Each of them had held the same position in smaller districts before assuming their present assignments. Both superintendents were directly involved with the general fund decision making process then and had been responsible for determining operating budget/expenditure plans for the last ten years, respectively. After determining the expert qualifications of both superintendents and receiving their agreement to cooperate in the pilot study, a contact date and time was established for the interview.

The pilot study interview began by giving the superintendent an overview of what this investigator was trying to accomplish. Time was allotted for a discussion of the project and the role that they were to play in it. The questionnaire objectives of each part and sub-part were discussed in detail before the investigator proceded with the interview schedule and timing. After presenting each part and sub-part of the survey questionnaire, the superintendent was asked to respond on the purpose, format, content, and phraseology of each question. These responses were discussed and recorded by this investigator to insure proper understanding between parties. The time to allow for the interview process was determined to be between forty-five minutes and one hour.

The recommendations of the pilot study participants included numerous clarification and content related changes. Sub-part A of Part I was found to be satisfactory, while sub-parts B and C needed clarification in

purpose which meant a primary structure change in the way the questions were worded. In each of the sub-parts B and C, the investigator was encouraged to be more specific in what was expected from the respondent. The design, phrasing, and content of Part II was considered appropriate for the desired purpose. Reference may be made to the completed survey questionnaire (Appendix B) for familiarization and review.

The major recommendation to come forth from the pilot study was the provision to prepare an interview guide for use by future respondents. According to the participants, the interview guide should contain a statement of purpose(s) and an introduction to each part of the survey questionnaire with special emphasis on possible answers and definition of terms for Part II. A complete interview guide may be found in Appendix C which followed the recommendations expressed by the pilot study participants.

Data Collection

The personal interview was the technique chosen to collect the survey data from the school district administrators. Several factors made this technique the most satisfactory for this study. The sample size of experts was small with an N of twenty. Personal contact and the one-on-one relationship between interviewer and interviewee insured that the sample would be surveyed with one hundred percent return. The second factor contributing to the selection of a personal interview was the volume and complexity of the information required from each respondent. The approximate time of forty-five minutes to one hour spent with each interviewee was used productively in introducing, questionning, clarifying, and recording the results of each part and sub-part of the structured survey questionnaire.

Letter of Introduction

The selection of sample participants was made in a representative random sampling as previously identified. Initial contact was made with the school district superintendents by using a letter introducing both this investigator and the purpose behind the proposed meeting. The letter was co-authored by the Associate Dean of the College of Education at this university as an acquaintance and professional administrative colleague of each sample member. A copy of the letter of introduction may be found in Appendix D of this study. The purpose of the letter was to establish an initial environment of friendly relationship, importance and motivation toward the project, and the benefits likely to develop from such a study. Each sample participant was guaranteed anonymity in the study during initial contact; a position which was verified during the personal contact stage.

Telephone Contact

The interview appointment was made by telephone contact. The procedures for conducting the conversation were placed in flowchart format (Appendix E) and followed to insure standardization and provide structure to the purpose of the call. The primary respondent was the school district superintendent. Each telephone call was placed person-to-person to the chief administrator at which time this investigator would introduce himself and make reference to the letter of introduction and the project. If the superintendent had not received the letter of introduction or was unable to recall its content, this investigator would supply a brief statement of the purpose and a need for an interview. General questions were identified and answered before asking the superintendent to consent to an interview. If the response to the interview request was in the affirmative, the date

and time convenient to both persons was arranged. Time lag between the phone conversation and the personal interview varied as much as three weeks and as little as one day. Because of a requirement to treat each respondent equally, the interview guides were not mailed before the meetings, but taken as supportive information to be used by the interviewee during the meeting.

Three superintendents could not meet with this investigator. When this condition arose, they were asked to recommend another school district administrator who held authority and responsibility for general fund expenditure decisions within their district. The secondary choice of assistant superintendent in charge of finance or the business manager was the individual recommended. Contact was then made with these administrators to establish the date and time for the personal interview.

Interview Procedures

The first objective accomplished during the interview was to establish a positive receptive mood for the respondent. This was achieved by reviewing the purpose of the study, how the respondent was selected, what was expected of the respondent, and how the data collected would be used.

The next objective was to set the requirements for the interviewee. Emphasis was placed upon the administrative opinions held by the respondent rather than on any factual data which may or may not have been at their disposal. The interviewee was given a review of (1) relevant answers to the questions, (2) how complete the answers could be, and (3) what options were available as a response. The interview guide was presented and explained at this time.

The structured portion of the interview followed. The survey questionnaire was administered by approaching each part and sub-part in

sequence and by asking each question in turn. The responses were recorded as they were given to this investigator.

Post interview requirements consisted of editing, coding, and preparation for data processing. Editing included the transfer of recorded responses to the column set aside within the survey questionnaire for summary data. The editing function also served as a check on form completeness. Coding was a related function which served to control the data collection process and to identify the Regional Education Service Center of each respondent surveyed, the date of the interview, and the total revenue range for which the district qualified. After the editing and coding was complete, the survey questionnaire was presented for keypunching. Each response position on the survey questionnaire was assigned a field name and field position on a data record, keypunched, and then verified for accuracy.

Data Analysis

Programs

Data analysis of the responses from the survey sample began in the post interview process as explained above. The data were verified for completeness and accuracy before additional processing took place. The tabulation of results was performed by using computer crosstab programs adapted from the statistical programs for social science (SPSS). Each question was programed to show results with cross-table reference to the revenue size of the district. The total tabulation for each separate question was the principle reason for executing SPSS crosstabs programming.

Part I

The number of responses and percentages obtained for each question in sub-part A and B were transferred to the original survey questionnaire

in Appendix B. Only the number of responses was transferred for sub-part C. A weighted average for each question was computed and presented in the summary data column of the original survey questionnaire.

The presentation of findings for sub-part A and B were in table format to aid discussion. Questions were grouped by area of research and displayed with their question number, description, weighted average, and relative position within the group.

Sub-part C was presented in table format for presentation of findings. Each resource under investigation was provided with a table listing possible decision factors, the weighted average for each factor, and the factors relative position within the group. The top three rankings were considered for discussion.

Kendall's coefficient of concordance was calculated to determine the agreement among respondents on the ranking of resource decision factors for (1) facilities, (2) other materials and supplies, (3) programs, and (4) pupil transportation in sub-part C. The respondents were asked to rank only the top three factors for each resource. Resources having more than four choices were eliminated from calculation. The formula used was:[7]

$$W = \frac{12 \leqslant D^2}{m^2(N)(N^2-1)}$$

$\leqslant D^2$ = the sum of squared differences between each factor's sum of rankings and the mean of the sum of ranks total.

m^2 = square of number of respondents.

N = number of factors ranked.

The coefficients obtained were checked for significance at the one percent level.[8]

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[7]N.M. Downie and R.W. Heath, op.cit., pp. 120-122.

[8]N.M. Downie and R.W. Heath, op.cit., pp. 322-323.

Sub-parts A and B were summarized in table form to rank the different topical areas under investigation. Questions relating to similar topical data were combined and provided with a response sub-weighted average. The sub-weighted average was calculated by adding each of the related question weighted averages and computing the mean.

Sub-part C was summarized by dividing the resources into two categories. One category each for direct and indirect resources for information. A table for each category was provided giving the top three decision factors for each resource. Analysis focused upon identification of trend information.

Part II

The number of responses for each question was transferred to the original survey questionnaire in Appendix B. A weighted average was computed for each question and presented in the summary data column.

The forty-nine sub-accounts were grouped with the thirteen major general fund accounts. Each major account was presented in table format with related discussion. The table provided a list of related sub-accounts with a weighted average calculated for (1) use, (2) classification, (3) behavior, and (4) control. A base of allocation was listed for each sub-account to indicate the recommended means of expense distribution. A single allocation base was chosen if a recommended means of distribution received over fifty percent of the responses. Multiple allocation bases were identified when two or more recommended means of distribution received over fifty percent of the responses in combination and no single base was indicated.

The sub-accounts were analyzed according to the following restrictions. Normal interpretation was performed on sub-accounts showing a use response of eleven or more respondents. Sub-accounts with a use response of four to ten respondents were interpreted as having minimum data available and

were given a position in the table and added to the discussion. Sub-accounts with a use response of less than four respondents were eliminated from discussion and labeled as having insufficient data available for interpretation.

Part II was summarized by plotting the weighted class, behavior, and control averages for each general fund service account. The allocation bases were summarized in a table format. The sub-accounts assigned to each service account were combined to provide the summary data.

Summary

The purpose of Chapter III was to describe the procedures which were necessary for (1) identifying the population's sample, (2) designing the survey questionnaire, (3) testing the survey questionnaire and interview process with the pilot study, (4) collecting the data, and (5) categorizing and analyzing the data collected. These procedures were carried out in the course of this study so that the framework of a reciprocal allocation model could be developed.

CHAPTER IV

SURVEY FINDINGS

Introduction

The purpose of this chapter was to report the findings obtained from a statewide survey to determine (1) how general fund expenditure decisions were currently being made by school district administrators, and (2) what variables school district administrators felt were appropriate as a basis of distribution when applying a reciprocal allocation model to a public school district general fund. A description of the procedures used in designing the skeleton reciprocal allocation model completes Chapter IV.

Part I

Part I of the survey questionnaire was designed specifically to determine how school district administrators made general fund expenditure decisions. Each sub-part within Part I was analyzed separately in order to pull together the responses from the twenty sample members and report their findings. An one hundred percent response was received for each question within Part I. An accounting for each question was presented in Appendix B for a complete summary of results.

Sub-part A

Each school district administrator was asked eight questions in sub-part A. They were grouped by purpose to determine the role general fund accounting plays in (1) the respondent's area of responsibility, (2) the stages of district planning, (3) the control and adjustment apparatus, and (4) the feedback/evaluation processes regarding operations, and appraisal of general and central level administrators.

The degree of relationship between the school district administrator and general fund accounting was determined to be very strong. Eighteen of the twenty respondents strongly agreed that general fund accounting played an important role in their area of responsibility. Two of the twenty were in agreement with the statement. Calculating the number of responses by the scale value of the response given provides an average weight of 4.9 for question A 1.

General fund accounting plays an important role in the planning process for school district administrators. Table 3 was prepared to show

TABLE 3

GENERAL FUND ACCOUNTING AND DISTRICT PLANNING

Item No.	Description	Weighted Average	Group Ranking
A 2	Setting Objectives	3.70	3
A 3	Anticipating Future Operation Needs	4.85	1
A 4	Planning to Meet Operation Needs	4.80	2

the three related survey areas making up the planning function under study. The respondents indicated that the general fund accounting played a less important role in setting district objectives than either anticipating or planning to meet future needs of operations. While each survey area was considered important, anticipating future operation needs was most related to the role of general fund accounting. The average weight for this measure of involvement with a leading environmental factor was a high of 4.85 with eighty-five percent of the respondents strongly agreeing to the importance of question A 3. The ranking of activities within the overall function of planning appeared as (1) anticipating future needs, (2) operations planning (performance standards communicated), and (3) setting district objectives.

The control and adjustment functions of the school district administrator were influenced by the role of general fund accounting. Participants responded that it was important while one member answered that general fund accounting played no role at all in the control and adjustment function.

General fund accounting played a less important role in the evaluation process of school district administration than any of the previous functions studied. Table 4 was prepared to show the three related survey

TABLE 4

GENERAL FUND ACCOUNTING AND EVALUATION

Item No.	Description	Weighted Average	Group Ranking
A 6	Evaluating Operational Success	3.8	2
A 7	How Subordinates Are Evaluated	3.4	3
A 8	How Administrators Are Evaluated	4.2	1

areas making up the feedback/evaluation function under investigation. The responses to A 8 indicated that the accounting of general fund operations played an important role in how the respondents were evaluated by their superiors. As the results for questions A 6 and A 7 indicated, the school district administrators did not place as strong an importance upon general fund accounting when evaluating their district operations and subordinates. In the relationship between general fund accounting and district evaluations, the sample respondents ranked the activities in importance as (1) administrator appraisal, (2) operation performance, and (3) subordinate appraisal. Data shown in Appendix B indicated that fifty percent of all respondents were in equal agreement with the overall importance of the three activities.

Sub-part B

Eleven questions were asked each school district administrator to determine how adequate their current information support was within the area of general fund expenditures. The questions were grouped according to (1) information type, (2) information quality, and (3) information for change.

Questions B 1 to B 4 were asked of each respondent to determine if the information support was adequate for providing data related to current operations. Data in Table 5 show that the current information support was strongest in providing data for general school district overviews (question B 1) and weakest in providing information support in the area of specific program performance (question B 4). The order in which the type of information conveyed data was the (1) broadest overview, (2) specific services, (3) general programs, and (4) specific programs. Accordingly, the adequacy of current information support in specific areas, as shown by the rankings, was thought to be undecided by the respondents. As many as fifty percent of the school district administrators responded that the information support

was undecided or inadequate for providing data to identify specific program performance within the district.

TABLE 5

INFORMATION SUPPORT AND CURRENT OPERATIONS

Item No.	Description	Weighted Average	Group Ranking
B 1	General School District Overview	4.45	1
B 2	Specific Service Performance	4.05	2
B 3	General Program Overviews	3.70	3
B 4	Specific Program Performance	3.05	4

Questions B 5 to B 8 were asked to determine the quality of the information support received. Table 6 is provided to show the weighted

TABLE 6

INFORMATION SUPPORT AND DATA QUALITY

Item No.	Description	Weighted Average	Group Ranking
B 5	Appropriate	4.00	2
B 6	Timely	3.90	3
B 7	Accurate	4.20	1
B 8	Alternatives	3.15	4

average and the group ranking for each question. The four questions were asked in reference to making decisions. Eighty-five percent of the respondents

were in agreement or strong agreement that the data they used for making decisions were accurate. The top ranking of 1 with a weighted average of 4.20 supported this finding. The appropriateness and timeliness of the data ranked strong while the question concerning alternatives for decisions ranked last. The respondents showed a split in their response to question B 8. Sixty percent were in agreement with its adequacy to provide alternatives while forty percent were in disagreement.

Information support for anticipating future requirements for change and for planning and controlling that change was important to the effectiveness and survival of the district. Questions B 9 to B 11 were asked to determine the degree with which the current information support was coordinating the purposes of the district with its environment. Table 7 contains a summary of the results for the three questions and shows a ranking

TABLE 7

INFORMATION SUPPORT AND FUTURE CHANGE

Item No.	Description	Weighted Average	Group Ranking
B 9	Anticipating Future Change	3.85	1.5
B 10	Planning for Future Change	3.85	1.5
B 11	Control for Successful Change	3.50	3

for the group. A tie was recorded for the responses to questions B 9 and B 10. The respondents were in agreement that the anticipation of future change would lead to planning to meet those changes. Seventy-five percent of the participants responded that current information support was adequate for providing

data for anticipating future change. Eighty percent indicated the support was adequate for providing data to meet the planning needs for future change. Results from question B 11 indicated that the respondents needed more than general fund information in order to control for successful change.

Sub-part C

General fund expenditures were necessary to maintain school district resources. The respondents were asked to rank the top three factors which they felt were most important to them when making fiscal decisions concerning each of the resources provided. The rankings were: No. 1 = very high in importance; No. 2 = high in importance; No. 3 = important; and No. 4 = not selected as important.

Equipment

The respondents felt that the factors to be considered as important when deciding expenditures for the maintenance of equipment were (1) the usage of the equipment, (2) its present condition, and (3) the program to which it was assigned within the district. Table 8 provides the weighted

TABLE 8

RANKING THE THREE MOST IMPORTANT RESOURCE FACTORS: EQUIPMENT

Factor	Weighted Average	Group Ranking
Age	3.90	5
Condition	2.15	2
Program	2.30	3
Type/Number	3.75	4
Usage	1.90	1

average for each factor and shows its ranking within the group. The percentages of respondents selecting the top three factors agreed with the group ranking. Fifty-five percent of the first choice responses were cast for equipment usage; sixty percent of the second choice responses were cast for the condition of the equipment; and, the high of forty percent of the third place responses were cast for program assignment.

Facilities

The school district administrators responded that the important factors of (1) use, (2) condition, and (3) size were necessary when making decisions concerning the maintenance of school district facilities (Table 9).

TABLE 9

RANKING THE THREE MOST IMPORTANT RESOURCE FACTORS: FACILITIES

Factor	Weighted Average	Group Ranking
Age	3.55	4
Condition	2.05	2
Size	2.90	3
Use	1.50	1

The percentages of results coincided with the group rankings. Seventy percent of the first place responses were recorded for facility use; forty-five percent of the second place responses were recorded for facility condition; and, size received thirty-five percent of third place and thirty percent of the second place responses. The respondents were asked to rank only the top three factors. Kendall's coefficient of concordance computed to be W=.493, a number significant at the one percent level.

Instructional Materials and Supplies

The factors considered most important when making decisions concerning the expenditure of general fund monies for instructional materials and supplies were (1) the type of program involvement, (2) the subject area of the program, and (3) the pupil's grade level. Sixty-five percent of the responses listed program type in first place while subject received the highest percentage of the responses for the ranking of second place. Pupil grade level was third in the ranking. Table 10 provides a listing of the

TABLE 10

RANKING THE THREE MOST IMPORTANT RESOURCE FACTORS: INSTRUCTIONAL MATERIALS AND SUPPLIES

Factor	Weighted Average	Group Ranking
Stock Type	3.80	5
Program Type	1.65	1
Pupil Grade Level	3.15	3
Subject	2.45	2
Source of Funds	3.25	4

available factors for instructional materials and supplies with their respective weighted averages and within group rankings.

Other Materials and Supplies

When faced with making fiscal decisions concerning the purchase of materials and supplies other than for instruction, the school district administrators ranked service given, type of program assigned, and the total volume of the material to be the important factors. Service given, in relation to the material and supply, received fifty-five percent of its responses as first

place; program type and volume both received very close ratings with program type receiving more first place responses than did volume. The rankings within group in Table 11 indicated the closeness between number 2

TABLE 11

RANKING THE THREE MOST IMPORTANT RESOURCE FACTORS: OTHER MATERIALS AND SUPPLIES

Factor	Weighted Average	Group Ranking
Stock Type	3.20	4
Program Type	2.55	2
Volume	2.70	3
Service Given	1.85	1

and 3 rankings. Kendall's coefficient of concordance was calculated to be W=.1865, a number significant at the one percent level.

Personnel-Professional

Professional personnel included the benefits and salary for administrators, instructional staff, and teachers. A majority of respondents replied that the type of program with which each was associated should be the most important factor when deciding general fund expenditures for this group. Fifty-five percent of the first place responses were cast for program type. Source of the general funds was number two in importance and received the majority of second place responses. Total number was ranked three in importance by receiving the second highest first place responses and the second highest second place responses. Table 12 indicates the weighted average and within-group ranking of each factor under investigation.

TABLE 12

RANKING THE THREE MOST IMPORTANT
RESOURCE FACTORS: PERSONNEL-PROFESSIONAL

Factor	Weighted Average	Group Ranking
Total Number	2.90	3
Source of Funds	2.70	2
Program Type	1.85	1
Years Service	3.40	4
Degree Level	3.45	5

Personnel-Classified

Classified personnel included the benefits and salary for clerical, custodial, and maintenance employees. The type of program (work) to which each employee was assigned received forty-seven percent of the first place responses and ranked number one in the grouping (Table 13). The total number

TABLE 13

RANKING THE THREE MOST IMPORTANT
RESOURCE FACTORS: PERSONNEL-CLASSIFIED

Factor	Weighted Average	Group Ranking
Total Number	2.80	2
Source of Funds	3.05	4
Program Type	1.95	1
Years Service	3.45	5
Experience Level	2.90	3

of employees ranked second highest in first place responses with thirty-one and a half percent to lead the third place ranking experience level by one-tenth of a point in weighted average. Second place responses were equally distributed among all of the factors which probably indicated a difficult choice for respondents.

Pupils

The respondents were asked to rank the factors which they felt were most important to them when making general fund expenditure decisions regarding this primary input/output resource. The responses for first choice were recorded for program track with forty-five percent and the pupil enrollment/membership with thirty percent. The first place responses were instrumental in setting the group rankings because of the near equal spread of responses for all factors in the remaining second and third choices. Table 14 provides the weighted average and within-group ranking for each factor investigated. The respondents ranked program as number one, enrollment as number two, and grade level as number three in importance.

TABLE 14

RANKING THE THREE MOST IMPORTANT RESOURCE FACTORS: PUPILS

Factor	Weighted Average	Group Ranking
Enrollment	2.40	2
Average Daily Attendance	3.35	5
Grade Level	3.00	3
Source of Funds	3.10	4
Program Track	2.15	1

Programs

The respondents reported that it was important to consider the subject area, grade level, and total number of programs throughout the system when making expenditure decisions for the maintenance of school district programs. Subject area received the largest amount of first place responses with sixty percent, which accounted for its very high ranking within the group. Grade level received forty-five percent of the second place responses while total number of programs received forty percent for third place. These percentages corresponded to the final group rankings found in Table 15. Kendall's coefficient of concordance was calculated to be W=.177, a number non-significant at the one percent level.

TABLE 15

RANKING THE THREE MOST IMPORTANT RESOURCE FACTORS: PROGRAMS

Factor	Weighted Average	Group Ranking
Total Number	2.75	3
Source of Funds	2.90	4
Grade Level	2.65	2
Subject Area	1.70	1

Pupil Transportation

The respondents indicated that they were more interested in the total pupil use of bus transportation when making decisions for transportation than they were for the average daily haul figures which are used for reimbursement of expenditures. Table 16 gives the weighted average and

TABLE 16

RANKING THE THREE MOST IMPORTANT
RESOURCE FACTORS: TRANSPORTATION-PUPIL

Factor	Weighted Average	Group Ranking
Total Route Miles	2.10	2
Average Daily Haul	2.35	3
Total Pupil Use	1.55	1

group ranking for each of the factors investigated. Total pupil use received sixty percent of the first place responses while total route miles received twenty-five percent and average daily haul received fifteen percent. The calculation of Kendall's coefficient of concordance provided a result of W=.1675, non-significant at the one percent level.

