MANAGEMENT OF EDUCATIONAL EXPENDITURES THROUGH GOAL/OBJECTIVE ANALYSIS

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ABSTRACT

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By

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As the costs of education increase significantly it becomes incumbent upon administrators to develop the best possible system for the management of resources to insure that fiscal and social needs are satisfied.

The purpose of this study was to obtain an opinion of future developments, by a highly qualified, select group of practicing administrators, in the area of goal/objective analysis as they relate to expenditures.

Procedures

A group of nine highly qualified and well-educated practicing administrators were selected from within the confines of the State of Michigan. These administrators were from various levels of K-12 education. A modified Delphi technique was used to obtain expert opinion. Respondents were asked to project opinion in the areas of development of a hierarchy of educational goals/objectives, instituting a modified classification of expenditure accounts, associating goals/objectives with expenditures,

and use of computer technology; all for the purpose of improving decision-making capabilities. After two rounds of the Delphi technique, respondents met in a general meeting.

Results and Conclusions

It was determined that there exists a need to develop standardized terminology and definitions in the area of goals and objectives. The idea of associating a goal/objective with an expenditure and providing computer retrieval was perceived as desirable; however, implementation of such a system was perceived as extremely cumbersome. Respondents viewed the use of goals/objectives in connection with expenditures in relation to decision making as somewhere between very limited and the single most important variable. The conclusion drawn was that information provided will be one important element that an administrator should consider when doing decision making.

Recommendations

Further research should be completed to: develop accepted terminology in the area of goals/objectives, categorize goals and objectives into a hierarchy, investigate the possibility of condensing expenditure accounts into a smaller number, study the weighting that administrators give to decision making based on goals and objectives, develop a simplified local district computer input

program, develop an output program tailored to the local district, develop a state or regional organization to coordinate and handle inputs from districts, and develop programs of exposure to systems and instructional processes for practicing administrators within the college of educational administration.

MANAGEMENT OF EDUCATIONAL EXPENDITURES THROUGH GOAL/OBJECTIVE ANALYSIS

By

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CHAPTER I

THE PROBLEM

Introduction

As the costs of education increase significantly it becomes incumbent upon administrators at all levels of education to develop the best possible system for the management of resources to insure that both fiscal and social needs are equally satisfied. This was supported by Kloster when he wrote:

> Education is a complicated and complex activity and as continued effort is made to correct additional societal dysfunctions through educational processes the complexity will correspondingly increase. School executives and managers of educational functions are being called upon to make major decisions involving services, staff, and instructional programs which require the allocation of substantial resources. These decisions must be, in the long term, the right decisions and should be made within the framework of the newest and most effective management systems and techniques. Management systems are not a substitute for intelligence and sound judgment. However, the systems will provide the manager with relevant, reliable data organized in a form most useful to him.[1]

Integration of management skills and technology occurred in the public schools around the time of World War I. It was about this time that business adopted time-and-motion technology, complex accounting systems, and production techniques. Very few school superintendents

attempted to transfer the benefits netted by industry to the educational system. It was not until the Cold War and the first Sputnik was launched that the leaders of the country, through The National Defense Education Act, began pouring large sums of money into the educational system. By the end of the past decade educators were starting to feel the pressure from various sources to provide a more accountable management of resources.[2]

Solutions have been many, and with each solution came additional information to be molded into a more complex system. The results of these endeavors have brought educators to the brink of operationalizing this large mass of information into a workable system of evaluation. The introduction of computer technology on a broad base introduces for the first time a method of coupling educational goals and objectives to a system of accountability.

Need for the Study

Administration of education has developed through the years from infancy in the early 1900s to where it is accepted by many as a discipline. Through the development there has been little change in how resources are managed. Management tools developed in industry are now being reshaped to fit the educational climate. Increasing expenditures in education have paved the way for methods to use more effectively and efficiently available resources.

Resources, both tax and manpower, which are needed to support public education are clearly limited and must compete with other public uses of these vital commodities. Perkins succinctly stated:

> Because public education has been called upon to solve economic as well as social problems, expenditures for education will continue to claim a significant share of the tax dollar. Since these expenditures are rising and available tax resources are being stretched, the public is demanding better justification of educational costs.[3]

Perkins went on to write:

> For years, school administrators have done a poor job of trying to tell the story of budget needs to the public. No real effort has been made to talk about the cost of educational programs and the effectiveness of our processes and methods.[4]

Along the same line of thinking, Richard S. Eckaus stated:

> The patterns [of management] that now exist represent the influence of tradition and of occasional crisis more than they indicate rational planning. . . . Though we have muddled through in the past, the internal and external pressures on our system [of public education] will not validate such behavior much longer.[5]

These opinions are reflected and reiterated by professionals, legislators, and so-called "common folk" daily. The results are just beginning to show in the form of demand for more accountability. Michigan is not atypical of the situation in which accountability finds itself presently. A profound explanation of the state of accountability within the largest intermediate district in the

state was expressed by the Oakland County Association of School Superintendents in 1972:

> It is concluded, therefore, that "educational accountability" being demanded here in Michigan stems from some complex and not fully understood phenomena in the body politic, and that the "demand" for accountability is a fairly amorphous idea, undefined in any theoretical sense and certainly not described operationally.[6]

This statement is still appropriate today. This body of educators went on to state:

> Certainly schools and people within schools can and do account for many things--money, supplies, students, personnel, etc. This accounting exercise is usually done for the purpose of audits, control and retrospective comparison. But if one is to inquire as to whether or not a school is doing its job and hold the school accountable for it, then one must be specific as to what its job is.[7]

In spite of efforts on the part of educators to introduce innovations, involve the community in educational affairs, and provide numerous alternatives to the traditional education, the quality of the job done by the schools is frequently questioned. It is becoming abundantly clear that evaluation of present programs and not institution of crash programs is becoming ever more demanded. This idea was reinforced by John Bequer when he stated:

> Only in recent years has an effort been made to see the school budget as something other than a means of controlling expenditures. Now it is also seen as an instrument helpful in focusing resources on selected goals, thereby contributing to the appraisal of how well the system is performing the task of educating its children.[8]

Focusing resources on goals sounds like a viable alternative but the concept is not without problems. Presently goals and objectives are not classified into any type of order. In his writing on this subject, Kloster stated:

> A partial solution to the problem is the refinement of goals into specific and measurable objectives and, the definition of processes as tasks which consume human and material resources and are scheduled to occur within a specified period. The decision-maker needs to identify the most efficient and effective course of action by which to accomplish the objectives. The tasks should consume minimum resources and yet achieve a desired quality of performance.[9]

Although there are a number of taxonomies dealing with objectives, one of the most complete taxonomies dealing with educational systems has been developed by Robert Ohm.[10] The bridge between the theoretical taxonomy proposed by Ohm and the "practical" world is an area of darkness presently. This bridge needs to be carefully constructed.

Statement of the Problem

Increasing pressure is being generated from a cross-section of the population in relation to accountability and education expenditure. Tuscher states:

> A vast majority of the educational institutions across the nation are experiencing financial difficulties. There exists a severe limitation on the supply of public funds for education, while the demand for public expenditure for education appears virtually unlimited. Consequently, careful consideration must be given to the budgeting process. Cost benefit and cost effectiveness techniques applied to educational

> expenditures have been suggested as useful methodologies in optimally allocating limited resources to maximize the return from the educational investment.[11]

In attempting to transfer the concept of cost-benefit analysis from the industrial setting to the educational setting, educators bold enough to attempt it have emerged briefly into prominence and then faded into obscurity. The problem associated with industrial transfer of cost-benefit and cost-effectiveness analysis becomes more apparent when a child or the evaluation of what a child is "supposed" to know at a certain level is compared to a sum of money, property value, cost of a square foot of space, or the compensation of his teachers. The problem with the concepts is the application of them into a humanistic environment. In his final report to H.E.W., Tusher suggested:

> In order to allocate limited resources among competing programs based on the utility of these programs, it is necessary first to establish a functional relationship between the utility of a program and the cost of each program at various levels of cost. The utility of a program is defined as a real valued number which expresses an evaluator's judgment of the degree to which a given program has the potential to contribute to the satisfaction of some stated criterion or objective.[12]

A critical review of the present educational system of expenditures indicates a great need for goal determination. The accounting system must develop the capability to go beyond the traditional stewardship function. Without adequate classification of expenditures and goals little management of vital resources can be expected.

Because of limited resources it has become a paramount necessity to determine a hierarchy of educational goals and objectives to effect rational decision making when confronted with fiscal restraints. In addition, the introduction of computer technology into the educational system produces the capability to adapt past systems to present-day technology to provide for more than stewardship capability to educational decision makers. This suggests that a highly complex system must be developed.

Delimitations of the Study

This study deals primarily with projections of the feasibility of developing an area of a management information system relating to the evaluation of expenditures for improving decision making. This study limits itself only to the projections made by a group of selected highly qualified practicing administrators with expertise in school business management and educational administration. This study is further limited by the boundaries of the state of Michigan and the realm of K-12 administration at the local and intermediate level.