Part I - Summary Findings

Each sub-part within the survey questionnaire was designed to present specific data pertaining to (1) the role general fund accounting played in the functions of the organization, (2) the current information support received to aid in decision making, and (3) the most important factors to be considered when making expenditure decisions for the maintenance of selected district resources. The following paragraphs were provided to summarize each sub-part as a means of answering the question of how school district administrators make general fund expenditure decisions.

Table 17 provides the summary of sub-part A. The emphasis was the importance of the role of general fund accounting to the respondents area of responsibility, and to the primary functions of planning, control, and evaluation. The rankings indicated that the roles general fund accounting

TABLE 17

SUMMARY ROLE IMPORTANCE OF GENERAL FUND ACCOUNTING

Item (No.s)	Sub-Weighted Averages	Group Ranking
Responsibility (A 1)	4.90	1
Planning (A 2, A 3, A 4)	4.45	2
Control (A 5)	4.35	3
Evaluation (A 6, A 7, A 8)	3.80	4

played in importance to the school districts were (1) the establishment of very strong responsibility ties with the administrators, (2) the provision of a strong involvement with the environmental factors for planning operational needs, (3) the capacity for adjusting rapidly for control of operations, and (4) the means for evaluating the performance of school district administrators, operations, and subordinate personnel.

Sub-part B was to determine the degree of adequacy of the respondent's current information support for general fund expenditures. Three areas were considered during the investigation: information type, information quality, and information for change. The current information support system was providing the school district administrator with an equal amount of information by type and quality and a lesser amount of information for anticipating planning and controlling for change (Table 18). The low sub-weighted average for each area could be attributed to (1) a lack of adequate data for identifying specific program performances, (2) the difficulty

TABLE 18

SUMMARY INFORMATION SUPPORT FOR GENERAL FUND DECISIONS

Item (No.s)	Sub-Weighted Averages	Group Ranking
Information Type (B 1, B 2, B 3, B 4)	3.81	1.5
Information Quality (B 5, B 6, B 7, B 8)	3.81	1.5
Information for Change (B 9, B 10, B 11)	3.73	3

encountered when providing alternatives for decision making, and (3) the lack of adequate data to successfully control for change.

Sub-part C indicated the specific factors which the school district administrator felt were important when making general fund expenditure decisions concerning selected school district resources. The resource may be further divided into the two categories; those directly related to instruction and those indirectly related to instruction. Tables 19 and 20 provide the results of these two sub-divisions and list each resource along with the top three factors as identified by the school district administrators.

The resources categorized as direct for instruction were (1) instructional materials and supplies, (2) professional personnel, (3) pupils, and (4) programs. The pattern established by presenting the data in the format of Table 19 indicated a very strong commitment on the part of school district administrators to view programs within the school district as the most important factor when making expenditure decisions concerning direct instructional resources.

TABLE 19

SUMMARY RESOURCE FACTORS:
DIRECT FOR INSTRUCTION

Resource	Factors		
	Very High Important	High Important	Important
Instructional Materials And Supplies	Program	Subject	Grade
Professional Personnel	Program	Fund Source	Number
Pupils	Program	Enrollment	Grade
Program	Subject	Grade	Number

TABLE 20

SUMMARY RESOURCE FACTORS:
INDIRECT FOR INSTRUCTION

Resource	Factors		
	Very High Important	High Important	Important
Equipment	Use	Condition	Program
Facilities	Use	Condition	Size
Other Materials And Supplies	Service Given	Program	Volume
Classified Personnel	Program Task	Number	Experience
Pupil Transportation	Use	Miles	ADH

The resources categorized as indirect for instruction were (1) equipment, (2) facilities, (3) other materials and supplies, (4) classified personnel, and (5) pupil transportation. The pattern established indicated that the

school district administrators were very much interested in how a resource was to be used when expending general fund money for the maintenance of those resources. Use appeared to have been very high in importance when making general fund expenditure decisions concerning indirect instructional resources.

Part II

Part II of the survey questionnaire was designed specifically to determine what variables school district administrators perceived appropriate as a basis of distribution when applying a reciprocal allocation model to a public school district general fund. The list of forty nine sub-accounts provided in Part II were grouped and presented with their assigned service account for reporting the findings. A one-hundred percent response was received for each question within Part II. An accounting for each question is presented in Appendix B for a complete summary of results.

Each of the thirteen service accounts were listed and provided results in the form of weighted averages for use, class, behavior, and control. The recommended allocation base(s) were chosen after insuring that over fifty percent of the responses had been adapted to the sub-account. Use was coded with either a (1) yes, or (2) no; class was coded with either a (1) direct, (2) both, or (3) indirect; behavior was coded with either a (1) variable, (2) mixed, or (3) fixed; and, control was coded with either a (1) excellent, (2) good, (3) fair, or (4) poor. All weighted averages within Part II respond to the above numbering system.

Administrative Services 0100 Series

All three sub-accounts were used by the respondents (Table 21). The classification of the costs was considered indirect to the schools with the

TABLE 21

ADMINISTRATIVE SERVICES:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries	1.00	2.95	2.65	1.25	Prof. Employee & Pupil
Contracted Services	1.10	2.90	1.94	2.06	Use/Need & Arbitrary or Pupil
Other Expenses	1.00	2.85	1.50	1.95	Use/Need & Arbitrary

resultant behavior pattern changing from a fixed pattern for salaries, semi-variable pattern for contracted services, and to a more variable pattern for other expenses for administration. The control over the expenditures within administrative services shifted from excellent control over salaries to good control for contract services and other expenses. The base for allocating administrative services was determined to be based upon a ratio between professional personnel and pupils for the salary sub-account and upon some combination of use/need concept and arbitrary distribution (considering a per pupil distribution) for contracted services and other expenses sub-accounts.

Instructional Services 0200 Series

All of the five sub-accounts charged to this major service area were used by the respondents (Table 22). The sub-accounts for salary and textbooks were classified as direct expenditures to the schools while the remaining three were classified as having both direct and indirect expenses within them. The salary sub-account was assigned a fixed behavior pattern due to the nature of payment. Semi-variable cost behavior patterns were indicated

TABLE 22

INSTRUCTIONAL SERVICES:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries	1.00	1.20	2.70	1.25	Prof. Employee
Textbooks	1.05	1.47	1.89	1.63	Pupil & Program
School Lib. & A-V Materials	1.00	1.80	1.85	1.75	Pupil & Program
Teaching Supplies	1.00	1.85	1.65	1.75	Prof. Employee & Pupil or Program
Other Expenses	1.05	1.89	1.42	1.84	Pupil & Use/Need

within the sub-accounts; textbooks, school libraries and audio-visual materials, and teaching supplies. The one sub-account assigned a purely variable cost behavior pattern was other expenses for instruction. Excellent control was expressed over the one fixed cost sub-account, salaries. Good control was indicated for the other sub-accounts. The base(s) of allocation for each sub-account varied with the exception of textbooks and school libraries and audio-visual materials which shared the pupil and programs distribution concept. Salaries required an allocation based upon professional personnel. The teaching supplies sub-account required a combination of professional personnel and pupil or program as an allocation base. Other expenses for instruction sub-account required an allocation base incorporating the benefits of the use/need and per pupil concepts.

Attendance Services 0300 Series

The two sub-accounts which made up the major account of attendance services were seldom used by the school district administrators. The results

given for the two sub-accounts, salaries and other expenses for attendance services, were based upon user's percentages of thirty and twenty respectively. Both of the sub-accounts were classified as indirect expenses to the cost objectives with salaries possessing a fixed cost behavior pattern and other expenses expressing a variable behavior pattern (Table 23). The

TABLE 23

ATTENDANCE SERVICES:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries*	1.70	2.50	2.50	1.83	Use/Need
Other Expenses*	1.80	3.00	1.25	1.75	Use/Need

*Minimum data available for interpretation

respondents have expressed good control over the expenses within both sub-accounts. In both cases, the use/need concept was recommended for the allocation base.

Health Services 0400 Series

The respondents indicated that only forty-five percent used the salaries sub-account and only forty percent used the other expenses for health services sub-account. With these restrictions identified, Table 24 was prepared showing the results of those participating in the responses. The classification of the two costs was only four tenths of a point apart; however, the salaries sub-account was considered to possess both direct and indirect expenses, while the sub-account, other expenses, was expressed as being indirect. Seventy-five percent of the participating respondents had chosen indirect as the class for other expenses. The behavior pattern for salaries was considered fixed while other expenses were seen as semi-variable

TABLE 24

HEALTH SERVICES:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries*	1.55	2.10	3.00	1.89	Use/Need & Program
Other Expenses*	1.60	2.50	1.63	2.00	Use/Need & Program

*Minimum data available for interpretation

in behavior. In both sub-accounts, the control expressed by the respondents was good. The health services account can be allocated by developing a base which incorporates both the use/need and program concepts of distribution.

Pupil Transportation 0500 Series

The sub-accounts which were not frequently used by the majority of respondents were contract services and public carriers (ninety-five percent non-use), and expenditures in lieu of transportation (seventy-five percent non-use). Table 25 illustrates the results with restrictions noted.

The expenses within each of the sub-accounts were expressed as being an indirect classification of costs except expenditures in lieu of transportation. The average weight of 2.40 placed the cost in both classifications while sixty percent of the participating respondents chose to rank it as an indirect expenditure. The fixed behavior patterns were associated with the salaries, replacement for vehicles, and transportation insurance sub-accounts. The variable behavior pattern was assigned to the sub-accounts, expenditures in lieu of transportation and other expenses for operation and maintenance. Excellent control over the expenses within the sub-accounts was afforded to salaries and replacement for vehicles while all of the other sub-accounts

TABLE 25

PUPIL TRANSPORTATION:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries	1.05	2.68	2.63	1.42	Use/Need
Contracted Services*	1.95	-	-	-	-
Replacement of Vehicles	1.15	2.88	2.59	1.40	Use/Need
Transportation Insurance	1.10	3.00	2.78	1.94	Use/Need
Expenditures in Lieu**	1.75	2.40	1.00	2.40	Use/Need
Other Expenses	1.05	2.84	1.32	2.00	Use/Need

*Insufficient data available for interpretation
**Minimum data available for interpretation

rated good control. The recommended allocation base in each case was the use/need concept of distribution.

Operation of Plant 0600 Series

The only sub-account not used by a majority of respondents was contracted services for operation of plant. There was a seventy-five percent non-use of the sub-account. However, all of the sub-accounts were listed and analyzed with the restriction noted. Table 26 provides a summary of the results. The salaries sub-account was the only cost pool which was expressed as a direct charge to the schools; the others were classified as possessing both direct and indirect expense characteristics with the exception of the supplies sub-account which was given as indirect. The behavior pattern most often assigned was the variable cost behavior. Salaries and

TABLE 26

OPERATION OF PLANT:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries	1.00	1.45	2.45	1.50	Facilities
Contracted Services*	1.75	2.40	1.40	2.60	Use/Need
Heat for Bldgs.	1.00	2.35	1.35	3.05	Facilities
Utilities, Except Heat	1.00	2.35	1.35	3.00	Facilities
Supplies, Except Utilities	1.00	2.55	1.65	2.00	Facilities
Other Expenses for Opera. of Plant	1.15	2.29	1.35	2.23	Facilities

*Minimum data available for interpretation.

supplies were expressed as semi-variable costs. None of the behavior patterns were considered fixed in nature. Control was rated excellent for salaries. The sub-accounts rated with good control were supplies and other expenses. The respondents rated fair control for the sub-accounts; contracted services, heat for buildings, and utilities. The principle allocation base for the service account, operation of plant, was recommended to be facilities in all but one case.

Maintenance of Plant 0700 Series

Each of the sub-accounts assigned to the maintenance of plant account were used by the majority of respondents. Contracted services for maintenance was the least used sub-account with sixty percent of the school district administrators indicating use. Other expenses for maintenance was the only sub-account which did not meet the classification and behavior pattern

for costs set by the other three sub-accounts (Table 27). The majority of sub-accounts indicated both direct and indirect expenses to the schools

TABLE 27

MAINTENANCE OF PLANT:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries	1.10	2.44	2.39	1.56	Use/Need & Facilities
Contracted Services	1.40	2.30	1.58	2.00	Use/Need
Replacement of Equipment	1.25	2.00	2.00	1.87	Use/Need
Other Expenses	1.10	2.56	1.28	2.00	Use/Need & Facilities

and behavior patterns which were expressed as semi-variable in nature. Other expenses for maintenance was classified as being more indirect and having a more variable behavior pattern. The control of expenses within each sub-account was expressed as being good. The allocation base was nearly uniform for the use/need concept of distribution; where facilities were added, the percentages for use/need were forty-four and fifty respectively requiring an additional base to put them over the fifty-percent mark.

Fixed Charges 0800 Series

The four sub-accounts assigned to the fixed charges account are listed for review in Table 28. School district contributions to social security and retirement and the insurance sub-accounts were the only two used by the majority of respondents. Rental of lands and buildings was used by ten percent of the school district administrators and twenty-five percent indicated that they were currently using other fixed charges sub-account. With these

TABLE 28

FIXED CHARGES:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
School District Contribution	1.00	1.90	2.65	1.90	Employee
Insurance	1.00	2.60	2.80	1.75	Facilities
Rental of Lands and Buildings*	1.90	2.00	3.00	1.50	Use/Need
Other Expenses**	1.75	2.60	1.40	2.40	Use/Need

*Insufficient data available for interpretation
**Minimum data available for interpretation

restrictions noted, the following results were provided. The results given by the respondents indicated that the school district's contribution to social security and retirement should be classified as possessing both direct and indirect expenses. All employee contributions were pooled in this one sub-account. Insurance was indicated to be more indirect in classification. The behavior patterns for both school district contributions and insurance were considered fixed over the school's fiscal period. Analysis of the results for the five respondents using the other fixed charges sub-account indicated indirect classification of costs and a variable behavior pattern. The control expressed by the respondents was recognized as good in all cases. The allocation base for school district contributions was one hundred percent in favor of per-employee distribution; eighty percent in favor of facilities for the insurance sub-account; and, use/need for other fixed charges.

Food Services 0900 Series

The two sub-accounts assigned to the food services account were salaries and other expenses. The majority of respondents indicated non-use of the sub-accounts for accounting purposes. Table 29 was prepared to

TABLE 29

FOOD SERVICES:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries*	1.75	3.00	2.60	1.40	Use/Need
Other Expenses**	1.85	2.30	1.70	1.70	Use/Need

*Minimum data available for interpretation
**Insufficient data available for interpretation

summarize the results from the respondents who indicated using the two sub-accounts. Salaries sub-account was used most often and was classified as being indirect expense to the schools and possessing a fixed behavior pattern. The control was indicated as being excellent due to its contracted nature. The recommended allocation base would be use/need distribution.

Student Body Activities 1000 Series

The salaries sub-account was used by twenty-five percent of the respondents surveyed while other expenses sub-account was used by thirty percent. Table 30 was prepared to show the results of user responses. Each sub-account was analyzed as possessing both direct and indirect expenses. Other expenses sub-account was more direct by nature than salaries. Each displayed a semi-variable behavior pattern in the fluctuation of expenses within the sub-accounts. The results indicated that the control of other expenses was excellent to good; while overall salaries was rated as

TABLE 30

STUDENT BODY ACTIVITIES:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Salaries*	1.75	2.20	2.00	2.00	Program & Use/Need
Other Expenses*	1.70	1.50	2.30	1.50	Program & Use/Need

*Minimum data available for interpretation

good. An allocation base using a combination of program and use/need distribution would be the most appropriate for both sub-accounts.

Community Services 1100 Series

The sub-accounts assigned to community services were not used by a significant number of respondents to warrant interpretation of data received. The recreation sub-account was used by one of the twenty respondents; two of the twenty used civic activities; and, no one reported using public libraries, custodial and detention care of children, welfare activities, or non-public school pupils accounts.

Outgoing Transfer Accounts 1190 Series

Property revaluation was the only sub-account which indicated any significant use by the respondents. Tuition and transfer fees to other districts was used by thirty-five percent of the school district administrators which provided for a minimum amount of data for interpretation of findings. Tuition and transfer fees to vocational-technical districts and all other transfer expenses were used by ten percent and five percent of the respondents respectively. Table 31 was prepared with the above restrictions noted. Tuition and transfer fees to other districts was indicated

TABLE 31

OUTGOING TRANSFER ACCOUNTS:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Tuition/Transfer Other Districts*	1.65	1.70	1.85	1.29	Use/Need
Tuition/Transfer Vo-Tech**	1.90	1.00	3.00	1.50	Use/Need
Other Expenses**	1.95	3.00	1.00	2.00	Use/Need
Property Revaluation	1.40	2.83	1.67	3.58	Arbitrary & Pupil

*Minimum data available for interpretation
**Insufficient data available for interpretation

by participating respondents to be classified as possessing both direct and indirect expenses to be allocated to the schools. The costs behavior pattern was recognized as being semi-variable; the control excellent and use/need distribution provided as an allocation base. The sub-account property revaluation was viewed by the respondents as having an indirect expense classification with a semi-variable behavior pattern. Control over the expenses within this sub-account was rated as poor to fair by the respondents. The recommended allocation base was reported to be a combination of arbitrary and per-pupil distribution.

Capital Outlay 1200 Series

A majority of respondents indicated a use of the three sub-accounts assigned to capital outlay. Reference to Table 32 indicated the strong similarity between each of the sub-accounts in all areas of investigation. They were identified as having both direct and indirect expenses within their pool of costs; recognized as possessing a semi-variable behavior

TABLE 32

CAPITAL OUTLAY:
ALLOCATION OF GENERAL FUND EXPENDITURES

Sub-Account	Weighted Averages				Base of Allocation
	Use	Class	Behavior	Control	
Sites	1.35	1.92	2.07	1.30	Use/Need
Buildings	1.30	1.93	2.00	1.28	Use/Need
Equipment	1.20	1.80	1.80	1.44	Use/Need

pattern with a portion of fixed and variable expenses; and, displaying an excellent amount of control for the school district administrator over expenses. An allocation base of use/need was expressed by the majority of respondents as the systematic means of distribution to be implemented.

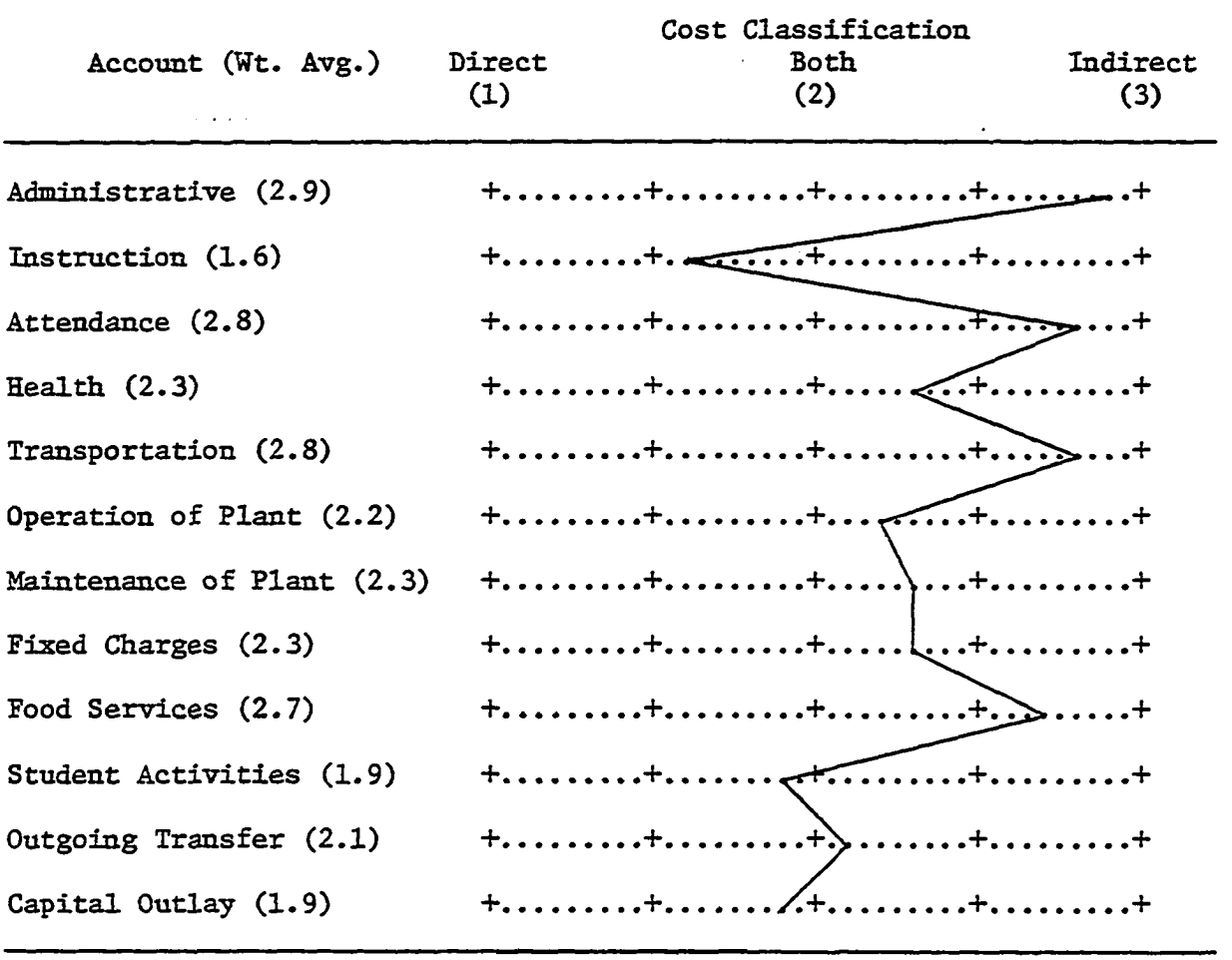
Part II - Summary Findings

The forty nine sub-accounts were presented to determine the individual variables school district administrators perceived appropriate for use in developing a reciprocal allocation model. The following summary was prepared to show the effects of the data collected upon the major service accounts. The completed model was based upon an adaption and summary of the sub-accounts assigned to each of the general fund service accounts. The summary findings are presented and plotted as weighted averages providing a pictorial base of reference for cost classifications, cost behavior patterns, and levels of control. The recommended allocation base(s) were summarized to provide a laconic reporting of findings in the order of their importance.

The cost classification for each service account were plotted in Figure 2. Each service account in summary was classified as costs which

FIGURE 2

A PLOTTING OF COST CLASSIFICATIONS
FOR GENERAL FUND SERVICE ACCOUNTS

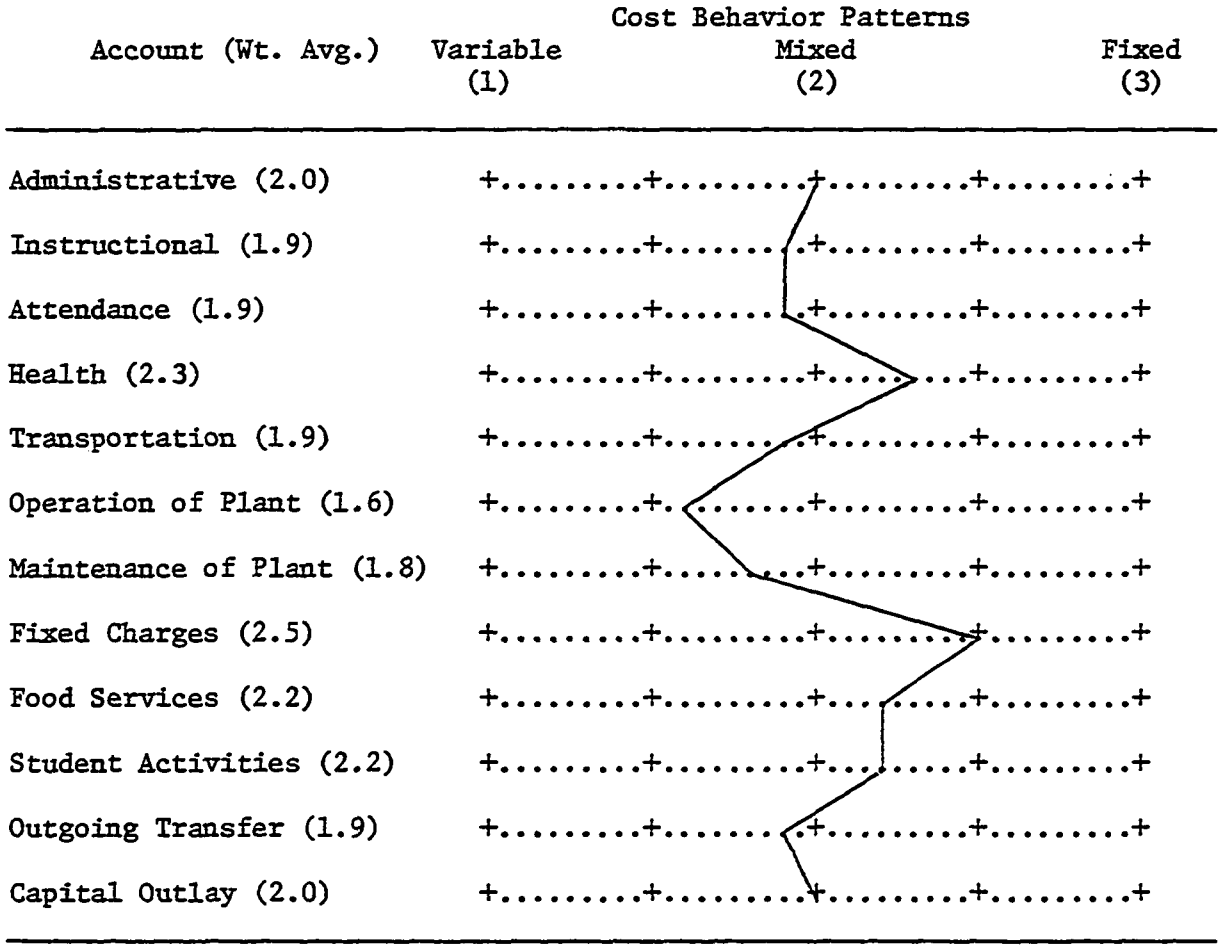


were incurred for the exclusive benefit of a particular school (direct); incurred for the benefit of several services and/or schools (indirect); or, they were classified as possessing costs which may be of both direct and indirect character. The service accounts which indicated a more indirect cost classification were (1) administrative, (2) attendance, (3) pupil transportation, and (4) food services. The service account displaying the greatest amount of direct costs was instructional services. Instruction possessed both direct and indirect costs in sufficient combination to keep it from being given a direct cost classification.

The cost-behavior patterns for each service account were plotted in Figure 3. The tendency for the line of plots to fall within the central

FIGURE 3

A PLOTTING OF COST BEHAVIOR PATTERNS
FOR GENERAL FUND SERVICE ACCOUNTS



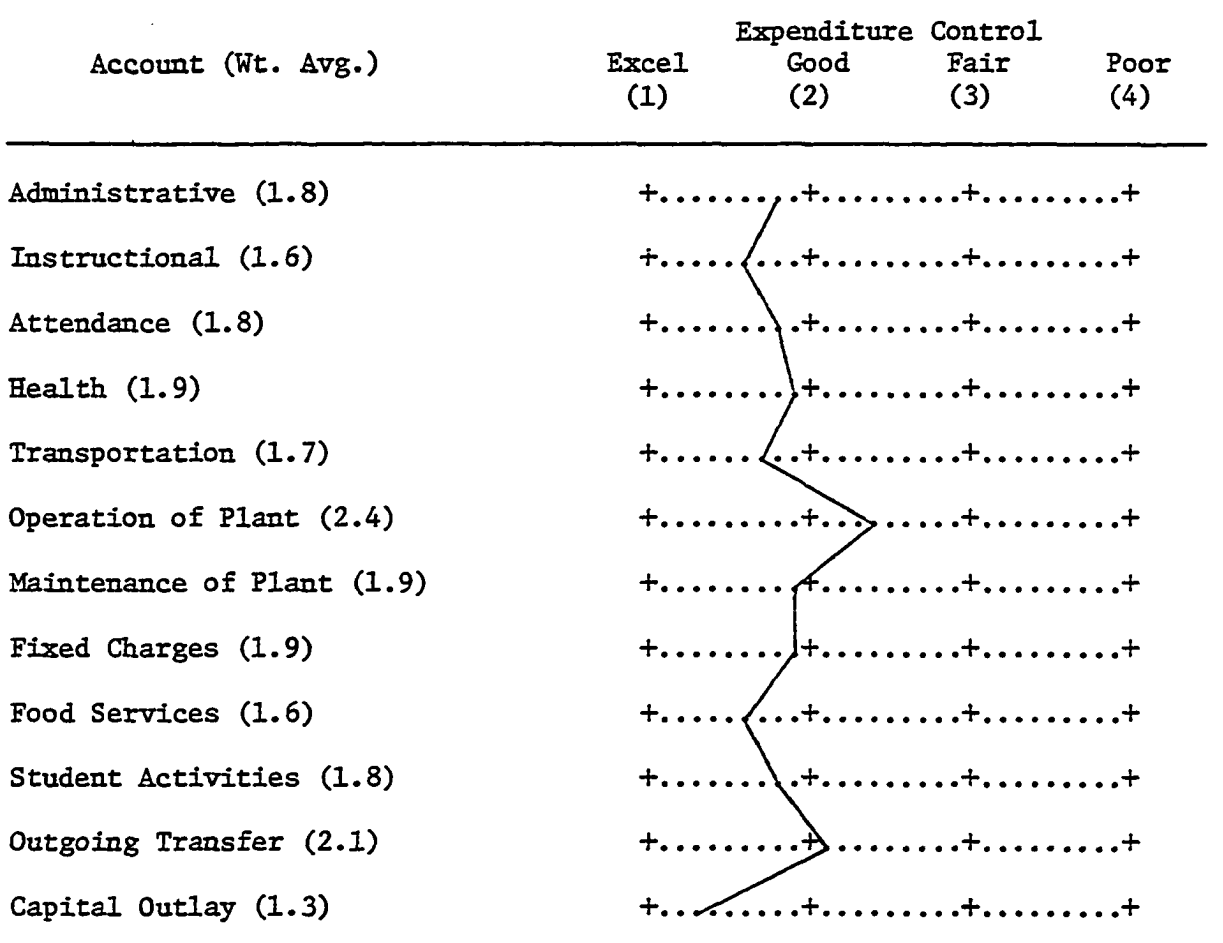
range for all of the service accounts indicated that each of the cost pools shared in fixed, variable, and semi-variable expenses for allocation. Operation of plant and maintenance of plant were the service accounts whose total expenditures for the year were most likely to fluctuate with some level of activity within the school system. The service accounts of health and fixed charges indicated just the reverse. These were service costs

which generally remain unchanged in total expenditures for a given time period despite wide fluctuations in activity within the school system.

Each respondent was asked to rate the degree of control they had over the expenditure of funds from each sub-account. The ratings were summarized for the general fund service accounts and plotted in Figure 4.

FIGURE 4

A PLOTTING OF EXPENDITURE CONTROL
FOR GENERAL FUND SERVICE ACCOUNTS



Capital outlay was the only account which could be identified as having an excellent to good control rating. Two accounts, operation of plant and outgoing transfer, were expressed as good to fair in their degree of control

rating. The remaining general fund account summaries recognized a good to excellent control rating by the school district administrators.

A summary of the base(s) of allocation for each service account was determined and presented in Table 33. Twenty one allocation bases

TABLE 33

SUMMARY ALLOCATION BASES
FOR GENERAL FUND SERVICE ACCOUNTS

Account	Prioritized Base(s) of Allocation
Administrative	Use/Need, Per Pupil; Arbitrary
Instructional	Program; Per Pupil or Prof. Employee
Attendance	Use/Need
Health	Use/Need; Program
Transportation	Use/Need
Operation of Plant	Facility
Maintenance of Plant	Use/Need
Fixed Charges	Employee; Facility
Food Services	Use/Need
Student Activities	Program; Use/Need
Outgoing Transfer	Use/Need; Pupil or Arbitrary
Capital Outlay	Use/Need

were identified for the twelve general fund accounts listed. The use/need concept of distribution was recognized in forty-three percent of the total selections and in sixty-seven percent of the cases identified as first priority rankings. There were only three service accounts which did not contain use/need as a recommended means of allocation. They were: (1) instructional, (2) operation of plant, and (3) fixed charges. Their allocation

base(s) reflected a relationship based on who or what was being served in a non-discriminating manner.

Skeleton Model Design

The survey findings discussed for Part I and Part II of the interview questionnaire were brought together to form the skeletal design of the reciprocal allocation model. Part II supplied the general fund service accounts; related and applicable sub-accounts; and, the allocation bases for the model. Part I supplied the factors considered important to school district administrators for adjusting the weight of selected resources during a decision-making process such as the allocation of general fund expenses.

Each of the thirteen service accounts were used in the skeleton model design. The sub-accounts were presented with their sub-account number and the recommended allocation base(s) which were determined through an analysis of findings in Part II. For a single allocation base to qualify as the recommended means of expense distribution, it was to have been the response of over fifty percent of the participating school district administrators. Multiple allocation bases were recommended when a single allocation base could not be chosen. When several recommended allocation bases were tied for the second position, an or condition was placed in the skeleton model which provided an alternate choice for use by school district administrators. The sub-accounts which possessed an insufficient amount of data for interpretation were not given a recommended allocation base. Expense distribution through an allocation base was left to the discretion of the user district in those cases.

The factors considered important by the school district administrators for making resource fiscal decisions were used in combination with

related allocation bases for weighting purposes. The factors were matched using the results from Part I of the interview questionnaire. Recommended allocation bases which were not matched with a set of weighting factors were given numbers computed by the user school district which reflected a predetermined or actual measurement for assigning distribution.

The outline in Figure 5 provides a complete list of available sub-accounts, allocation bases, and resource weight factors for each service account under investigation. The school district administrator was allowed discretionary use of the weight factors when tailoring the model to fit the district. The resultant skeleton model was the initial framework design taken to the sample school district to begin the data collection process before testing.

FIGURE 5

SKELETON MODEL DESIGN:
ALLOCATION OF GENERAL FUND EXPENDITURES

Administrative Services

0110 Salaries for Administration:

50% Professional Employee (Program, Source of Funds; Total Number),
and
50% Per Pupil (Program, Enrollment; Grade Level)

0120 Contracted Services:

50% Use/Need (Predetermined or Actual),
and
50% Per Pupil (Program, Enrollment; Grade Level)
or
50% Arbitrary (Discretionary)

0130 Other Expenses for Administration:

50% Use/Need (Predetermined or Actual),
and
50% Arbitrary (Discretionary)

FIGURE 5 (Continued)

Instructional Services

0210 Salaries for Instruction:

100% Professional Employee (Program, Source of Funds; Total Number)

0220 Textbooks:

50% Per Pupil (Program, Enrollment; Grade Level),
and
50% Program (Subject, Grade Level; Total Number)

0230 School Libraries and Audio-Visual Materials:

50% Per Pupil (Program, Enrollment; Grade Level),
and
50% Program (Subject, Grade Level; Total Number)

0240 Teaching Supplies:

50% Professional Employee (Program, Source of Funds; Total Number),
and
50% Per Pupil (Program, Enrollment; Grade Level),
or
50% Program (Subject, Grade Level; Total Number)

0250 Other Expenses for Instruction:

50% Use/Need (Predetermined or Actual),
and
50% Per Pupil (Program, Enrollment; Grade Level)

Attendance Services

0310 Salaries for Attendance Services:

100% Use/Need (Predetermined or Actual)

0320 Other Expenses for Attendance Services:

100% Use/Need (Predetermined or Actual)

Health Services

0410 Salaries for Health Services:

50% Use/Need (Predetermined or Actual),
and
50% Program (Subject, Grade Level; Total Number)

FIGURE 5 (Continued)

Health Services (cont.)

0420 Other Expenses for Health Services:

50% Use/Need (Predetermined or Actual),
and
50% Program (Subject, Grade Level; Total Number)

Pupil Transportation

0510 Salaries for Pupil Transportation:

100% Use/Need (Predetermined or Actual)

0520 Contracted Services and Public Carriers:

Allocation base to be determined by user district

0530 Replacement for Vehicles:

100% Use/Need (Predetermined or Actual)

0540 Transportation Insurance:

100% Use/Need (Predetermined or Actual)

0550 Expenditures in Lieu of Transportation:

100% Use/Need (Predetermined or Actual)

0560 Other Expenses for Operation and Maintenance:

100% Use/Need (Predetermined or Actual)

Operation of Plant

0610 Salaries for Operation of Plant:

100% Facility (Use, Condition, Size)

0620 Contracted Services for Operation of Plant:

100% Use/Need (Predetermined or Actual)

0630 Heat for Buildings:

100% Facility (Use, Condition, Size)

FIGURE 5 (Continued)

Operation of Plant (cont.)

0640 Utilities, Except Heat for Buildings:

100% Facility (Use, Condition, Size)

0650 Supplies, Except Utilities:

100% Facility (Use, Condition, Size)

0660 Other Expenses for Operation of Plant:

100% Facility (Use, Condition, Size)

Maintenance of Plant

0710 Salaries for Maintenance of Plant:

50% Use/Need (Predetermined or Actual),
and
50% Facility (Use, Condition, Size)

0720 Contracted Services for Maintenance:

100% Use/Need (Predetermined or Actual)

0730 Replacement of Equipment:

100% Use/Need (Predetermined or Actual)

0740 Other Expenses for Maintenance:

50% Use/Need (Predetermined or Actual),
and
50% Facility (Use, Condition, Size)

Fixed Charges

0810 School District Contributions:

100% Per Employee (Predetermined or Actual)

0820 Insurance:

100% Facility (Use, Condition, Size)

0830 Rental of Lands and Buildings:

Allocation base to be determined by user district

FIGURE 5 (Continued)

Fixed Charges (cont.)

0850 Other Fixed Charges:

100% Use/Need (Predetermined or Actual)

Food Services

0910 Salaries for Food Services:

100% Use/Need (Predetermined or Actual)

0920 Other Expenses for Food Services:

Allocation base to be determined by user district

Student Body Activities

1010 Salaries for Student Body Activities:

50% Program (Subject, Grade Level; Total Number)
and
50% Use/Need (Predetermined or Actual)

1020 Other Expenses for Student Body Activities:

50% Program (Subject, Grade Level; Total Number)
and
50% Use/Need (Predetermined or Actual)

Community Services

Sub-accounts and allocation bases to be determined by user district

Outgoing Transfer Accounts

1191.1-
1191.2 Tuition/Transfer Fee to Other Districts:

100% Use/Need (Predetermined or Actual)

1191.11-
1191.21 Tuition/Transfer Fee to Vo-Tech:

Allocation base to be determined by user district

FIGURE 5 (Continued)

Outgoing Transfer Accounts (cont.)

1191.3-
1191.4 All Other Transfer Expenses:

Allocation base to be determined by user district

1198 Property Revaluation:

50% Arbitrary (Discretionary)
and
50% Per Pupil (Program, Enrollment; Grade Level)

Capital Outlay

1210 Sites:

100% Use/Need (Predetermined or Actual)

1220 Buildings:

100% Use/Need (Predetermined or Actual)

1230 Equipment:

100% Use/Need (Predetermined or Actual)

Summary

The purpose of this chapter was to report the findings from the interview questionnaire and combine the results into a skeleton framework for the design of a reciprocal allocation model. Part I of the questionnaire provided data relating to the role of general fund accounting within school district administration, the evaluation of current information support, and the maintenance of school district resources. Part II of the questionnaire provided data for assessing the classification, behavior pattern, control, and perceived basis of allocation of expenses for each general fund sub-account under investigation.

The skeleton model design incorporated the applicable portions from each part of the interview questionnaire. The design specified the allocation base(s) for each sub-account; the percent amount each base contributed to the sub-account; and, the factors recommended by the sample respondents for weighting appropriate resources. The synthesis design provided the reliability for the allocation model. The following chapters were provided to show how school district administrators develop the model's validity by tailoring the framework to their particular school district.

CHAPTER V

TEST PROCEDURES

Introduction

The skeleton reciprocal allocation model identified in Chapter IV incorporated the survey findings from this study. Allocations based on the use/need concept of distribution were more common for the general fund accounts than any other basis. Peterson had found, through a study dealing with school district resource allocation patterns, that need acted as a consistent factor toward increased allocation of resources.[1] The combination of these two related findings provided additional evidence to support the consensus drawn from a review of the literature which suggested that each school district under investigation be considered as a unique case when determining its basis of financial allocation.

The use of a skeleton framework had allowed the test school district to complete construction of an applicable model. A tailoring process was designed to fit their particular environmental needs into a network of interrelated variables for testing. The results of the testing were determined by the internal mix of manageable resources and processes via the concept

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[1]Dennis L. Peterson, "Intra-District Resource Allocation Patterns: A Study of Resource Allocations to Denver Elementary Schools," (unpublished Ph.D. dissertation, University of Colorado, 1974), p. 305.

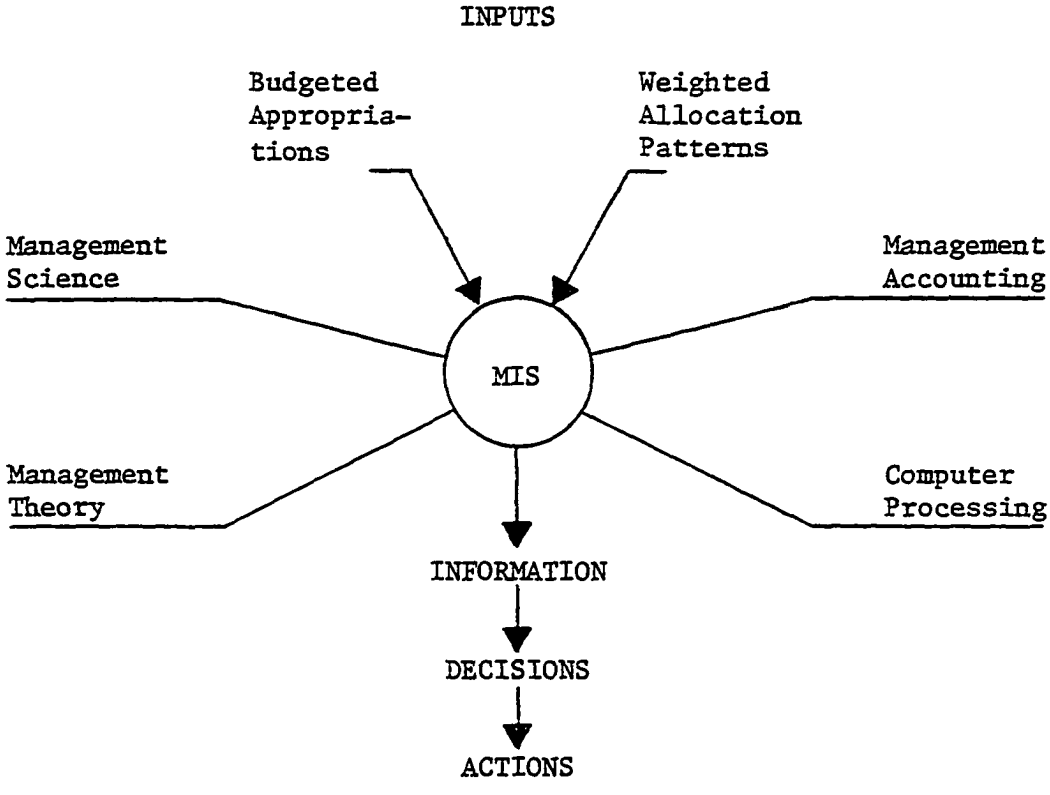
of management information systems. The purpose of this chapter was to report the procedures used in (1) completing the model design, (2) data collection, and (3) the testing process.