While this study is primarily concerned with management of K-12 education at the highest level of management, there may be implications across the administrative spectrum filtering into the classroom. The concepts evaluated in this study have further implications for

analysis of educational systems outside the scope of this study, i.e., community colleges, higher education, and vocational/technical education.

In addition, conceptual transfer of findings of the study may possibly be applied to other than educational settings, since all organizations are confronted with similar humanistic problems.

Research Questions

1. Can a system of classification of goals/objectives into a hierarchy of order provide management with information to improve decision making?
2. Will a modified classification of expenditure accounts provide a more pure representation for improved decision making?
3. Can educational goals/objectives be effectively associated with an expenditure for improved decision making?
4. Can a system of associating expenditures with goals/objectives be effectively used with computer technology to provide a more effective decision-making tool?

Procedures for Data Gathering and Analysis

A theoretical model was developed by the researcher for each of the four questions. The model was based on all

available research and reading for each of the four research questions. Two questions were developed for each of the research questions. The first question pertained to the conceptual thrust of the research question. The second question addressed itself to the evaluation of the example provided. This was done to avoid only responses to the model provided as an example. The questionnaire sent to the respondents was open ended for the first round of responses. Upon receipt of the results from the participants a second questionnaire was generated. This consisted of the nine responses obtained for each question with instructions to rank order the responses and indicate on a scale of one to seven the degree of agreement or disagreement with the statement. Only responses to the first question in the first questionnaire were used since those questions and responses were the essence of the research thrust. The Delphi Technique for obtaining expert opinion was used up to this point, insuring anonymity of participants. Upon receipt of the second round of responses, an analysis was made and a meeting of the participants was initiated for clarification and additional discussion.

Participants were selected from several different sized K-12 school districts, intermediate districts, and one institution of educational administration. Participants

all possessed a minimum of the following qualifications:

Ph.D. in Educational Administration
Administrative expertise in finance of education
Practical administrative experience
Present employment in the field of educational administration

Nine participants were selected. The number of participants was small because of the availability of qualified educators and also because of the problem of dealing with an open-ended questionnaire.

Analysis of data generated was done after a rank ordering of results of the second round questionnaire and a mean of the degree of agreement/disagreement was determined. A set of summary statements generated from the open meeting of the participants was also analyzed. Upon completion of the analysis the results were reported.

To assist the reader in comprehending the study, definitions of systems acronyms and some technical terms follow.

Definition of Systems Acronyms

ASK--Attitude Sampling Kit

CBE--Competency-Based Education

CPM--Critical Path Method

EBO--Education by Objectives

EBR--Education by Results

ERAS--Educational Resource Allocation System

ERMS--Educational Resources Management System

EDP--Electronic Data Processing

LBO--Leadership by Objectives

MBO--Management by Objectives

MBR--Management by Results

MCS--Management Control System

MIS--Management Information System

OA--Operations Analysis

OR--Operations Research

OD--Organizational Development

PACER--Prescriptive Analysis for Curriculum Evaluation and Review

PERT--Program Evaluation and Review Technique

PPBS--Planning Programming Budgeting System

PPBES--Planning Programming Budgeting and Evaluation System

RAMS--Remotely Accessible Management System

ROME--Results Oriented Management in Education

SAM--Student Achievement Monitor

Definition of Terms

Account: A record of transactions affecting a specific item; a descriptive heading under which are recorded financial transactions that are similar in terms of a given frame of reference.

Accountability: The responsibility of being answerable for the expenditure of resources in terms of the results achieved.

Accounting System: A formal network of communications including records, procedures of recording, retrieving, and reporting information on the financial position of an educational unit or system for the purpose of stewardship, planning, control, decision making, and evaluation.

Computer Technology: Equipment and materials that are linked either directly or indirectly to a computer system.

Cost: Resources that are expended in exchange for goods and services.

Cost Accounting: A method of accounting associating an expenditure of resources with an accomplishment, purpose, activity, operation, or unit of output providing management with information for decision making.

Decision Making: Choosing between one or more alternative courses of action.

Direct Cost: Those elements of cost that are traceable to a unit of output or a segment of the organization's operation which are easily identifiable.

Expenditure: Charges incurred, whether paid or unpaid, which are expected to benefit the organization presently or sometime in the future.

Goal: A statement of what is to be internalized. Its characteristics include difficulty of measurement and delayed rewards.