Model Design

The model design provided for each of the MIS related theories: (1) managerial (cost) accounting, (2) management behavioral and decision making, (3) management science, and (4) computer processing (Figure 6).

FIGURE 6

GENERAL FUND EXPENDITURES: MODEL FOR DECISION MAKING



Cost allocation was the managerial accounting concept used in the reciprocal allocation model. The indirect cost classifications assigned

to the general fund service accounts suggested that the majority of general fund expenditures were incurred for the benefit of several services and/or schools. After the pooling of indirect costs, the allocation process was utilized to distribute the pooled expenses to the appropriate costs objectives.

Each of the general fund service accounts were reported as having semi-variable costs behavior patterns. The variable condition indicated that the majority of total pooled expenses changed in proportion to some predetermined change in school district level of activity. The different relationships between the cost pools and cost objectives were recognized by the respondents, and a base of distribution was recommended for each sub-account eliminating many arbitrary allocation decisions.

The model design was developed for testing in three stages. Each stage was designed to provide the maximum in flexibility for differing organizations with unique decision making requirements.

Stage I

The purpose for Stage I of the reciprocal allocation model design was to provide working papers for the collection and subsequent weighting of sub-account allocation bases. The work form was designed to accommodate multiple allocation bases, three weighting factors per base, thirteen major general fund service accounts, and six school sites for each applicable sub-account under investigation (Appendix F). The accumulated weighted allocation percentages in Stage I completed the first part of the local school district's tailoring process.

Stage II

Stage II of the model design was a set of working papers used for collecting the weighted allocation percentages accumulated for each

sub-account in Stage I. The sub-accounts were grouped with their assigned general fund service account and given an additional weight in relationship with its relative expenditure contribution to the service accounts total. The accumulated service weighted allocation percentages in Stage II completed the second part of the adaptive process.

Stage III

The purposes for Stage III of the model design were to provide (1) the final collection form for the accumulated service weighted allocation percentages, and (2) the budgeted appropriations for each service account. The matrix algebra formula for testing the model required three matrices for processing. The Stage III form became the primary data source for preparing each of the matrices.

Abbreviations

The abbreviations used in the testing process were:

ADMIN. . . . . Administrative Services

INSTR. . . . . Instructional Services

ATTEN. . . . . Attendance Services

HEALT. . . . . Health Services

TRANS. . . . . Pupil Transportation

OPERA. . . . . Operation of Plant

MAINT. . . . . Maintenance of Plant

FIXED. . . . . Fixed Charges

FOOD . . . . . Food Services

STUDE. . . . . Student Body Activities

COMMU. . . . . Community Activities

OUTGO. . . . . Outgoing Transfers

CAPIT. . . . . Capital Outlay

KD/SE. . . . . Kindergarten and Special Education School Site

ELEM-1 . . . . Elementary School Site #1

ELEM-2 . . . . Elementary School Site #2

ELEM-3 . . . . Elementary School Site #3

SEC-1. . . . . Secondary School Site #1

SEC-2. . . . . Secondary School Site #2

Data Collection

A school district from within the sample group was chosen with the agreement of the school district superintendent to provide the data necessary for testing the applicability of the model. The most current detail general fund expenditure reports were used for the collection of financial data. The cost pools included the supplemented budget appropriations for each sub-account and service account. The budget amounts were used in the test to predict the year-end results, assuming the established actual and predetermined expenditure trends continued. The same fiscal period was used for collecting the variable resource factors needed to develop and adjust the recommended allocation bases.

The following stepwise procedures were developed for collecting and entering data within each of the three model stages for testing and to verify that an organized approach to data collection had been designed. No attempt was made to design and implement a procedures manual for model application. The primary purpose was to provide a better preliminary understanding of the results calculated in Chapter VI and the completed working papers found in Appendices F, G, and H.

Stage I

Stage I of the model design was developed around the allocation base requirements for each sub-account. The data collection procedures for Stage I were divided into five steps.

Step 1

The collection of specific allocation base data involved research into financial analyses, reports, and personal interviews. The allocation base investigations included:

Professional Employee
1. How many were assigned to each service and school site?
2. What general program weights were assigned to each service and school site?
3. What values were assigned to source of funds as a weighting factor?

Per Pupil
1. How many were enrolled at each school site?
2. What program weights were given to each school site?
3. What values were assigned to the grade level as separate weighting factors?

Program
1. What were the different programs recognized by the school district, and how many were assigned to each school site?
2. How much did the special subject areas effect the total program weight for each school site?
3. What values were assigned to the grade levels as weighting factors effecting programs?

Facilities
1. How many buildings were assigned to the services and schools, and what was the total square feet of each assignment?
2. What values were placed on the use of the facilities?
3. What weighting factor values were assigned to the general condition of the facilities?

Per Employee
1. What percent of total employee salaries expense was assigned to each service and school site?
2. Was the expense distribution supported by financial data?

Use/Need
Actual:
1. How were the expenses divided between the services and school sites?
2. Were the expense distributions supported by financial data?

Use/Need
Predetermined
1. What were the percent values given to the services and school sites for the predetermined expense distributions?

Arbitrary
1. All arbitrary distribution patterns were calculated to provide an equal percent to each service and school site.

Step 2

The simultaneous equation method used for cost allocation assumed that no service expense would be assigned back to itself after allocation. An identification was made of the service account to which each sub-account was assigned and subsequently cancelled out of the calculations. In addition, any service account that was identified as a non-use account was eliminated from all calculations at the same time.

Step 3

The base percents were calculated as the third step. The allocation percents not requiring additional adjustments were transferred to the base percent position with no change in amount. The base allocations with weighting factors were adjusted accordingly before transfer to the base percent position. The process involved the calculation of an adjusted allocation base by multiplying all weight factors together. The base percents were computed for each service and school site from their amount of contribution to the accumulated adjusted total.

Step 4

A weighted allocation percent was computed for the applicable service and school sites of each sub-account. Fifty percent of each base percent was calculated and added together to form the weighted allocation percent. The calculations were necessary for multiple allocation base accounts and not required for single base accounts.

Step 5

The weighted allocation percents were transferred to the Stage II forms for additional calcualtions.

Stage II

Stage II of the model design was developed around the accumulated allocation base requirements for each general fund service account. The data collection procedures for Stage II were divided into four steps.

Step 1

The budgeted appropriations were accumulated for each sub-account under investigation. After grouping the sub-accounts with their assigned general fund service account, percentages were calculated for each sub-account's contribution to the service total. The percent contributions were transferred to the Stage I forms.

Step 2

The sub-account's contribution percents were applied to the weighted allocation percents calculated in Stage I for its service and school sites. This process insured each sub-account's relative importance within their assigned service account.

Step 3

The revised weighted allocation percents for each service and school site were accumulated to provide new service account allocation totals.

Step 4

The service account allocation totals were transferred to the Stage III form for additional processing.

Stage III

Stage III of the model design was developed to accumulate the budgeted appropriations and weighted allocation totals for each general fund

service account. A value of one (1) was placed at the intersection of like service accounts to represent total allocation. No additional data collection or calculations were performed at Stage III.

Testing

Formula

The model design was based upon the simultaneous equation method of cost allocation. The matrix algebra formula

$$Y = C^{t}(I-B)^{-1}b$$

was used in the testing process. The three matrices represented (1) the budget appropriations for each applicable service account, (2) the reciprocal interaction between the service accounts, and (3) the weighted allocation totals from each service account to the local school sites. The amount of expenditures allocable to each school site within the district were the unknowns.

Budget Appropriations Matrix

The b value in the formula was given the matrix designation A for computer processing. The nine budget amounts were entered sequentially in the order of their appearance on the Stage III form.

Reciprocal Interaction Between the Service Accounts

The (I-B) value in the formula was given the matrix designation B for computer processing. The weighted allocation amounts were transposed from their original form positions and each fraction given a negative value to satisfy the matrix formula requirements. The inversion process took place within the computer by a program command statement. The matrix measured nine services-by-nine services square.

Weighted Allocation Totals From Each Service Account to the Local School Sites

The C^t value in the formula was given the matrix designation C for computer processing. The weighted allocation amounts were transposed from their original form positions to satisfy the matrix formula requirements. The matrix measured six school sites-by-nine service accounts.

Computer Processing

The formula used in the testing process was broken into its component parts and programmed for computer processing. The BASIC computer language was used in writing the program instructions. The statements used were:

```
DIM A(9,1),B(9,9),C(6,9),D(9,9),E(9,1),F(6,1)
MAT READ A,B,C
MAT D = INV (B)
MAT E = D*A
MAT F = C*E
MAT PRINT F
DATA
```

The data were entered following the last MAT program statement. The matrices were processed in A, B, C order with each line entered in sequence moving from left to right.

The results of the computer processing were listed as six separate allocated expenditure amounts. The amounts were matched with the district school sites following the assignment order of (1) KD/SE, (2) ELEM-1, (3) ELEM-2, (4) ELEM-3, (5) SEC-1, and (6) SEC-2.

Data Reporting

The findings obtained in the development of allocation bases for Stage I of the model design were summarized in table form for reporting. The allocation bases were presented separately with a list of applicable sub-accounts. A reference was made to the source of the data collection

and the procedures used for identifying specific weighting factor values. The tables included the site of allocation and the weighting factors, or the percent allocation.

The findings obtained in Stage II were placed in a table of budgeted appropriations by sub-account. The budgeted amounts were weighted according to each sub-account's contribution to their assigned service account total appropriation.

Stage III was the data collection form used in the development of formula matrices. The findings were expressed in the three matrix forms before data entry and computer processing took place.

The final results of the testing process were presented in a completed expenditure allocation table giving (1) the selected school site, (2) its pupil enrollment, and (3) its amount of allocable general fund expenses. A conversion calculation was performed by dividing the allocated amount for each school by that school's pupil enrollment. The results were expressed as equivalent expenditures per student. Groupings were established to provide comparison amounts for (1) each school site, (2) elementary and secondary school site classifications, and (3) the overall school district's expenditure per student.

Summary

The purpose of this chapter was to describe the procedures used for testing the applicability of a reciprocal allocation model for within district expenditure decision making. The model design and subsequent testing process incorporated the cost allocation concept of managerial accounting, the school district tailoring concept of management theory, the matrix algebra formula from management science, and the speed and accuracy developed through complex computer processing.

CHAPTER VI

TEST FINDINGS

Introduction

The purpose of this chapter was to report the findings obtained from testing the designed reciprocal allocation model. The results were instrumental in determining how the management of resources and educational processes could be combined and applied in the model for use within public school districts. The school district administrators had reported strong responsibility for maintaining a balance between resources and processes within their organizations. Testing the applicability of a reciprocal allocation model for within district expenditures was beneficial in providing a way to assist in that management function.

Findings

Stage I

Stage I of model development involved school district financial investigations, report form reviews, and personal interviews. The results were grouped according to base of allocation. The weighting factors were either calculated by this researcher or provided by the school district administration. The allocation bases were presented separately with a list of applicable sub-accounts and a description of weighting factors effecting each base.

Professional Employee

Predetermined sub-accounts were designed to allocate expenditures using all or one-half of their distribution pattern based on professional employees. The sub-accounts were:

1. 0110 Salaries for Administration
2. 0210 Salaries for Instruction
3. 0240 Teaching Supplies

Data were collected on professional employees with references to the Oklahoma Annual Personnel Report revised and submitted by the participating school district to the State Department of Education dated December 6, 1978. Table 34 was prepared to summarize the findings. The

TABLE 34

ALLOCATION BASE: PROFESSIONAL EMPLOYEES

Service Or School Site	Full Time Equivalent	Salary Avg.	Program Factor		Source Of Funds
			Direct	Indirect	
ADMIN*	4	$20,240	--	1.600	1.0
KD/SE	8.25	12,180	.982	.964	1.5
ELEM-1	17	12,483	1.006	.988	1.0
ELEM-2	18.50	12,158	.980	.962	1.0
ELEM-3	18	12,067	.973	.955	1.5
SEC-1	29	12,509	1.008	.990	1.0
SEC-2	43	12,592	1.015	.996	1.0

*Duty assignment includes ADMIN, INSTR, TRANS, OPERA, and MAINT

Program factors were calculated for direct allocation using only school site data and for indirect allocation using district-wide data. The denominator used for all schools was an average salary of $12,404. The district-wide average salary of $12,632 was used as the denominator for calculating the

indirect Program factor. Source of funds was given by the district as either normal general fund (1.0) or grant assisted (1.5) salary schedules.

Per Pupil

The sub-accounts using the per pupil allocation base were:

1. 0110 Salaries for Administration
2. 0120 Contracted Services Administration
3. 0220 Textbooks
4. 0230 School Libraries and Audio-Visual Materials
5. 0240 Teaching Supplies
6. 0250 Other Expenses for Instruction
7. 1198 Property Revaluation

Table 35 presents the data given to this investigator through the interview process. A program factor of 1.5 represented a significant

TABLE 35

ALLOCATION BASE: PER PUPIL

School Site	Pupil No.	Program	Grade Level
KD/SE	149	1.5	.75
ELEM-1	306	1.0	1.00
ELEM-2	249	1.0	1.00
ELEM-3	253	1.5	1.00
SEC-1	430	1.0	1.10
SEC-2	718	1.0	1.20

effort in special education programs for the pupils assigned to each school. The grade level factors were given to indicate a predetermined expenditure value pattern established for weighting the pupils in the district.

Programs

The sub-accounts using all or a portion of their allocations based upon programs were:

1. 0220 Textbooks
2. 0230 School Libraries and Audio-Visual Materials
3. 1020 Other Expenses for Student Body Activities

The programs applicable to each school site within the district are presented in Table 36.

TABLE 36

SCHOOL PROGRAM ASSIGNMENTS

Program Type	School Site					
	KD/SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2
Routine Grade Level	1	5	5	5	3	4
Learning Disability	-	1	1	1	1	1
Library Resource	1	1	1	1	1	1
Organized Sports	-	2	2	2	6	6
Gifted and Talented	-	-	-	1	-	-
Title I	1	-	1	-	1	-
Vocational	-	-	-	-	-	4
Counseling	1	1	1	1	1	2
Handicapped	3	-	1	2	1	1
Totals	7	10	12	13	14	19

Table 37 presents the additional weighting factors for the subject area and grade level adjustments to program number. The information was

TABLE 37

ALLOCATION BASE: PROGRAMS

School Site	No. Programs	Subject Weight	Grade Level
KD/SE	7	1.3	.75
ELEM-1	10	1.0	1.00
ELEM-2	12	1.1	1.00
ELEM-3	13	1.2	1.00
SEC-1	14	1.1	1.10
SEC-2	19	1.0	1.20

provided by the local participating district. The subject weight adjustments were computed after each learning disability, Title I, and handicapped program was given an additional weight of 1.5 times their regular count and the subsequent total program increase measured.

Facilities

The sub-accounts using an allocation based upon facilities were:

1. All of the 0600 sub-accounts for Operation of Plant
2. 0710 Salaries for Maintenance of Plant
3. 0740 Other Expenses for Maintenance of Plant
4. 0820 Insurance

Data were collected on facilities with reference to the Public Schools Energy Conservation Service forms (PSECS) provided by the State Department of Education for each public school district during the 1978-1979 school year. The additional weighting factors of use and condition were value judgments made by the participating school district. Use was

given a weight for administration (.9), elementary operations (1.0), middle-secondary operations (1.1), or high school secondary operations (1.2). Condition was rated excellent (1.0), good (1.1), or fair/poor (1.2). Table 38 provides a summary of the weighting factors collected for facilities allocation base.

TABLE 38

ALLOCATION BASE: FACILITIES

Site(s) Location	Size Sq. Ft.	Use	Condition
ADMIN	3,000	.9	1.1
INSTR	1,000	.9	1.2
TRANS	2,500	.9	1.2
KD/SE	18,955	1.0	1.1
ELEM-1	30,724	1.0	1.0
ELEM-2	31,200	1.0	1.1
ELEM-3	31,309	1.0	1.1
SEC-1	89,746	1.1	1.1
SEC-2	99,968	1.2	1.0

Per Employee

The only sub-account using the per employee allocation base was 0810 School District Contributions to Employee Retirement. Salary data were collected from the Detail Financial Analysis-General Fund report prepared April 23, 1979. A use percent was calculated for each applicable service account and school site within the district. Table 39 provides a summary of the salary amounts and related percent totals.

TABLE 39

ALLOCATION BASE: PER EMPLOYEE

Site(s) Location	Salary Amount	Percent Allocation
ADMIN	$ 89,125	.0479
INSTR	38,613	.0208
KD/SE	75,676	.0407
ELEM-1	205,835	.1107
ELEM-2	201,305	.1083
ELEM-3	190,813	.1026
SEC-1	350,213	.1884
SEC-2	574,305	.3089
TRANS	48,500	.0261
OPERA	61,700	.0332
MAINT	23,000	.0124

Use/Need

Each sub-account utilizing a use/need allocation base was considered individually when assigning percent distributions for the pooled expenses.

A separate discussion of the findings for each sub-account was prepared.

0120 Contracted Services, and
0130 Other Expenses for Administration

Need was based upon the entire activity within the general fund being managed. The Detail Financial Analysis-General Fund was used to determine service accounts budgeted expenditures. The expenditure amounts were converted to percent figures for use as a basis for allocation. The results of the conversion process are presented in Table 40.

TABLE 40

ALLOCATION BASE: USE/NEED
0120 CONTRACTED SERVICES AND
0130 OTHER EXPENSES

Service	Budgeted Expenditure	Percent Allocation
INSTR	$1,905,279	.7354
TRANS	133,369	.0514
OPERA	266,800	.1035
MAINT	41,000	.0158
FIXED	159,635	.0617
STUDE	30,000	.0116
OUTGO	4,000	.0016
CAPIT	50,697	.0190

0250 Other Expenses for Instruction

The Detail Financial Analysis-General Fund was used to determine the amount of actual expenditures assigned to each service and school site. The resultant percent allocation figures were calculated and presented in

Table 41. The amounts used for calculation were a combination of actual expended and encumbered funds. The assumption was made that the trends

TABLE 41

ALLOCATION BASE: USE/NEED
0250 OTHER EXPENSES FOR INSTRUCTION

Service or School Site	Expenditure Amount	Percent Allocation
ADMIN	$8,216	.3191
KD/SE	935	.0363
ELEM-1	1,778	.0691
ELEM-2	2,645	.1027
ELEM-3	2,361	.0917
SEC-1	2,285	.0887
SEC-2	7,528	.2924

established through April 23, 1979 would continue for the remainder of the school year.

0500 Pupil Transportation Service Account

Each of the sub-accounts assigned to the pupil transportation service account were given an allocation base utilizing the use/need concept of distribution. Pupil use figures were recommended by the school district administrators in the survey portion of this study. An in-district report titled Background of Transportation was used for calculating the service and school site pupil use percents. Table 42 provides a summary of results. Bus milage readings indicated an eight percent use for student

TABLE 42

ALLOCATION BASE: USE/NEED
0500 PUPIL TRANSPORTATION SERVICE ACCOUNT

Service Or School Site	Pupil Use*	Use Percent	Weighted Allocation
STUDE	-	-	.080
KD/SE	140	.130	.120
ELEM-1	183	.170	.156
ELEM-2	148	.138	.127
ELEM-3	149	.139	.128
SEC-1	304	.283	.260
SEC-2	150	.140	.129

*Daily use figures

body activities and a ninety-two percent use for routine scheduled transportation. The school sites were weighted downward to reflect the ninety-two percent use allocation.

0730 Replacement of Equipment

The Detail Financial Analysis-General Fund was used to determine the amount of actual and encumbered expenditures assigned to each service and school site. The expenditure amounts and resultant percents were calculated and combined in Table 43 for review. The assumption was made that the trends established for expenditures in the replacement of equipment sub-account would continue for the remainder of the school year.

TABLE 43

ALLOCATION BASE: USE/NEED
0730 REPLACEMENT OF EQUIPMENT

Service Or School Site	Expenditure Amount	Percent Allocation
ADMIN	$1,210	.1179
KD/SE	117	.0114
ELEM-1	193	.0188
ELEM-2	1,580	.1539
ELEM-3	414	.0403
SEC-1	1,500	.1461
SEC-2	5,250	.5116

1230 Equipment

Actual and encumbered expenditures were taken from the Detail Financial Analysis-General Fund report to determine the allocation percents applicable to the equipment sub-account. Table 44 provides a

TABLE 44

ALLOCATION BASE: USE/NEED
1230 EQUIPMENT - CAPITAL OUTLAY

Service Or School Site	Expenditure Amount	Percent Allocation
ADMIN	$ 5,280	.0919
INSTR	36,278	.6317
SEC-2	15,878	.2764

summary of the calculations. The assumption was made that the trends established would continue for the remainder of the school year.

0710 Salaries for Maintenance of Plant
0720 Contracted Services for Maintenance of Plant
0740 Other Expenses for Maintenance of Plant
1020 Other Expenses for Student Body Activities

The use/need allocation bases were provided by the local participating school district administrators during the formal data collection period. Table 45 provides a summary of the predetermined percent allocation for the four sub-accounts.

TABLE 45

ALLOCATION BASE: USE/Need
PREDETERMINED ALLOCATION PERCENTS

Service Or School Site	Sub-Account No.s			
	0710	0720	0740	1020
ADMIN	.10	-	.05	-
KD/SE	.15	.15	.14	-
ELEM-1	.15	.15	.14	-
ELEM-2	.15	.15	.14	-
ELEM-3	.15	.15	.14	-
SEC-1	.15	.15	.14	.20
SEC-2	.15	.25	.25	.80

0620 Contracted Services for Operation of Plant

The best allocation base for determining the use of contracted services for operation of plant was determined to be by facility use. The

sub-account was assigned for allocation to the operation of plant service account. The sub-account acted as a cost pool for miscellaneous supplies.

Arbitrary

The sub-accounts using an allocation based upon an arbitrary distribution were:

1. 0130 Other Expenses for Administration
2. 1198 Property Revaluation

Equal percent allocation figures were computed and distributed to each service and school site listed within the school district's general fund accounts.

Stage I Format

Appendix F was prepared to show the data collection forms and to provide a complete accounting for each applicable sub-account. The weighted allocation percents to the service accounts and school sites were taken from the Stage I formats and transferred to Stage II of model development.

Stage II

Stage II of the reciprocal allocation model was designed to collect the weighted allocation percents for each sub-account. The sub-accounts were grouped with their assigned general fund service account. Each of the sub-account's weighted allocation percentages were again weighted to reflect that sub-account's relative expenditure contribution within the assigned group. A summary of the newly rated allocation percentages provided the service totals needed for final testing in Stage III. Table 46 provides a summary of each sub-account's relative weighted allocation percentages within each assigned service group.

TABLE 46

BUDGET APPROPRIATIONS BY SUB-ACCOUNT
RELATIVE WEIGHTED ALLOCATION PERCENTAGES

Sub-Account	Amount	Relative Percent
	Administrative Services	
0110 Salaries	$ 89,667	.762
0120 Contract	10,000	.085
0130 Other	18,000	.153
	Instructional Services	
0210 Salaries	$1,768,538	.928
0220 Textbooks	6,600	.003
0230 Libraries	32,000	.017
0240 Supplies	52,141	.027
0250 Other	46,000	.025
	Pupil Transportation Services	
0510 Salaries	$ 48,500	.364
0530 Replacement	35,000	.262
0540 Insurance	3,000	.022
0560 Other	46,869	.352
	Operation of Plant Services	
0610 Salaries	$ 61,700	.231
0620 Contract	3,000	.011
0630 Heat	32,000	.120
0640 Utilities	137,100	.514
0650 Supplies	33,000	.124
	Maintenance of Plant Services	
0710 Salaries	$ 23,000	.561
0720 Contract	3,000	.073
0730 Replacement	10,000	.244
0740 Other	5,000	.122
	Fixed Charges Services	
0810 Retirement	$ 122,035	.765
0820 Insurance	37,400	.235
0830 Rent	200	.000
	Student Body Activities Service	
1020 Other	$ 30,000	1.000
	Outgoing Transfer Service	
1198 Revaluation	$ 4,000	1.000
	Capital Outlay Services	
1230 Equipment	$ 50,697	1.000

Appendix G was prepared to show the data collection forms and to provide a complete accounting for each applicable service group. The service totals were taken from the Stage II formats and transferred to Stage III of model development.

Stage III

The summary weighted totals for each service account were transferred and recorded on the Stage III form. The allocation base assignments had been weighted by local factors in Stage I; weighted by the assigned subaccounts relative expenditure contribution in Stage II; and, accumulated in final form for testing in Stage III. To complete the data required for testing, service account budget appropriations were compiled and added to form a necessary part of the model. Appendix H was prepared to show the data collection form prior to manipulation for entry into the simultaneous equation formula.

Matrices

Stage III provided all of the necessary variables for developing the matrices used in the testing process. Matrix A represented the value b in the simultaneous equation model. The budget appropriations were arranged in the nine-by-one matrix

$$A = \begin{bmatrix} 177667 \\ 1905279 \\ 133369 \\ 266800 \\ 41000 \\ 159635 \\ 30000 \\ 4000 \\ 50697 \end{bmatrix}$$

to correspond to the applicable service accounts identified as cost pools.

Matrix B represented the value (I-B) in the simultaneous equation model. This reciprocal interaction between the service accounts provided a nine-by-nine matrix

$$B = \begin{bmatrix} 1 & -.004 & 0 & -.0084 & -.0628 & -.0386 & 0 & -.0357 & -.0919 \\ -.097 & 1 & 0 & -.003 & -.001 & -.0166 & 0 & -.0357 & -.6317 \\ -.0158 & 0 & 1 & -.0076 & -.0026 & -.0218 & 0 & -.0357 & 0 \\ -.0197 & 0 & 0 & 1 & 0 & -.0254 & 0 & -.0357 & 0 \\ -.0093 & 0 & 0 & 0 & 1 & -.0095 & 0 & -.0357 & 0 \\ -.0128 & 0 & 0 & 0 & 0 & 1 & 0 & -.0357 & 0 \\ -.0068 & 0 & -.08 & 0 & 0 & 0 & 1 & -.0357 & 0 \\ -.0056 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ -.0077 & 0 & 0 & 0 & 0 & 0 & 0 & -.0357 & 1 \end{bmatrix}$$

corresponding to the applicable service accounts. To meet the requirements for equation use, the matrix was created in a transposed position.

Matrix C represented the value C^t in the simultaneous equation model. The school site weighted allocation percents were transposed and entered in a six-by-nine matrix

$$C = \begin{bmatrix} .0655 & .0817 & .12 & .0586 & .0844 & .0449 & .04 & .0701 & 0 \\ .1017 & .1165 & .156 & .0864 & .0957 & .105 & .0585 & .0985 & 0 \\ .0945 & .1231 & .127 & .0965 & .1322 & .1055 & .0773 & .0868 & 0 \\ .1374 & .1774 & .128 & .0968 & .1044 & .1012 & .0914 & .1136 & 0 \\ .1613 & .1978 & .26 & .3053 & .2015 & .2158 & .1992 & .1328 & 0 \\ .2649 & .2995 & .129 & .3374 & .3154 & .3157 & .5336 & .2126 & .2764 \end{bmatrix}$$

as the last phase of data preparation.

Results

The results of matrix computer processing provided full allocation costs to the school sites within the district. Table 47 was prepared to summarize the results from testing the reciprocal allocation model.

TABLE 47

COMPLETED EXPENDITURE ALLOCATIONS FOR
SELECTED SCHOOL SITES WITHIN THE DISTRICT

School Site	Pupils	Allocated Amount
KD/SE	149	$219,850
ELEM-1	306	319,409
ELEM-2	249	332,005
ELEM-3	253	446,219
SEC-1	430	594,898
SEC-2	718	856,058

The equivalent expenditure per student (EEPS) for each school identified within the district was calculated by dividing the school's allocated amount by the school's pupil enrollment. Figure 7 was prepared

FIGURE 7

EQUIVALENT EXPENDITURE PER STUDENT

<table>
<tr><td>KD/SE
$1476</td><td>ELEM-1
$1044</td><td>ELEM-2
$1333</td><td>ELEM-3
$1764</td><td>SEC-1
$1383</td><td>SEC-2
$1192</td></tr>
<tr><td></td><td colspan="3">ELEMENTARY
$1358</td><td colspan="2"></td></tr>
<tr><td colspan="4">ELEMENTARY + KD/SE
$1377</td><td colspan="2">SECONDARY
$1264</td></tr>
<tr><td colspan="6">SCHOOL DISTRICT
$1315</td></tr>
</table>

to compare the results of each school site and classification of schools with each other and their sub-classification totals.

Summary

The purpose of this chapter was to report the findings from the testing process involving the reciprocal allocation model. Stage I of the model development provided allocation percents corresponding to each sub-account's base of distribution weighted to fit the school district's operational characteristics. Stage II provided additional district tailoring by weighting the allocation percentages obtained in Stage I with their sub-account's relative expenditure contribution within the service group. Stage III served as a collecting form for the three matrices which were the major components of the simultaneous equation formula for computer processing. The final results of the testing were given as an equivalent expenditure per student for each school identified within the district.

CHAPTER VII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Purpose

The purpose of this study was to test the applicability of a reciprocal allocation model for use by school district administrators that would assist them in (1) predicting the fiscal effects of decisions made for planning and control, (2) determining the spread of financial resources to schools within the district, (3) attaching a more reliable performance measure of cost to the students served, and (4) obtaining a higher level of mid-management motivation through goal congruence. The design and testing of the allocation model centered around the findings obtained from a survey conducted to determine the answers to three specific problem statements. The three specific problem statements investigated were: (1) how did school district administrators make general fund expenditure decisions, (2) what basis of allocation did they recommend for general fund accounts, and (3) how were the adaptive relationships and variables applied in the model designed for use within unique public school districts. The dual roles within the study's design were planned and organized to explain the allocation model's development and the technical applications necessary for its implementation. The purpose of this

chapter was to bring together the two parts of the investigation and present the study as a unified whole.

Procedures

The procedures for this study involved two separate data collection requirements. First, data were collected to determine the results of problem statements one and two by using the interview technique to survey the selected sample. The second data collection was designed to establish the operational relationships between general fund accounts and cost objectives for testing the applicability of the synthesis reciprocal allocation model.

Survey

The survey procedures consisted of (1) selecting a sample for the study, (2) designing the survey questionnaire, (3) directing a pilot study, (4) executing the personal interviews for data collection, and (5) analyzing the data collected. Each survey phase was summarized in brief form.

Sample

A representative random sample of twenty school district administrators was selected from the twenty Oklahoma Regional Education Service Center areas. One representative was selected from each RESC geographical area of the state. The respondents were selected from a population of school district administrators from independent public school districts of Oklahoma that possessed a minimum of two elementary schools within their jurisdiction. The primary respondent for data collection was the school district's superintendent. The secondary respondents included assistant superintendents for finance and business managers, and were selected only at the request of the school district superintendent.

Questionnaire

A survey questionnaire was designed to provide standardization and structure to the interview process. The number of different problems presented in this study and the vast amount of data which were collected necessitated the use of the survey questionnaire. The questionnaire provided the sequencing to the interview process, as well as providing specific locations and coding possibilities for the obtained answers. The design was in two parts. Part I focused attention on how school district administrators made general fund expenditure decisions, and Part II was designed to obtain the respondent's perceived variables appropriate for the allocation of general fund expenses to the benefiting schools within their district.

Part I

Part I of the survey questionnaire was broken into three sub-parts. Sub-part A was designed to determine how important a role general fund accounting played in the affairs and activities of the school district administrators. Sub-part B was to explore the degree of adequate information support provided the school district administrator when dealing with general fund decision making. Sub-part C was designed to determine what factors the school district administrators felt were important when forced to make fiscal decisions concerning selected school district resources.

Part II

Part II of the survey questionnaire was designed to determine the perceived basis of distribution for full cost allocation of general fund expenditures. The school district administrators were asked to respond to five questions for each of the forty-nine sub-accounts under investigation. The questions covered such areas as (1) the amount of use, (2) the cost

classification, (3) the cost behavior pattern expressed, (4) the recommended allocation base, and (5) the degree of control exercised for each sub-account.

Pilot

A pilot study preceded the actual structured interview to discover possible questionnaire problems and to test the interview process. Two school district administrators from the defined population who were not part of the representative random sample were used as participants in the pilot study. Each of the superintendents were briefed on the objectives of the survey questionnaire and purpose of the study before proceding with the interview schedule and timing. The recommendations given by the superintendents provided necessary clarity to the survey questionnaire and introduced the need for an interview guide. The completed interview guide contained a statement of purpose, an introduction to each part of the survey questionnaire with special emphasis of possible answers, and definition of terms for Part II.

Interview

Letters of introduction were sent to each respondent introducing both this investigator and the purpose behind the proposed meeting. The initial contact was followed up by telephone calls to arrange for the date and time to meet with the respondents person-to-person.

With the aid of interview guides and structured survey questionnaires, the personal interviews were completed with each of the school district administrators. The survey questionnaire was administered in sequence and the responses were recorded as they were given to this investigator. The post interview process consisted of editing, coding, and preparation of data card input for additional processing.

Analysis

The analysis of the data gathered from the interview process progressed along two separate paths. Part I which focused its attention upon the information needs of school district administrators for making general fund fiscal decisions, and Part II which converged toward a concensus allocation base for relating each of the expenditure accounts to the schools served within districts were the paths taken.

Weighted averages for all responses given were computed for each point under investigation. Part I was divided into three separate sub-parts with each question ranked according to its relative position of importance within the group. Data were presented in tabled form and, where appropriate, the degree of agreement between experts was calculated using Kendall's coefficient of concordance.

Part II was analyzed using tabled data collected for each major service account. The service accounts were presented with weighted averages of all responses for the (1) amount of use, (2) cost classification, (3) cost behavior pattern, and (4) degree of control expressed for each assigned sub-account. A concensus allocation base was determined and listed for each applicable sub-account.

A summary for each part of the interview questionnaire was designed in order to pull together the main points within each part and sub-part. The summaries were helpful in establishing trends useful in understanding the development of a skeleton reciprocal allocation model.

Model

The survey procedures were instrumental in providing the basic design of the reciprocal allocation model. The procedures for testing the model began with the design of detail data forms for each stage of model

development. To complement the preliminary structure, financial and allocation base value data were collected for the testing process. The final results of the testing were given as an equivalent expenditure per student (EEPS) for each school identified within the test district.

Design

The final design was developed into three stages. Stage I provided the work sheets for collecting data pertaining to each sub-account as outlined in the skeleton model. Allocation bases were established and weighted according to the local factor values. When multiple allocation bases were used for any sub-account, the two bases were weighted equally in order to supply one allocation value.

Stage II of the model design provided work sheets for collecting the completed allocation values of Stage I. The sub-account summary data were grouped by service account. Each sub-account was given an additional weight according to its relative expenditure amount within the assigned service account.

Stage III accumulated the service totals calculated in Stage II of the model development. Budget expenditures, a nine-by-nine service matrix, and six cost objectives provided the necessary ingredients for testing the reciprocal allocation model design. Stage III was the form used to accumulate and then enter the data for computer processing.

Data Collection

Data requirements involved two types of collection; financial and allocation base values. The financial data included the budgeted expenditure amounts for each of the sub-accounts. Totals were accumulated for each service account and percentages calculated for each sub-account's contribution. These percentages were used in Stage II of the model

development for weighting each sub-account's potential allocation base contribution. The accumulated totals for each service account were used in Stage III as the expenditure amounts for allocation to the cost objectives.

The allocation base data included numeric representations applicable to the assigned basis of distribution for each sub-account. Several allocation bases were given weighting factors to adjust the original values. These weighting factors were collected from the school district administrator to provide validity to the model by tailoring the framework to their particular school district. All of the allocation base data was utilized in Stage I of model development.

Testing

The testing process followed a stepwise procedural method which progressed through each of the three stages of model development. Stage III culminated the process by presenting the data in the format needed to execute the matrix formula. An EEPS was presented for each school site within the district as test results.

Findings

The findings were grouped into three parts: (1) how school district administrators made general fund decisions, (2) what basis of allocation did school district administrators recommend for general fund accounts, and (3) how were the adaptive relationships and variables applied in the designed reciprocal allocation model. A summary of each part was prepared.

Part I

The information needs for general fund decision making were explored for each of the school district administrators. The areas under investigation

were (1) the role importance of general fund accounting, (2) the provision of adequate information support for general fund expenditures, and (3) the factors considered most important when making fiscal decisions concerning selected school district resources.

Role Importance

General fund accounting was found to play an important role in (1) administrator responsibility, (2) planning, (3) control, and (4) evaluation of school district affairs. The degree of relationship between the school district administrator and general fund accounting was determined to be the strongest of the four. The findings indicated that anticipating future operation needs were more dependent upon the role of general fund accounting than were the setting of school district objectives. Evaluation was the least dependent of the activities investigated. The results of evaluation indicated that general fund accounting played a more important role in appraising the performance of school district administrators than it did for school district operations or subordinates.

Information Support

The respondents agreed that the information support in the area of general fund expenditures was adequate for providing decision making data. The scope of the information ranged from adequate support for the broadest school district overviews to a less than adequate support for monitoring specific programs. The quality of the information was ranked giving accuracy, appropriateness, and timeliness of data an adequate score while the provision for alternatives was rated as having less than adequate support. Information support for anticipating and planning for future change was available while the data to control for successful change were considered less than adequate.

Resource Decision Making Factors

Nine school district resources were investigated. The factors considered most important when making fiscal decisions concerning each resource were:

1. Equipment (usage, condition; program)
2. Facilities (usage, condition; size)
3. Instructional Materials and Supplies (program, subject; pupil grade level)
4. Other materials and supplies (service given, program; volume)
5. Personnel-Professional (program, source of funds; total number)
6. Personnel-Classified (program, total number; experience level)
7. Pupils (program, enrollment; grade level)
8. Program (subject, grade level; total number)
9. Pupil Transportation (total pupil use, total route miles; average daily haul)

Part II

The perceived bases of distribution for full cost allocation of general fund expenditures were investigated during the study. The general fund service accounts were used to summarize the findings for (1) cost classifications, (2) cost behavior patterns, (3) expressed control for expenditures, and (4) allocation bases.

Cost Classification

The general fund service accounts which were given a more indirect cost classification by the respondents were (1) administrative, (2) attendance, (3) pupil transportation, and (4) food services. The service account displaying the greatest amount of direct costs was instructional services. The summary of service accounts indicated that the general fund expenditures were incurred for the benefit of several services and/or schools; a condition suitable for cost allocation using the simultaneous equation method of distribution.

Cost Behavior Patterns

A consensus of respondents expressed semi-variable cost behavior patterns for each of the general fund service accounts. The accounts for operation of plant and maintenance of plant were the most variable, while fixed charges and food services were the most fixed in behavior.

Expressed Control for Expenditures

The responses indicated a good perceived expenditure control for each of the general fund service accounts. Capital outlay was the only account which could be identified as having an excellent to good control, and operation of plant was the major account expressing a good to fair control over expenditures.

Allocation Bases

The use/need concept of distribution was recognized in forty-three percent of the identified allocation bases and in sixty-seven percent of the number one priority rankings for general fund service accounts. There were only three service accounts which did not contain use/need as a recommended means of allocation. Each sub-account assigned to the service accounts displayed various allocation pattern combinations and were used in the construction of the reciprocal allocation model found in Chapter IV.

Part III

Determining how the identified variables were applied in a reciprocal allocation model designed for use within a public school district was the third major question area investigated. The findings were divided into the four categories of (1) data collection, (2) tailoring, (3) processing, and (4) results.

Data Collection

The model design was instrumental in directing the search for applicable data. Each allocation base was identified with its respective sub-account and assigned additional weighting factors when matched with a major allocable resource.

The sources of data were not found to be a problem. School district external financial analyses and reports were available for information as well as internal analyses, reports, and professional opinions expressed by the superintendent and financial staff during personal interviews.

Tailoring

The use of weighting factors with allocable resources and the flexibility exhibited by the use/need allocation base provided an ideal opportunity for fitting the decision making characteristics of the school district into the designed model. The tailoring was initially begun in Stage I and continued in Stage II by assigning each sub-account a relative budget contribution percent.

Processing

The service accounts displayed a reciprocal relationship for allocating expenses among themselves; indicating use and testing of the proper cost allocation method. The formula used to implement the simultaneous equation method was easy to separate for computer programming. The simplistic matrix approach proved to be a highly accurate way of allocating complex distribution patterns.

Results

The results provided by the model design and subsequent testing were six allocable expenditure amounts representing the six school sites

within the district. The six amounts were adaptive to additional calculations for providing an equivalent per student at each school.

Conclusions

Based on the findings obtained in the study, this investigator made the following conclusions:

1. School district administrators in Oklahoma public education were generally program oriented when making expenditure decisions for resources used directly for instruction, and generally use oriented when making them for indirect resources for instruction.

2. General fund service account expenditures were more likely to be allocated throughout the school district based on the use/need concept of distribution than any other allocation base. However, when the service expense could be related to the direct educational process, the base of allocation becomes one of who or what is being served at the cost objective.

3. The reciprocal allocation model design using the simultaneous equation method of cost allocation and matrix algebra can be made applicable to Oklahoma school districts. The following factors supported this conclusion:

    a. The expenditures of the general fund service accounts were classified as indirect; incurred for the benefit of several services and/or schools.

    b. The behavior patterns expressed for the general fund service account expenditures were semi-variable. Fluctuations in levels of activity within the school district produced a cause-and-effect relationship between the cost pools and cost objectives; eliminating many arbitrary allocation patterns.

    c. The school district administrators expressed good control of decision making for general fund expenditures.

    d. The allocation bases were determined from a consensus of school district administrators; giving the model design reliability.

    e. Model validity was aided through the design and development of a tailoring process which adapts the model to the decision making characteristics of the using school district.

Recommendations

This investigator has the following recommendations for further research and/or development:

1. A state-wide study testing the applicability of a reciprocal allocation model for intra-school expenditures.

2. A longitudinal study assessing the effectiveness of a within-district reciprocal allocation model for assisting the school district administrator in (1) predicting the fiscal effects of decisions made for planning and control, (2) determining the spread of benefits to schools within the district, (3) attaching a more reliable performance measure of costs to the students served, and (4) obtaining a higher level of mid-management motivation through goal congruence.

3. A state-wide comparative study investigating the amount of significant difference between the results obtained using the (1) direct, (2) step, and (3) simultaneous equation methods of cost allocation for within-district expenditures.

4. A replication study using a different region of the United States in order to enlarge the scope of findings and the model's generalization qualities.

5. A nation-wide study to determine the best way to collect, weight, and implement the model's designed allocation base factors.

6. The establishment of a procedures manual to simplify and standardize the model's development through the adaptive stages of operation.

7. The preparation of a workshop curriculum plan to be used by colleges and universities that sponsor programs in public school administration. The plan should include the material necessary for the complete instruction of model implementation at the local school district level.