Indirect Cost: Those costs which are not obviously traceable to a unit of output or to a segment of the organization's operations; costs which can be associated with a number of different programs or activities that are not easily identified with that unit.

Internalization: A process of interpreting data through sensory input in a subjective manner incorporating within the self the resultant stimuli which subsequently modifies or reinforces behavioral tendency.

Management: Any person or group of people who do decision making.

Management Information System: A network of communications that stores, processes, and feeds back information or data used in making decisions by managers.

Model: A representation either graphically or mathematically made which may be reproduced, applied, or followed because of its inherent feasibility or worth.

Objective: A statement intended to either bring about change in program elements or evaluate instruction. Its characteristics include ease of measurement and immediate rewards.

Program: A group of activities which are to achieve an organization's purpose.

Resources: Immediate and possible sources of revenue, money, materials, personnel, and conditions.

Stewardship Accounting: Managing accounts with emphasis on custodianship and safety as well as appropriate use.

System: Any complex interrelationship with simultaneous occurrences; a group of integrated and interrelated activities performed in sequence to achieve a goal or objective; an ongoing activity involving personnel, materials, and procedures to produce a given output.

Taxonomy: A system of classification.

Overview of the Dissertation

Chapter I included identification of the problem, background information, importance of the study, and generalizability of the study. In addition, it contained a definition of terms and acronyms used in the study, which may be unfamiliar to the reader or require clarification. Research questions to be analyzed were also included in this chapter.

A dual approach to the review of the literature is taken in Chapter II. Because of the nature of the study undertaken, an extensive review of systems as they pertain to education was done, in addition to an in-depth review of goal and objective analysis. Because the study is educational in nature, systems and models relating to education were looked at. The review of literature therefore is not inclusive of numerous models and systems not relating to education.

Chapter III provides the reader with the rationale of the study's design in addition to how the study was conducted. The Delphi method for obtaining expert opinion is discussed in depth.

Chapter IV provides an in-depth view of the data obtained. In addition to the data gathered for this study, there are raw data generated by evaluation of the example models developed for each research question. A table providing the reader a complete picture of the evaluation generated by participants is provided, in addition to the evaluation generated by participants in the group meeting. Conclusions are formed using the various data generated.

Chapter V, Implications and Recommendations, indicates to the reader what the perceptions of the researcher are, in addition to insight gained that might be of value to others wishing to continue with further research.

Footnotes--Chapter I

[1]Alexander J. Kloster, "Development of an Accounting System as Part of a Complete Planning, Programming, Budgeting System" (Ph.D. dissertation, Michigan State University, 1971), pp. 1-2.

[2]Oakland County Association of School Superintendents, "School Management Technology in Oakland County, Michigan" (Pontiac, Michigan, November 1972), p. 3. (Mimeographed.)

[3]Joseph A. Perkins, Jr., Peat, Marwich, Mitchell & Co., "PPBS and MIS--Their Role in Managing Education," paper presented at the National School Finance Conference, National Education Association, New Orleans, Louisiana, March 1969), p. 1. ERIC # ED 030 961.

[4]Ibid.

[5]Richard S. Eckaus, "Education and Economic Growth," in Economics of Higher Education, ed. Selma J. Mushkin.

[6]Oakland County Association of School Superintendents, "School Management," p. 4.

[7]Ibid., p. 5.

[8]John Bequer, "Relationships Between Educational Objectives and Educational Costs" (Ph.D. dissertation, University of Michigan, 1973), Vol. I.

[9]Alexander J. Kloster, "A Cost Finding System for Measuring Educational Output," June 9, 1972, p. 1. (Mimeographed.)

[10]Robert E. Ohm, "Organizational Goals: A Systems Approach," paper presented at the 20th Annual National Conference of Professors of Educational Administration Meeting, Indiana University, August 25, 1966). ERIC # ED 010 710.

[11]LeRoy J. Tuscher, "An Empirical Study of the Application of a Decision-Making Model Using Judgment in the Allocation of Resources to Competing Educational Programs" (Bethlehem, Pennsylvania: Lehigh University, October 1973), p. 1. ERIC # ED 085 416.

[12]Ibid., p. 3.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

To understand and assess the future of management decision making, it is necessary to look at the present and past attempts at formalization. It must be remembered that the impetus for development of modified decision-making methods is the public outcry for more accountability of educational expenditures.

This chapter is divided into several sections, each of which is designed to provide a better understanding of the basis of educational management and decision making. The first sections of the chapter provide a basis for understanding some of the many methods of managing educational expenditures in addition to exposure to the formalized titles. The remainder of the chapter is devoted to the area of goals and objectives.