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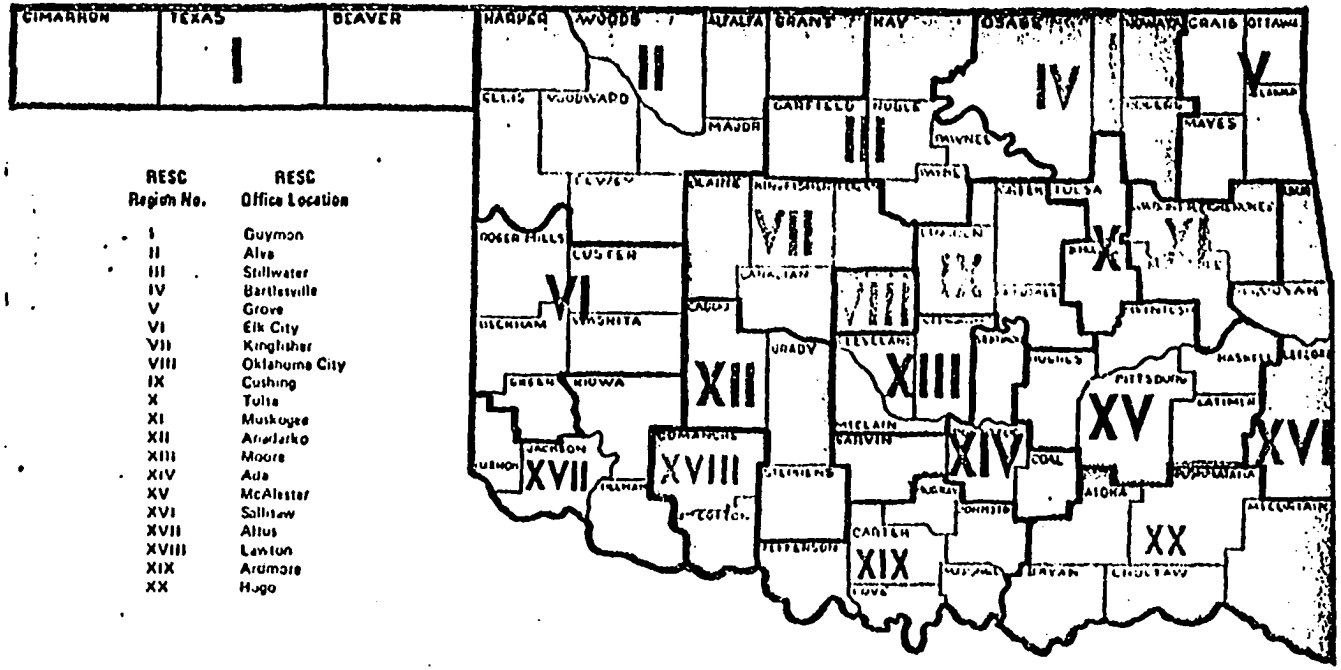
APPENDICES

APPENDIX A

Oklahoma Regional Education Service Centers 1978-79



RESC Region No.	RESC Office Location
I	Guymon
II	Alva
III	Stillwater
IV	Bartlesville
V	Grove
VI	Elk City
VII	Kingfisher
VIII	Oklahoma City
IX	Cushing
X	Tulsa
XI	Muskogee
XII	Anadarko
XIII	Moore
XIV	Ada
XV	McAlester
XVI	Sallisaw
XVII	Altus
XVIII	Lawton
XIX	Ardmore
XX	Hugo

APPENDIX B

GENERAL FUND ALLOCATION STUDY

SURVEY QUESTIONNAIRE

PART I

CURRENT INFORMATION NEEDS FOR GENERAL FUND DECISION MAKING

A. General Fund Accounting Plays an Important Role in:

	strongly agree (5)	agree (4)	undecided (3)	disagree (2)	strongly disagree (1)	
1. Your Area of Responsibility	18/.90	2/.10	-	-	-	1.4.9
2. Setting Your Objectives	6/.30	7/.35	2/.10	5/.25	-	2.3.7
3. Anticipating Future Operation Needs	17/.85	3/.15	-	-	-	3.4.85
4. Planning to Meet Operation Needs	16/.80	4/.20	-	-	-	4.4.8
5. Controlling For Operational Success	11/.55	7/.35	1/.05	-	1/.05	5.4.35
6. Evaluating Operational Success	5/.25	10/.50	1/.05	4/.20	-	6.3.8
7. How You Evaluate Subordinates	2/.10	10/.50	3/.15	4/.20	1/.05	7.3.4
8. How You Are Evaluated	8/.40	10/.50	-	2/.10	-	8.4.2

B. Your Current Information Support In The Area Of General Fund Expenditures Is Adequate For Providing:

	strongly agree (5)	agree (4)	undecided (3)	disagree (2)	strongly disagree (1)	
1. A General School District Overview	12/.60	7/.35	-	-	1/.05	9.4.45
2. Data For Measuring Specific Service Performance	7/.35	10/.50	-	3/.15	-	10.4.05
3. General Program Overviews	4/.20	11/.55	-	5/.25	-	11.3.7
4. Data To Identify Specific Program Performance	1/.05	9/.45	1/.05	8/.40	1/.05	12.3.05
5. Appropriate Decision Making Data	3/.15	15/.75	1/.05	1/.05	-	13.4.0

		(5)	(4)	(3)	(2)	(1)	
6.	Timely Decision Making Data	10/.50	4/.20	-	6/.30	-	14. 3.9
7.	Accurate Decision Making Data	9/.45	8/.40	1/.05	2/.10	-	15. 4.2
8.	Alternatives For Decision Making	2/.10	10/.50	-	5/.25	3/.15	16. 3.15
9.	Data For Anticipating Future Change	4/.20	11/.55	3/.15	2/.10	-	17. 3.85
10.	Data To Meet The Planning Needs For Future Change	4/.20	12/.60	1/.05	3/.15	-	18. 3.85
11.	Data To Control For Successful Change	3/.15	11/.55	1/.05	3/.15	2/.10	19. 3.5

C. General Fund Expenditures Are Necessary To Maintain The Following School District Resources. Rank The Top Three Factors Which You Feel Are Most Important When Making Fiscal Decisions Concerning Each Resource Listed.

(1 = Very High in Importance; 2 = High in Importance; 3 = Important; 4 = Not Selected As Important)

1.	EQUIPMENT					
	Age:	1	2	3(2)	4(18)	20. 3.9
	Condition:	1(3)	2(12)	3(4)	4(1)	21. 2.15
	Program:	1(6)	2(4)	3(8)	4(2)	22. 2.3
	Type/Number:	1	2	3(5)	4(15)	23. 3.75
	Usage:	1(11)	2(4)	3(1)	4(4)	24. 1.9
	Other _____	1	2	3	4(20)	25. 4.0
2.	FACILITIES					
	Age:	1	2(1)	3(7)	4(12)	26. 3.55
	Condition:	1(5)	2(9)	3(6)	4	27. 2.05
	Size:	1(1)	2(6)	3(7)	4(6)	28. 2.9
	Use:	1(14)	2(4)	3	4(2)	29. 1.5
	Other _____	1	2	3	4(20)	30. 4.0
3.	INSTRUCTIONAL MATERIALS & SUPPLIES					
	Stock Type:	1(1)	2	3(1)	4(18)	31. 3.8
	Program Type:	1(13)	2(4)	3	4(3)	32. 1.65
	Pupil Grade Level:	1(2)	2(3)	3(5)	4(10)	33. 3.15
	Subject:	1(3)	2(8)	3(6)	4(3)	34. 2.45
	Source of Funds:	1	2(4)	3(7)	4(9)	35. 3.25
	Other _____	1	2	3	4(20)	36. 4.0

4. OTHER MATERIALS & SUPPLIES					
Stock Type:	1(2)	2 (3)	3(4)	4(11)	37. 3.2
Program Type:	1(4)	2 (6)	3(5)	4(5)	38. 2.55
Volume:	1(2)	2 (7)	3(6)	4(5)	39. 2.7
Service Given:	1(11)	2 (3)	3(4)	4(2)	40. 1.85
Other _____	1	2	3	4(20)	41. 4.0
5. PERSONNEL-PROFESSIONAL (Admin., Staff; Teacher)					
Total Number:	1(3)	2 (5)	3(3)	4(9)	42. 2.9
Source of Funds:	1(2)	2 (8)	3(4)	4(6)	43. 2.7
Program Type:	1(11)	2 (3)	3(4)	4(2)	44. 1.85
Years Service:	1(1)	2 (3)	3(3)	4(13)	45. 3.4
Degree Level:	1(2)	2	3(5)	4(13)	46. 3.45
Other _____	1	2	3	4(20)	47. 4.0
6. PERSONNEL-CLASSIFIED (Clerical, Custodial; Maintenance)					
Total Number:	1(6)	2 (3)	3	4(11)	48. 2.8
Source of Funds:	1(2)	2 (3)	3(7)	4(8)	49. 3.05
Program Type:	1(9)	2 (5)	3(4)	4(2)	50. 1.95
Years Service:	1	2 (3)	3(2)	4(15)	51. 3.45
Experience Level:	1(2)	2 (5)	3(6)	4(7)	52. 2.9
Other _____	1	2	3	4(20)	53. 4.0
7. PUPILS					
Enrollment:	1(6)	2 (5)	3(4)	4(5)	54. 2.4
A D A :	1(2)	2 (2)	3(3)	4(13)	55. 3.35
Grade Level:	1(2)	2 (5)	3(4)	4(9)	56. 3.0
Source of Funds:	1(1)	2 (4)	3(7)	4(8)	57. 3.1
Program Track:	1(9)	2 (4)	3(2)	4(5)	58. 2.15
Other _____	1	2	3	4(20)	59. 4.0
8. PROGRAMS					
Total Number:	1(3)	2 (4)	3(8)	4(5)	60. 2.75
Source of Funds:	1(3)	2 (3)	3(7)	4(7)	61. 2.9
Grade Level:	1(2)	2 (9)	3(3)	4(6)	62. 2.65
Subject Area:	1(12)	2 (4)	3(2)	4(2)	63. 1.7
Other _____	1	2	3	4(20)	64. 4.0
9. TRANSPORTATION (Pupil)					
Total Route Miles:	1(5)	2 (8)	3(7)	4	65. 2.1
Average Daily Haul:	1(3)	2 (7)	3(10)	4	66. 2.35
Total Pupil Use:	1(12)	2 (5)	3(3)	4	67. 1.55
Other _____	1	2	3	4(20)	68. 4.0

KENDALL'S COEFFICIENT OF CONCORDANCE (W)
APPLICABLE SCHOOL DISTRICT RESOURCE CALCULATIONS
PART I - SUB-PART C

EXHIBIT B - 1
FACILITIES

Factors	Sum of Ranks	D	D^2
Age	71	21	441
Condition	41	9	81
Size	58	8	64
Use	30	20	400
			=986

$W = \frac{12(986)}{400(4)(15)}$ or $\frac{11,832}{24,000}$ or .493

EXHIBIT B - 2
OTHER MATERIALS AND SUPPLIES

Factors	Sum of Ranks	D	D^2
Stock Type	64	12.5	156.25
Program Type	51	.5	.25
Volume	54	2.5	6.25
Service	37	14.5	210.25
			=373

$W = \frac{12(373)}{400(4)(15)}$ or $\frac{4,476}{24,000}$ or .1865

EXHIBIT B - 3
PROGRAMS

Factors	Sum of Ranks	D	D^2
Total Number	55	5	25
Source of Funds	58	8	64
Grade Level	53	3	9
Subject	34	16	256
			=354

$W = \frac{12(354)}{400(4)(15)}$ or $\frac{4,248}{24,000}$ or .177

EXHIBIT B - 4
TRANSPORTATION

Factors	Sum of Ranks	D	D^2
Total Route Miles	42	2	4
Average Daily Haul	47	7	49
Total Pupil Use	31	9	81
			=134

$W = \frac{12(134)}{400(3)(8)}$ or $\frac{1,608}{9,600}$ or .1675

PART II

PERCEIVED BASIS OF DISTRIBUTION FOR FULL COST ALLOCATION OF GENERAL FUND EXPENDITURES

The Allocation Base Which Best Describes The Relationship of Cost Pool (Accumulated Expenses) To Cost Objectives (Local Schools and Other Services) For Each General Fund Sub-Account Is:

ADMINISTRATIVE SERVICES 0100 SERIES

0110 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [ ]	Variable [3]	1= 1 4= 5 8= 1
No [ ]	Both [1]	Mixed [1]	3= 7 5= 3 9= 3
	Indirect [19]	Fixed [16]	Control:
			Excel [15] Good [5] Fair [ ] Poor [ ]

1. 1
2. 2.95
3. 2.65
4. 3&4
5. 1.25

0120 Contracted Services

Use:	Class:	Behavior:	Allocation Base:
Yes [18]	Direct [ ]	Variable [6]	4= 4 8= 8
No [2]	Both [1]	Mixed [7]	5= 2 9= 4
	Indirect [17]	Fixed [5]	Control:
			Excel [3] Good [12] Fair [2] Poor [1]

6. 1.1
7. 2.9
8. 1.94
9. 8&9-4
10. 2.06

0130 Other Expenses for Administration

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [ ]	Variable [12]	3= 1 5= 4 9= 5
No [ ]	Both [3]	Mixed [6]	4= 4 8= 6
	Indirect [17]	Fixed [2]	Control:
			Excel [5] Good [11] Fair [4] Poor [ ]

11. 1
12. 2.85
13. 1.5
14. 8&9
15. 1.95

INSTRUCTIONAL SERVICES 0200 SERIES

0210 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [17]	Variable [3]	1= 3
No [ ]	Both [2]	Mixed [ ]	3= 17
	Indirect [1]	Fixed [17]	Control:
			Excel [15] Good [5] Fair [ ] Poor [ ]

16. 1
17. 1.2
18. 2.7
19. 3
20. 1.25

0220 Textbooks

Use:	Class:	Behavior:	Allocation Base:
Yes [19]	Direct [13]	Variable [9]	4= 9 8=1
	Both [3]	Mixed [3]	5= 9
No [1]	Indirect [3]	Fixed [7]	Control:
			Excel [9] Good [8] Fair [2] Poor [ ]

21. 1.05
22. 1.47
23. 1.89
24. 4&5
25. 1.63

0230 School Libraries & Audio-Visual Materials

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [10]	Variable [8]	4= 7 8=3
	Both [4]	Mixed [7]	5= 10
No [ ]	Indirect [6]	Fixed [5]	Control:
			Excel [6] Good [13] Fair [1] Poor [ ]

26. 1
27. 1.8
28. 1.85
29. 5&4
30. 1.75

0240 Teaching Supplies

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [10]	Variable [10]	3= 7 5= 5 9= 1
	Both [3]	Mixed [7]	4= 5 8= 2
No [ ]	Indirect [7]	Fixed [3]	Control:
			Excel [6] Good [13] Fair [1] Poor [ ]

31. 1
32. 1.85
33. 1.65
34. 3&4-5
35. 1.75

0250 Other Expenses for Instruction

Use:	Class:	Behavior:	Allocation Base:
Yes [19]	Direct [9]	Variable [13]	3= 1 5= 5
	Both [3]	Mixed [4]	4= 6 8= 7
No [1]	Indirect [7]	Fixed [2]	Control:
			Excel [5] Good [12] Fair [2] Poor [ ]

36. 1.05
37. 1.89
38. 1.42
39. 8&4
40. 1.84

ATTENDANCE SERVICES 0300 SERIES

0310 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [6]	Direct [1]	Variable [1]	4= 1 8= 4
	Both [1]	Mixed [1]	6= 1
No [14]	Indirect [4]	Fixed [4]	Control:
			Excel [2] Good [3] Fair [1] Poor [ ]

41. 1.7
42. 2.5
43. 2.5
44. 8
45. 1.83

0320 Other Expenses for Attendance Services

Use:	Class:	Behavior:	Allocation Base:
Yes [4]	Direct [ ]	Variable [3]	4= 1
	Both [ ]	Mixed [1]	8= 3
No [16]	Indirect [4]	Fixed [ ]	Control:
			Excel [1] Good [3] Fair [ ] Poor [ ]

HEALTH SERVICES 0400 SERIES

0410 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [9]	Direct [4]	Variable [ ]	4= 2 8= 4
	Both [ ]	Mixed [ ]	5= 3
No [11]	Indirect [5]	Fixed [9]	Control:
			Excel [1] Good [8] Fair [ ] Poor [ ]

0420 Other Expenses for Health Services

Use:	Class:	Behavior:	Allocation Base:
Yes [8]	Direct [2]	Variable [5]	4= 1 8= 4
	Both [ ]	Mixed [1]	5= 3
No [12]	Indirect [6]	Fixed [2]	Control:
			Excel [1] Good [6] Fair [1] Poor [ ]

PUPIL TRANSPORTATION 0500 SERIES

0510 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [19]	Direct [3]	Variable [3]	2= 1 6= 1 9= 1
	Both [ ]	Mixed [3]	5= 1 8= 15
No [1]	Indirect [16]	Fixed [14]	Control:
			Excel [11] Good [8] Fair [ ] Poor [ ]

0520 Contracted Services & Public Carriers

Use:	Class:	Behavior:	Allocation Base:
Yes [1]	Direct [ ]	Variable [1]	8= 1
	Both [ ]	Mixed [ ]	
No [19]	Indirect [1]	Fixed [ ]	Control:
			Excel [1] Good [ ] Fair [ ] Poor [ ]

46. 1.8
47. 3
48. 1.25
49. 8
50. 1.75
51. 1.55
52. 2.1
53. 3
54. 8&5
55. 1.89
56. 1.6
57. 2.5
58. 1.63
59. 8&5
60. 2
61. 1.05
62. 2.68
63. 2.63
64. 8
65. 1.42
66. 1.95
67. 3
68. 1
69. 8
70. 1

0530 Replacement for Vehicles

Use:	Class:	Behavior:	Allocation Base:
Yes [17]	Direct [1]	Variable [2]	8= 14
	Both	Mixed	9= 3
No [3]	Both [ ]	[3]	Control:
	Indirect [16]	Fixed [12]	Excel [11] Good [5] Fair [1] Poor [ ]

71. 1.15
72. 2.88
73. 2.59
74. 8
75. 1.4

0540 Transportation Insurance

Use:	Class:	Behavior:	Allocation Base:
Yes [18]	Direct [ ]	Variable [2]	8= 16
	Both	Mixed	9= 2
No [2]	Both [ ]	[ ]	Control:
	Indirect [18]	Fixed [16]	Excel [6] Good [8] Fair [3] Poor [1]

76. 1.1
77. 3
78. 2.78
79. 8
80. 1.94

0550 Expenditures in Lieu of Transportation

Use:	Class:	Behavior:	Allocation Base:
Yes [5]	Direct [1]	Variable [5]	5= 2
	Both	Mixed	8= 3
No [15]	Both [1]	[ ]	Control:
	Indirect [3]	Fixed [ ]	Excel [ ] Good [3] Fair [2] Poor [ ]

81. 1.75
82. 2.4
83. 1
84. 8
85. 2.4

0560 Other Expenses for Operation & Maintenance

Use:	Class:	Behavior:	Allocation Base:
Yes [19]	Direct [1]	Variable [15]	4= 1 8= 17
	Both	Mixed	7= 1
No [1]	Both [1]	[2]	Control:
	Indirect [17]	Fixed [2]	Excel [6] Good [7] Fair [6] Poor [ ]

86. 1.05
87. 2.84
88. 1.32
89. 8
90. 2

OPERATION OF PLANT 0600 SERIES

0610 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [15]	Variable [3]	1= 1 4= 1 7= 14
	Both	Mixed	2= 1 5=1 8= 2
No [ ]	Both [1]	[5]	Control:
	Indirect [4]	Fixed [12]	Excel [13] Good [4] Fair [3] Poor [ ]

91. 1
92. 1.45
93. 2.45
94. 7
95. 1.5

0620 Contracted Services for Operation of Plant

Use:	Class:	Behavior:	Allocation Base:
Yes [5]	Direct [1]	Variable [4]	7= 2
	Both [1]	Mixed [ ]	8= 3
No [15]	Indirect [3]	Fixed [1]	Control:
			Excel [ ] Good [2] Fair [3] Poor [ ]

96. 1.75
97. 2.4
98. 1.4
99. 8
100. 2.6

0630 Heat for Buildings

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [4]	Variable [15]	7= 16
	Both [5]	Mixed [3]	8= 4
No [ ]	Indirect [11]	Fixed [2]	Control:
			Excel [1] Good [3] Fair [10] Poor [6]

101. 1
102. 2.35
103. 1.35
104. 7
105. 3.05

0640 Utilities, Except Heat

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [4]	Variable [15]	7= 16
	Both [5]	Mixed [3]	8= 4
No [ ]	Indirect [11]	Fixed [2]	Control:
			Excel [1] Good [3] Fair [11] Poor [5]

106. 1
107. 2.35
108. 1.35
109. 7
110. 3

0650 Supplies, Except Utilities

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [4]	Variable [10]	7= 16 9= 1
	Both [1]	Mixed [7]	8= 3
No [ ]	Indirect [15]	Fixed [3]	Control:
			Excel [5] Good [10] Fair [5] Poor [ ]

111. 1
112. 2.55
113. 1.65
114. 7
115. 2

0660 Other Expenses for Operation of Plant

Use:	Class:	Behavior:	Allocation Base:
Yes [17]	Direct [5]	Variable [13]	4= 1 8= 1
	Both [2]	Mixed [2]	7= 14 9= 1
No [3]	Indirect [10]	Fixed [2]	Control:
			Excel [3] Good [8] Fair [5] Poor [1]

116. 1.15
117. 2.29
118. 1.35
119. 7
120. 2.23

MAINTENANCE OF PLANT 0700 SERIES

0710 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [18]	Direct [5]	Variable [5]	2= 2 7= 7
	Both [ ]	Mixed [1]	4= 1 8= 8
No [2]	Indirect [13]	Fixed [12]	Control:
			Excel [8] Good [10] Fair [ ] Poor [ ]

121. 1.1
122. 2.44
123. 2.39
124. 8&7
125. 1.56

0720 Contracted Services for Maintenance

Use:	Class:	Behavior:	Allocation Base:
Yes [12]	Direct [3]	Variable [8]	2= 1 8= 9
	Both [2]	Mixed [1]	7= 2
No [8]	Indirect [7]	Fixed [3]	Control:
			Excel [3] Good [6] Fair [3] Poor [ ]

126. 1.4
127. 2.3
128. 1.58
129. 8
130. 2

0730 Replacement of Equipment

Use:	Class:	Behavior:	Allocation Base:
Yes [15]	Direct [3]	Variable [3]	5= 2 8= 12
	Both [9]	Mixed [9]	7= 1
No [5]	Indirect [3]	Fixed [3]	Control:
			Excel [4] Good [9] Fair [2] Poor [ ]

131. 1.25
132. 2
133. 2
134. 8
135. 1.87

0740 Other Expenses for Maintenance

Use:	Class:	Behavior:	Allocation Base:
Yes [18]	Direct [3]	Variable [14]	4= 1 7= 6 9= 1
	Both [2]	Mixed [3]	5= 1 8= 9
No [2]	Indirect [13]	Fixed [1]	Control:
			Excel [3] Good [12] Fair [3] Poor [ ]

136. 1.1
137. 2.56
138. 1.28
139. 8&7
140. 2

FIXED CHARGES 0800 SERIES

0810 School District Contribution to Soc/Sec etc.

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [6]	Variable [1]	1= 20
	Both [10]	Mixed [5]	
No [ ]	Indirect [4]	Fixed [14]	Control:
			Excel [9] Good [6] Fair [3] Poor [2]

141. 1
142. 1.9
143. 2.65
144. 1
145. 1.9

0820 Insurance

Use:	Class:	Behavior:	Allocation Base:
Yes [20]	Direct [3]	Variable [1]	7= 16 9= 2
	Both [2]	Mixed [2]	8= 2
No [ ]	Indirect [15]	Fixed [17]	Control:
			Excel [7] Good [11] Fair [2] Poor [ ]

146. 1
147. 2.6
148. 2.8
149. 7
150. 1.75

0830 Rental of Lands and Buildings

Use:	Class:	Behavior:	Allocation Base:
Yes [2]	Direct [1]	Variable [ ]	8= 2
	Both [ ]	Mixed [ ]	
No [18]	Indirect [1]	Fixed [2]	Control:
			Excel [1] Good [1] Fair [ ] Poor [ ]

151. 1.9
152. 2
153. 3
154. 8
155. 1.5

0850 Other Fixed Charges

Use:	Class:	Behavior:	Allocation Base:
Yes [5]	Direct [ ]	Variable [4]	1= 1 9= 1
	Both [2]	Mixed [ ]	8= 3
No [15]	Indirect [3]	Fixed [1]	Control:
			Excel [1] Good [2] Fair [1] Poor [1]

156. 1.75
157. 2.6
158. 1.4
159. 8
160. 2.4

FOOD SERVICES 0900 SERIES

0910 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [5]	Direct [ ]	Variable [1]	1= 1 8= 3
	Both [ ]	Mixed [ ]	4= 1
No [15]	Indirect [5]	Fixed [4]	Control:
			Excel [3] Good [2] Fair [ ] Poor [ ]

161. 1.75
162. 3
163. 2.6
164. 8
165. 1.4

0920 Other Expenses for Food Services

Use:	Class:	Behavior:	Allocation Base:
Yes [3]	Direct [1]	Variable [2]	8= 3
	Both [ ]	Mixed [ ]	
No [17]	Indirect [2]	Fixed [1]	Control:
			Excel [1] Good [2] Fair [ ] Poor [ ]

166. 1.85
167. 2.3
168. 1.7
169. 8
170. 1.7

STUDENT BODY ACTIVITIES 1000 SERIES

1010 Salaries

Use:	Class:	Behavior:	Allocation Base:
Yes [5]	Direct [2]	Variable [2]	1= 1 8= 2
	Both [ ]	Mixed [1]	5= 2
No [15]	Indirect [3]	Fixed [2]	Control:
			Excel [2] Good [2] Fair [ ] Poor [1]

171. 1.75
172. 2.2
173. 2
174. 5&8
175. 2

1020 Other Expenses for Student Body Activities

Use:	Class:	Behavior:	Allocation Base:
Yes [6]	Direct [4]	Variable [2]	5= 3
	Both [1]	Mixed [ ]	8= 3
No [14]	Indirect [1]	Fixed [4]	Control:
			Excel [4] Good [1] Fair [1] Poor [ ]

176. 1.7
177. 1.5
178. 2.3
179. 5&8
180. 1.5

COMMUNITY SERVICES 1100 SERIES

1110 Recreation

Use:	Class:	Behavior:	Allocation Base:
Yes [1]	Direct [ ]	Variable [ ]	8= 1
	Both [1]	Mixed [1]	Control:
No [19]	Indirect [ ]	Fixed [ ]	Excel [1] Good [ ] Fair [ ] Poor [ ]

181. 1.95
182. 2
183. 2
184. 8
185. 1

1120 Civic Activities

Use:	Class:	Behavior:	Allocation Base:
Yes [2]	Direct [1]	Variable [ ]	8= 2
	Both [ ]	Mixed [1]	Control:
No [18]	Indirect [1]	Fixed [1]	Excel [1] Good [ ] Fair [1] Poor [ ]

186. 1.9
187. 2
188. 2.5
189. 8
190. 2

1130 Public Libraries

Use:	Class:	Behavior:	Allocation Base:
Yes [ ]	Direct [ ]	Variable [ ]	
	Both [ ]	Mixed [ ]	Control:
No [20]	Indirect [ ]	Fixed [ ]	Excel [ ] Good [ ] Fair [ ] Poor [ ]

191. 2
192. -
193. -
194. -
195. -

1140 Custodial & Detention Care of Children — 196. 2

Use:	Class:	Behavior:	Allocation Base:
Yes [ ]	Direct [ ]	Variable [ ]	
	Both [ ]	Mixed [ ]	Control:
No [20]	Indirect [ ]	Fixed [ ]	Excel [ ] Good [ ] Fair [ ] Poor [ ]

197. -
198. -
199. -
200. -

1150 Welfare Activities — 201. 2

Use:	Class:	Behavior:	Allocation Base:
Yes [ ]	Direct [ ]	Variable [ ]	
	Both [ ]	Mixed [ ]	Control:
No [20]	Indirect [ ]	Fixed [ ]	Excel [ ] Good [ ] Fair [ ] Poor [ ]

202. -
203. -
204. -
205. -

1160 Non-Public School Pupils — 206. 2

Use:	Class:	Behavior:	Allocation Base:
Yes [ ]	Direct [ ]	Variable [ ]	
	Both [ ]	Mixed [ ]	Control:
No [20]	Indirect [ ]	Fixed [ ]	Excel [ ] Good [ ] Fair [ ] Poor [ ]

207. -
208. -
209. -
210. -

OUTGOING TRANSFER ACCOUNTS 1190 SERIES

1191.1 & 1191.2 Tuition/Transfer Fee to Other Districts — 211. 1.65

Use:	Class:	Behavior:	Allocation Base:
Yes [7]	Direct [4]	Variable [4]	4= 1 8= 5 5= 1
	Both [1]	Mixed [ ]	Control:
No [13]	Indirect [2]	Fixed [3]	Excel [5] Good [2] Fair [ ] Poor [ ]

212. 1.7
213. 1.85
214. 8
215. 1.29

1191.11 & 1191.21 Tuition/Transfer Fee to Vo-Tech — 216. 1.9

Use:	Class:	Behavior:	Allocation Base:
Yes [2]	Direct [2]	Variable [ ]	8= 2
	Both [ ]	Mixed [ ]	Control:
No [18]	Indirect [ ]	Fixed [2]	Excel [1] Good [1] Fair [ ] Poor [ ]

217. 1
218. 3
219. 8
220. 1.5

1191.3 to 1192.4 All Other Transfer Expenses

Use:	Class:	Behavior:	Allocation Base:
Yes [1]	Direct [ ]	Variable [1]	8= 1
	Both [ ]	Mixed [ ]	Control:
No [19]	Indirect [1]	Fixed [ ]	Excel Good Fair Poor [ ] [1] [ ] [ ]

221. 1.95
222. 3
223. 1
224. 8
225. 2

1198 Property Revaluation

Use:	Class:	Behavior:	Allocation Base:
Yes [12]	Direct [1]	Variable [8]	4= 5 9= 6 8= 1
	Both [ ]	Mixed [ ]	Control:
No [8]	Indirect [11]	Fixed [4]	Excel Good Fair Poor [1] [ ] [2] [9]

226. 1.4
227. 2.83
228. 1.67
229. 9&4
230. 3.58

CAPITAL OUTLAY 1200 SERIES

1210 Sites

Use:	Class:	Behavior:	Allocation Base:
Yes [13]	Direct [7]	Variable [6]	7= 2 9= 2 8= 9
	Both [ ]	Mixed [ ]	Control:
No [7]	Indirect [6]	Fixed [7]	Excel Good Fair Poor [9] [4] [ ] [ ]

231. 1.35
232. 1.92
233. 2.07
234. 8
235. 1.3

1220 Buildings

Use:	Class:	Behavior:	Allocation Base:
Yes [14]	Direct [7]	Variable [6]	7= 3 9= 1 8= 10
	Both [1]	Mixed [2]	Control:
No [6]	Indirect [6]	Fixed [6]	Excel Good Fair Poor [10] [4] [ ] [ ]

236. 1.3
237. 1.93
238. 2
239. 8
240. 1.28

1230 Equipment

Use:	Class:	Behavior:	Allocation Base:
Yes [16]	Direct [8]	Variable [9]	5= 4 8= 11 7= 1
	Both [3]	Mixed [1]	Control:
No [4]	Indirect [5]	Fixed [6]	Excel Good Fair Poor [9] [7] [ ] [ ]

241. 1.2
242. 1.8
243. 1.8
244. 8
245. 1.44

APPENDIX C

GENERAL FUND ALLOCATION STUDY
INTERVIEW GUIDE

Statement of Purpose

The purpose of the study is to operationalize a full cost allocation model for use by school district administrators that will assist in:

1. predicting the fiscal effects of decisions made for planning and controlling.
2. determining the spread of benefits to schools within the district.
3. attaching a more reliable performance measure of costs to the students served.
4. obtaining a higher level of mid-management motivation through goal congruence.

Survey Questionnaire

Part I

Questions are designed to determine how general fund expenditure decisions are currently being made by school district administrators and to identify their current information needs for making those decisions.

Part II

School district administrators are to give their perceived basis of distribution for full cost allocation of general fund expenditures. The following format with options will be used for each sub-account title listed in this guide.

Use:	Class:	Behavior:	Allocation Base:
Yes ☐	Direct ☐	Variable ☐	
No ☐	Indirect ☐	Fixed ☐	Control:
	Both ☐	Mixed ☐	Excel ☐ Good ☐ Fair ☐ Poor ☐

Use

Do you currently use this account when reporting expenditures? Yes/No

Class (Cost)

Direct - costs which have been incurred for the exclusive benefit of a particular school.

Indirect - costs which have been incurred for the benefit of several services and/or schools.

Both - costs which may be direct or indirect.

Behavior (Cost)

Variable - changes in the level of activity create a proportionate cost change within the accounts total expenditures.

Fixed - costs within the account generally remain unchanged in total for a given time period despite wide fluctuations in activity.

Mixed - variable and fixed cost behavior may be found within the same account.

Control (Administrative)

What degree of control do you feel you have over the expenditure of funds from this account? Excellent/Good/Fair/Poor

Allocation Base (Possible Options)

A systematic means of relating service costs to other service accounts and schools.

Distribution per: (examples)

1. Employee
2. Classified Employee
3. Professional Employee
4. Pupil
5. Program
6. Grade Level
7. Facility
8. Use / Need
9. Arbitrary (equal/unequal)

List of Sub-Accounts

Administrative Services 0100 Series

- 0110 Salaries
- 0120 Contracted Services
- 0130 Other Expenses for Acministration

Instructional Services 0200 Series

- 0210 Salaries
- 0220 Textbooks
- 0230 School Libraries and Audio-Visual Mat.
- 0240 Teaching Supplies
- 0250 Other Expenses for Instruction

Attendance Services 0300 Series

- 0310 Salaries
- 0320 Other Expenses for Attendance Services

Health Services 0400 Series

- 0410 Salaries
- 0420 Other Expenses for Health Services

Pupil Transportation 0500 Series

- 0510 Salaries
- 0520 Contracted Services and Public Carriers
- 0530 Replacement of Vehicles
- 0540 Transportation Insurance
- 0550 Expenditures in Lieu of Transportation
- 0560 Other Expenses for Oper. and Maintenance

Operation of Plant 0600 Series

- 0610 Salaries
- 0620 Contracted Services for Operation
- 0630 Heat for Buildings
- 0640 Utilities, Except Heat
- 0650 Supplies, Except Utilities
- 0660 Other Expenses for Operation of Plant

Maintenance of Plant 0700 Series

- 0710 Salaries
- 0720 Contracted Services for Maintenance
- 0730 Replacement of Equipment
- 0740 Other Expenses for Maintenance

Fixed Charges 0800 Series

- 0810 School District Contributions to Social Security and Retirement
- 0820 Insurance
- 0830 Rental of Lands and Buildings
- 0850 Other Fixed Charges

Food Services 0900 Series

- 0910 Salaries for Food Services
- 0920 Other Expenses for Food Services

Student Body Activities 1000 Series

- 1010 Salaries
- 1020 Other Expenses for Student Body Activities

Community Services 1100 Series

- 1110 Recreation
- 1120 Civic Activities
- 1130 Public Libraries
- 1140 Custodial and Detention Care
- 1150 Welfare Activities
- 1160 Non-Public School Pupils

Outgoing Transfer Accounts 1190 Series

- 1191.10 and 1191.20 Tuition or Transfer fees to Other School Districts
- 1191.11 and 1191.21 Tuition or Transfer fees to Vocational Districts
- 1191.30 and 1192.40 All Other Expenses
- 1198 Property Revaluation

Capital Outlay 1200 Series

- 1210 Sites
- 1220 Buildings
- 1230 Equipment

APPENDIX D

LETTER OF INTRODUCTION

As you are well aware, we are always looking for better ways of dealing with Administrative problems, especially in the area of finances and expenditures. We think that this is an occasion where we may introduce a possible solution through research by George Morgan; one of our graduate students at the University of Oklahoma. He is developing a model to aid in predicting the effects of different expenditure decisions before a choice is made.

George was previously a Finance Director and Data Processing Coordinator with the Norman Public Schools before coming back to devote full time to his degree program. His idea for the decision model took root at that time and has since developed into a very real option for school district administration. His need now is to determine the collective information needs of selected school administrators and get their opinion on how to allocate or distribute various expenses throughout a school system. Could you give him one hour of your time? If you are unable to visit with him personally, he would like to meet and discuss these things with your finance person.

We are behind George one hundred percent and see a great potential in what he is trying to accomplish. Any help you could give him would be greatly appreciated. He has agreed to summarize and distribute his research findings to each of the school districts participating and to provide a description on how to prepare and utilize the model which develops from those findings. Individual school systems will not be identified in the study. George will be contacting you by phone to ask for an interview time. I hope you will be able to help him with the study.

Sincerely,

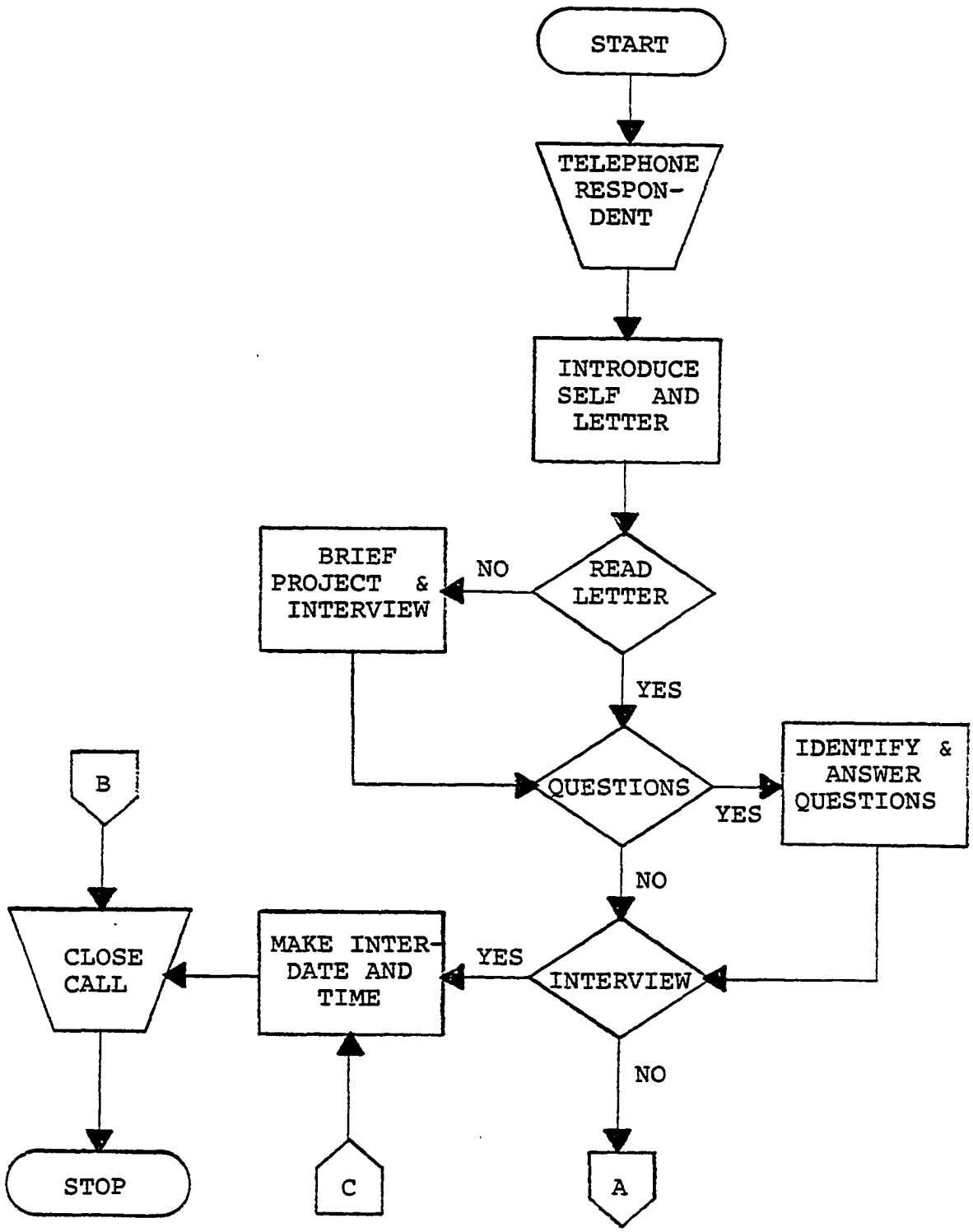
Gene Pingleton
Associate Dean

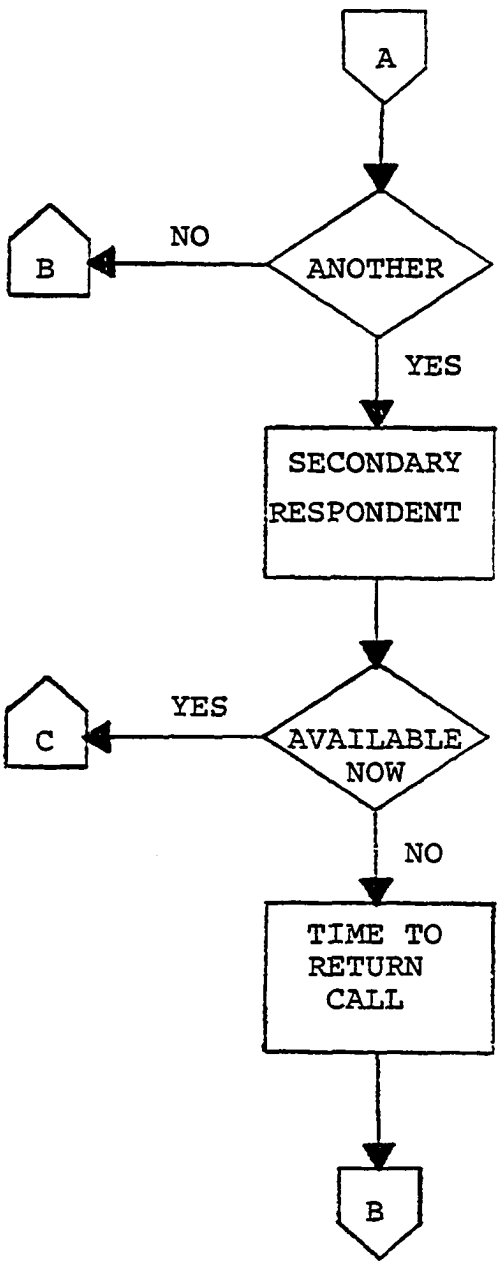
GP:ld

APPENDIX E

TELEPHONE PROCEDURES

GENERAL FUND ALLOCATION STUDY




A
ANOTHER
NO
B
YES
SECONDARY RESPONDENT
AVAILABLE NOW
YES
C
NO
TIME TO RETURN CALL
B

APPENDIX F

STAGE I

0110 Salaries for Administration

BASE-A: Pro. Employee (1) Number (2) Program (3) Source Fund

BASE-B: Per Pupil (1) Enrollment (2) Program (3) Grade

FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD
A-1		1			1	.5	.5		
A-2		1.6			1.6	1.6	1.6		
A-3		1			1	1	1		
Adj Base		1.6			1.6	.8	.8		
BASE-A %		.011			.011	.005	.005		
B-1									
B-2									
B-3									
Adj Base									
BASE-B %									
WT. %		.0055			.0055	.0025	.0025		

STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2
				8.25	17	18.5	18	29	43
				.964	.988	.962	.955	.99	.996
				1.5	1	1	1.5	1	1
				11.93	16.8	17.8	25.79	28.71	42.83
				.081	.113	.120	.173	.193	.288
				149	306	249	253	430	718
				1.5	1	1	1.5	1	1
				.75	1	1	1	1.1	1.2
				167.6	306	249	379.5	473	861.6
				.0688	.1256	.1022	.1558	.1942	.3534
				.0749	.1193	.1111	.1644	.1936	.3207

STAGE I

0120 Contracted Services for Administration

BASE-A: Use/Need (1) Account Budget %

BASE-B: Per Pupil (1) Enrollment (2) Program (3) Grade

FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD
A-1		.7354			.0514	.1035	.0158	.0617	
A-2									
A-3									
Adj Base									
BASE-A %		.7354			.0514	.1035	.0158	.0617	
B-1									
B-2									
B-3									
Adj Base									
BASE-B %									
WT. %		.3677			.0257	.0517	.0079	.0309	

STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2
.0116		.0016	.0190						
.0116		.0016	.0190						
				149	306	249	253	430	718
				1.5	1	1	1.5	1	1
				.75	1	1	1	1.1	1.2
				167.6	306	249	379.5	473	861.6
				.0688	.1256	.1022	.1558	.1942	.3534
.0058		.0008	.0095	.0344	.0628	.0511	.0779	.0971	.1767

STAGE I 0130 Other Expenses for Administration						BASE-A	Use/Need (1) Account Budget %		BASE-B	Arbitrary (1) Equal Distribution	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED		FOOD	
A-1		.7354			.0514	.1035	.0158	.0617			
A-2											
A-3											
Adj Base											
BASE-A %		.7354			.0514	.1035	.0158	.0617			
B-1		.0714			.0714	.0714	.0714	.0714			
B-2											
B-3											
Adj Base											
BASE-B %		.0714			.0714	.0714	.0714	.0714			
WT. %		.4034			.0614	.0875	.0436	.0666			
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1		SEC-2	
.0116		.0016	.0190								
.0116		.0016	.0190								
.0714		.0714	.0714	.0714	.0714	.0714	.0714	.0714		.0718	
.0714		.0714	.0714	.0714	.0714	.0714	.0714	.0714		.0718	
.0415		.0365	.0452	.0357	.0357	.0357	.0357	.0357		.0358	

STAGE I 0210 Salaries for Instruction (Direct)						BASE-A	Pro. Employee (1) Number (2) Program (3) Source Fund	BASE-B	N/A	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD	
A-1										
A-2										
A-3										
Adj Base										
BASE-A %										
B-1										
B-2										
B-3										
Adj Base										
BASE-B %										
WT. %										
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2	
				8.25	17	18.5	18	29	43	
				.982	1.006	.98	.973	1.008	1.015	
				1.5	1	1	1.5	1	1	
				12.15	17.1	18.13	26.27	29.23	43.65	
				.0829	.1167	.1237	.1793	.1995	.2979	
				.0829	.1167	.1237	.1793	.1995	.2979	

STAGE I

0220 Textbooks

0230 School Libraries and Audio-Visual Materials

BASE-A: Per Pupil (1) Enrollment (2) Program (3) Grade

BASE-B: Program (1) Number (2) Subject (3) Grade

FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD
A-1									
A-2									
A-3									
Adj Base									
BASE-A %									
B-1									
B-2									
B-3									
Adj Base									
BASE-B %									
WT. %									

STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2
				149	306	249	253	430	718
				1.5	1	1	1.5	1	1
				.75	1	1	1	1.1	1.1
				167.6	306	249	379.5	473	861.6
				.0688	.1256	.1022	.1558	.1942	.3534
				7	10	12	13	14	19
				1.3	1	1.1	1.2	1.1	1
				.75	1	1	1	1.1	1.2
				6.825	10	13.2	15.6	16.94	22.8
				.0800	.1171	.1546	.1827	.1984	.2672
				.0744	.1214	.1284	.1692	.1963	.3103

STAGE I 0240 Teaching Supplies						BASE-A Pro. Employee (1) Number (2) Program (3) Source Fund		BASE-B Per Pupil (1) Enrollment (2) Program (3) Grade	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD
A-1									
A-2									
A-3									
Adj Base									
BASE-A %									
B-1									
B-2									
B-3									
Adj Base									
BASE-B %									
WT. %									
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2
				8.25	17	18.5	18	29	43
				.982	1.006	.980	.973	1.008	1.015
				1.5	1	1	1.5	1	1
				12.15	17.1	18.13	26.27	29.23	43.65
				.0829	.1167	.1237	.1793	.1995	.2979
				149	306	249	253	430	718
				1.5	1	1	1.5	1	1
				.75	1	1	1	1.1	1.2
				167.6	306	249	379.5	473	861.6
				.0688	.1256	.1022	.1558	.1942	.3534
				.0759	.1211	.1130	.1675	.1969	.3256

STAGE I

0250 Other Expenses for Instruction

BASE-A: Use/Need (1) Actual %

BASE-B: Per Pupil (1) Enrollment (2) Program (3) Grade

FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD
A-1	.3191								
A-2									
A-3									
Adj Base									
BASE-A %	.3191								
B-1									
B-2									
B-3									
Adj Base									
BASE-B %									
WT. %	.1595								

STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2
				.0363	.0691	.1027	.0917	.0887	.2924
				.0363	.0691	.1027	.0917	.0887	.2924
				149	306	249	253	430	718
				1.5	1	1	1.5	1	1
				.75	1	1	1	1.1	1.2
				167.6	306	249	379.5	473	861.6
				.0688	.1256	.1022	.1558	.1942	.3534
				.0526	.0974	.1024	.1237	.1415	.3229

STAGE I All Pupil Transportation Sub-Accounts			0510 0530 0540 0560			BASE-A	Use/Need (1) Actual Pupil Use		BASE-B	N/A	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD		
A-1											
A-2											
A-3											
Adj Base											
BASE-A %											
B-1											
B-2											
B-3											
Adj Base											
BASE-B %											
WT. %											
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2		
.08				.12	.156	.127	.128	.26	.129		
.08				.12	.156	.127	.128	.26	.129		
.08				.12	.156	.127	.128	.26	.129		

STAGE I All Operation of Plant Sub - Accounts 0610 0630 0650 0620 0640	BASE-A	Facilities (1) Size (2) Use (3) Condition	BASE-B	N/A

FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD
A-1	3000	1000			2500				
A-2	.9	.9			.9				
A-3	1.1	1.2			1.2				
Adj Base	2970	1080			2700				
BASE-A %	.0084	.0030			.0076				
B-1									
B-2									
B-3									
Adj Base									
BASE-B %									
WT. %	.0084	.0030			.0076				

STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2
				18955	30724	31200	31309	89746	99968
				1	1	1	1	1.1	1.2
				1.1	1	1.1	1.1	1.1	1
				20850	30724	34320	34440	108593	119962
				.0586	.0864	.0965	.0968	.3053	.3374
				.0586	.0864	.0965	.0968	.3053	.3374

STAGE I 0710 Salaries for Maintenance of Plant						BASE-A	Use/Need (1) Predetermined	BASE-B	Facilities (1) Size (2) Use (3) Condition	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD	
A-1	.10									
A-2										
A-3										
Adj Base										
BASE-A %	.10									
B-1	3000	1000			2500					
B-2	.9	.9			.9					
B-3	1.1	1.2			1.2					
Adj Base	2970	1080			2700					
BASE-B %	.0084	.0030			.0076					
WT. %	.0542	.0015			.0038					
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2	
				.15	.15	.15	.15	.15	.15	
				.15	.15	.15	.15	.15	.15	
				18955	30724	31200	31309	89746	99968	
				1	1	1	1	1.1	1.2	
				1.1	1	1.1	1.1	1.1	1	
				20850	30724	34320	34440	108593	119962	
				.0586	.0864	.0965	.0968	.3053	.3374	
				.1043	.1182	.1233	.1234	.2276	.2437	

STAGE I 0720 Contracted Services for Maintenance of Plant						BASE-A	Use/Need (1) Predetermined	BASE-B	N/A	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD	
A-1										
A-2										
A-3										
Adj Base										
BASE-A %										
B-1										
B-2										
B-3										
Adj Base										
BASE-B %										
WT. %										
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2	
				.15	.15	.15	.15	.15	.25	
				.15	.15	.15	.15	.15	.25	
				.15	.15	.15	.15	.15	.25	

STAGE I 0730 Replacement of Equipment						BASE-A	Use/Need (1) Actual %	BASE-B	N/A	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD	
A-1	.1179									
A-2										
A-3										
Adj Base										
BASE-A %	.1179									
B-1										
B-2										
B-3										
Adj Base										
BASE-B %										
WT. %	.1179									
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2	
				.0114	.0188	.1539	.0403	.1461	.5116	
				.0114	.0188	.1539	.0403	.1461	.5116	
				.0114	.0188	.1539	.0403	.1461	.5116	

STAGE I 0740 Other Expenses for Maintenance of Plant						BASE-A	Use/Need (1) Predetermined	BASE-B	Facilities (1) Size (2) Use (3) condition	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD	
A-1	.05									
A-2										
A-3										
Adj Base										
BASE-A %	.05									
B-1	3000	1000			2500					
B-2	.9	.9			.9					
B-3	1.1	1.2			1.2					
Adj Base	2970	1080			2700					
BASE-B %	.0084	.0030			.0076					
WT. %	.0292	.0015			.0038					
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2	
				.14	.14	.14	.14	.14	.25	
				.14	.14	.14	.14	.14	.25	
				18955	30724	31200	31309	89746	99968	
				1	1	1	1	1.1	1.2	
				1.1	1	1.1	1.1	1.1	1	
				20850	30724	34320	34440	108593	119962	
				.0586	.0864	.0965	.0968	.3053	.3374	
				.0993	.1132	.1183	.1184	.2226	.2937	

STAGE I 0810 School District Contributions					BASE-A	Per Employee (1) Actual %		BASE-B	N/A	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT		FIXED	FOOD
A-1	.0479	.0208			.0261	.0332	.0124			
A-2										
A-3										
Adj Base										
BASE-A %	.0479	.0208			.0261	.0332	.0124			
B-1										
B-2										
B-3										
Adj Base										
BASE-B %										
WT. %	.0479	.0208			.0261	.0332	.0124			
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3		SEC-1	SEC-2
				.0407	.1107	.1083	.1026		.1884	.3089
				.0407	.1107	.1083	.1026		.1884	.3089
				.0407	.1107	.1083	.1026		.1884	.3089

STAGE I 0820 Insurance (Fixed Charges)						BASE-A	Facilities (1) Size (2) Use (3) Condition	BASE-B	N/A	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD	
A-1	3000	1000			2500					
A-2	.9	.9			.9					
A-3	1.1	1.2			1.2					
Adj Base	2970	1080			2700					
BASE-A %	.0084	.0030			.0076					
B-1										
B-2										
B-3										
Adj Base										
BASE-B %										
WT. %	.0084	.0030			.0076					
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2	
				18955	30724	31200	31309	89746	99968	
				1	1	1	1	1.1	1.2	
				1.1	1	1.1	1.1	1.1	1	
				20850	30724	34320	34440	108593	119962	
				.0586	.0864	.0965	.0968	.3053	.3374	
				.0586	.0864	.0965	.0968	.3053	.3374	

STAGE I

1020 Other Expenses for Student Body Activities

BASE-A: Program (1) Number (2) Subject (3) Grade

BASE-B: Use/Need (1) Predetermined

FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD
A-1									
A-2									
A-3									
Adj Base									
BASE-A %									
B-1									
B-2									
B-3									
Adj Base									
BASE-B %									
WT. %									

STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2
				7	10	12	13	14	19
				1.3	1	1.1	1.2	1.1	1
				.75	1	1	1	1.1	1.2
				6.825	10	13.2	15.6	16.94	22.8
				.0800	.1171	.1546	.1827	.1984	.2672
								.20	.80
								.20	.80
				.0400	.0585	.0773	.0914	.1992	.5336

STAGE I 1198 Property Revaluation						BASE-A	Arbitrary (1) Equal Distribution	BASE-B	Per Pupil (1) Enrollment (2) Program (3) Grade	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD	
A-1	.0714	.0714			.0714	.0714	.0714	.0714		
A-2										
A-3										
Adj Base										
BASE-A %	.0714	.0714			.0714	.0714	.0714	.0714		
B-1										
B-2										
B-3										
Adj Base										
BASE-B %										
WT. %	.0357	.0357			.0357	.0357	.0357	.0357		
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2	
.0714			.0714	.0714	.0714	.0714	.0714	.0714	.0718	
.0714			.0714	.0714	.0714	.0714	.0714	.0714	.0718	
				149	306	249	253	430	718	
				1.5	1	1	1.5	1	1	
				.75	1	1	1	1.1	1.2	
				167.6	306	249	379.5	473	861.6	
				.0688	.1256	.1022	.1558	.1942	.3534	
.0357			.0357	.0701	.0985	.0868	.1136	.1328	.2126	

STAGE I 1230 Equipment (Capital Outlay)						BASE-A	Use/Need (1) Actual %	BASE-B	N/A	
FACTOR	ADMIN	INSTR	ATTEN	HEALT	TRANS	OPERA	MAINT	FIXED	FOOD	
A-1	.0919	.6317								
A-2										
A-3										
Adj Base										
BASE-A %	.0919	.6317								
B-1										
B-2										
B-3										
Adj Base										
BASE-B %										
WT. %	.0919	.6317								
STUDE	COMMU	OUTGO	CAPIT	KD / SE	ELEM-1	ELEM-2	ELEM-3	SEC-1	SEC-2	
									.2764	
									.2764	
									.2764	

APPENDIX G

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

ADMINISTRATIVE SERVICES

SUB-ACCOUNT	WEIGHT	INSTR	TRANS	OPERA	MAINT	FIXED	STUDE	OUTGO	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
0110		.0055	.0055	.0025	.0025					.0749	.1193	.1111	.1644	.1936	.3207
SALARIES	.762	.0042	.0042	.0019	.0019					.0571	.0909	.0847	.1253	.1475	.2443
0120		.3677	.0257	.0517	.0079	.0309	.0058	.0008	.0095	.0344	.0628	.0511	.0779	.0971	.1767
CONTRACTED	.085	.0313	.0022	.0044	.0007	.0026	.0005	.0000	.0008	.0029	.0053	.0043	.0066	.0083	.0151
0130		.4043	.0614	.0875	.0436	.0666	.0415	.0365	.0452	.0357	.0357	.0357	.0357	.0357	.0358
OTHER EXPENSE	.153	.0615	.0094	.0134	.0067	.0102	.0063	.0056	.0069	.0055	.0055	.0055	.0055	.0055	.0055
SERVICE TOTALS:	1.00	.0970	.0158	.0197	.0093	.0128	.0068	.0056	.0077	.0655	.1017	.0945	.1374	.1613	.2649

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

INSTRUCTIONAL SERVICES

SUB-ACCOUNT	WEIGHT	ADMIN	TRANS	OPERA	MAINT	FIXED	STUDE	OUTGO	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
0210										.0829	.1167	.1237	.1793	.1995	.2979
SALARIES	.928									.0769	.1083	.1148	.1664	.1851	.2765
0220										.0744	.1214	.1284	.1692	.1963	.3103
TEXTBOOKS	.003									.0002	.0004	.0004	.0005	.0006	.0009
0230										.0744	.1214	.1284	.1692	.1963	.3103
LIB & A-V	.017									.0013	.0021	.0022	.0029	.0033	.0052
0240										.0759	.1211	.1130	.1675	.1969	.3256
SUPPLIES	.027									.0020	.0033	.0031	.0045	.0053	.0088
0250		.1595								.0526	.0974	.1024	.1237	.1415	.3229
OTHER EXPENSE	.025	.0040								.0013	.0024	.0026	.0031	.0035	.0081
SERVICE TOTALS:	1.00	.0040								.0817	.1165	.1231	.1774	.1978	.2995

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

PUPIL TRANSPORTATION*

SUB-ACCOUNT	WEIGHT	ADMIN	INSTR	OPERA	MAINT	FIXED	STUDE	OUTGO	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
0510 SALARIES	.364														
0530 REPLACEMENT	.262														
0540 INSURANCE	.022														
0560 OTHER EXPENSE	.352														
SERVICE TOTALS:	1.00						.0800			.1200	.1560	.1270	.1280	.2600	.1290

* All of the sub-accounts for pupil transportation were allocated using the same base. No additional calculations were requires in Stage II.

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

OPERATION OF PLANT*

SUB-ACCOUNT	WEIGHT	ADMIN	INSTR	TRANS	MAINT	FIXED	STUDE	OUTGO	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
0610 SALARIES	.231														
0620 CONTRACTED	.011														
0630 HEAT	.120														
0640 UTILITIES	.514														
0650 SUPPLIES	.124														
SERVICE TOTALS:	1.00	.0084	.0030	.0076						.0586	.0864	.0965	.0968	.3053	.3374

* All of the sub-accounts for operation of plant service account were allocated using the same base. No additional calculations were required in Stage II.

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

MAINTENANCE OF PLANT

SUB-ACCOUNT	WEIGHT	ADMIN	INSTR	TRANS	OPERA	FIXED	STUDE	OUTGO	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
0710 SALARIES		.0542	.0015	.0038						.1043	.1182	.1233	.1234	.2276	.2437
	.561	.0304	.0008	.0021						.0585	.0663	.0692	.0692	.1277	.1368
0720 CONTRACTED										.1500	.1500	.1500	.1500	1500	.1500
	.073									.0110	.0110	.0110	.0110	0110	.0180
0730 REPLACEMENT		.1179								.0114	.0188	.1539	.0403	.1461	.5116
	.244	.0288								.0028	.0046	.0376	.0098	.0356	.1248
0740 OTHER EXPENSE		.0292	.0015	.0038						.0993	.1132	.1183	.1184	.2226	.2937
	.122	.0036	.0002	.0005						.0121	.0138	.0144	.0144	.0272	.0358
SERVICE TOTALS:	1.00	.0628	.0010	.0026						.0844	.0957	.1322	.1044	.2015	.3154

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

FIXED CHARGES

SUB-ACCOUNTS	WEIGHT	ADMIN	INSTR	TRANS	OPERA	MAINT	STUDE	OUTGO	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
0810 DISTRICT CONT.		.0479	.0208	.0261	.0332	.0124				.0407	.1107	.1083	.1026	.1884	.3089
	.765	.0366	.0159	.0200	.0254	.0095				.0311	.0847	.0828	.0785	.1441	.2364
0820 INSURANCE		.0084	.0030	.0076						.0586	.0864	.0965	.0968	.3053	.3374
	.235	.0020	.0007	.0018						.0138	.0203	.0227	.0227	.0717	.0793
0830 RENT															
	.000														
SERVICE TOTALS:	1.00	.0386	.0166	.0218	.0254	.0095				.0449	.1050	.1055	.1012	.2158	.3157

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

STUDENT BODY ACTIVITIES

SUB-ACCOUNTS	WEIGHT	ADMIN	INSTR	TRANS	OPERA	MAINT	FIXED	OUTGO	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
1020 OTHER EXPENSE										.0400	.0585	.0773	.0914	.1992	.5336
	1.00									.0400	.0585	.0773	.0914	.1992	.5336
SERVICE TOTALS:	1.00									.0400	.0585	.0773	.0914	.1992	.5336

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

OUTGOING TRANSFER

SUB-ACCOUNTS	WEIGHT	ADMIN	INSTR	TRANS	OPERA	MAINT	FIXED	STUDE	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
1198 REVALUATION		.0357	.0357	.0357	.0357	.0357	.0357	.0357	.0357	.0701	.0985	.0868	.1136	.1328	.2126
	1.00	.0357	.0357	.0357	.0357	.0357	.0357	.0357	.0357	.0701	.0985	.0868	.1136	.1328	.2126
SERVICE TOTALS:	1.00	.0357	.0357	.0357	.0357	.0357	.0357	.0357	.0357	.0701	.0985	.0868	.1136	.1328	.2126

STAGE II

WEIGHTED RELATIVE EXPENDITURE CONTRIBUTION:

CAPITAL OUTLAY

sub-ACCOUNTS	WEIGHT	ADMIN	INSTR	TRANS	OPERA	MAINT	FIXED	STUDE	OUTGO	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
1230 EQUIPMENT		.0919	.6317												.2764
	1.00	.0919	.6317												.2764
SERVICE TOTALS:	1.00	.0919	.6317												.2764

APPENDIX H

STAGE III

SUMMARY BUDGET ALLOCATION PATTERNS

GENERAL FUND SERVICE ACCOUNTS

BUDGET AMOUNT	RECIPROCAL SERVICE MATRIX										SCHOOL SITE MATRIX					
		ADMIN	INSTR	TRANS	OPERA	MAINT	FIXED	STUDE	OUTGO	CAPIT	KD/SE	ELEM1	ELEM2	ELEM3	SEC-1	SEC-2
$ 117,667	ADMIN	1	.0970	.0158	.0197	.0093	.0128	.0068	.0056	.0077	.0655	.1017	.0945	.1374	.1613	.2649
1,905,279	INSTR	.0040	1	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0817	.1165	.1231	.1774	.1978	.2995
133,369	TRANS	.0000	.0000	1	.0000	.0000	.0000	.0800	.0000	.0000	.1200	.1560	.1270	.1280	.2600	.1290
266,800	OPERA	.0084	.0030	.0076	1	.0000	.0000	.0000	.0000	.0000	.0586	.0864	.0965	.0968	.3053	.3374
41,000	MAINT	.0628	.0010	.0026	.0000	1	.0000	.0000	.0000	.0000	.0844	.0957	.1322	.1044	.2015	.3154
159,635	FIXED	.0386	.0166	.0218	.0254	.0095	1	.0000	.0000	.0000	.0449	.1050	.1055	.1012	.2158	.3157
30,000	STUDE	.0000	.0000	.0000	.0000	.0000	.0000	1	.0000	.0000	.0400	.0585	.0773	.0914	.1992	.5336
4,000	OUTGO	.0357	.0357	.0357	.0357	.0357	.0357	.0357	1	.0357	.0701	.0985	.0868	.1136	.1328	.2126
50,697	CAPIT	.0919	.6317	.0000	.0000	.0000	.0000	.0000	.0000	1	.0000	.0000	.0000	.0000	.0000	.2764