Systems and Systems Analysis

Systems and systems analysis are becoming increasingly more important as the search for effective management of educational expenditures continues. Typical are just two of many recent research findings that exemplify

both the broadness of educational settings having the need for systems and the diversity of institutional settings from which the research generated.

Murry Gregg, in his research findings, stated:

> As a result of the findings of this study, short-term and long-term goals and objectives have been established. These goals and objectives via the systems model, reflect a comprehensive planning program that has established authority and responsibility to gain optimum decision-making for vocational education programs.[1]

Two years later, in 1974, James Brown in his research findings dealing with systems in higher education stated:

> The application of the systems approach can enable institutions to radically change their orientation, purpose, and process. If these systematic approaches are applied to the analysis of the institution itself and to the development of institutional structures, higher education could break the barriers limiting its service to the community. . . . The systems approach is thus a mechanism for change, as well as a problem solving process. In the long run its stimulation of change may be its greatest ultimate value.[2]

Where did systems come from, what is a system, and when did educational administrators start using systems? The word system has been with us a long time. Some examples are solar system, circulatory system, political system, and communication system. John Maynard Keynes (1936),[3] in his discussions of the economic system, envisioned the concept of system as the existence of a set of subsystems so integrated that the whole displays unique attributes. He proceeded to indicate further that system connotes plan, order, method, and arrangement.

Although the terms systems and systems approach are broad terms and not easily definable, considerable effort has been given by many individuals and groups to arrive at a consensus. Following are some of the more succinct definitions.

Pfeifer described the systems approach as:

> . . . a disciplined way of using specialists in a variety of fields to analyze as precisely as possible sets of activities whose interrelationships are very complicated and of formulating comprehensive and flexible plans on the basis of the analysis.[4]

Ackoff described the systems approach as:

> The stages of analysis including formulation of a problem, construction of a model, discovery of a solution, testing, evaluation, control, and implementation of the solution.[5]

Andrew and Moir stated their views as:

> Systems analysis techniques are a method or vehicle which enables decision makers to find the most efficient and economically feasible solutions to man-machine system problems. These techniques permit the comparison of alternative means of carrying out some function, where the means are complicated and comprise a number of interrelated factors.[6]

The American Association of School Administrators defined the systems approach as:

> . . . a rational procedure for designing a system for attaining specific objectives. The methodology includes specification of objectives in measurable terms; restatement of the objectives in terms of capabilities and constraints; development of possible approaches as a result of a trade-off study; integration of the approaches into an integrated system; evaluation of the effectiveness of the system in attaining objectives.[7]

According to Stephen Knezevich, the salient features of the systems approach are:

1. Clear delineation of long and short-range objectives capable of being translated into operationally meaningful activities and subsequent evaluation.
2. Recognition of the dynamic nature of goals and sensing when new ones have emerged or when a reordering of priorities among existing objectives is imperative.
3. Recognition of change as a normal [process] in viable organizations operating within an environment in ferment and creation of methods to facilitate prudent change.
4. Generation of alternative means of utilizing resources to attain objectives.
5. Creation of models to study part or all of the system.
6. Utilization of quantitatively-oriented tools and procedures in analysis of systems.
7. Dedication of a high priority in the time schedule of top echelon administrators to planning and programming activities.
8. Employment of interdisciplinary teams of specialists in problem analysis, new systems design, operations evaluation, and the like.
9. Consideration of coordination of the ever growing number of educational specialists within the system as a matter of high echelon concern.
10. Implementation of sophisticated objectives and scientifically oriented procedures in decision-making.[8]

What do these definitions mean? People concerned with systems and systems analysis have not completely agreed on precisely what it is. Analysis of systems is at the present time too young a field to have matured into a large body of accepted doctrine. The discipline is to a large part generated by and from the field of economics.

The systems approach to education was in its infancy during World War II in various research projects on the control of man-machine systems, using interdisciplinary teams and scientific methods to produce answers that best served the goals and objectives of the military

organizations served.[9] Since that time numerous types of systems have evolved. Several of these having more impact on education than others will be discussed subsequently.

By using systems analysis or the systems approach, administrators are given an improved tool to aid them in making better decisions about the allocation of human and material resources. Educators continue to debate the issue of the appropriateness of this type of analysis to education since much of systems deal with quantitative data. It is argued that in education there are many value judgments to be taken into consideration when making decisions. Many of these cannot be measured in quantitative terms. Educational goals and objectives are difficult to specify precisely and even more difficult to measure. Complete quantitative evaluation is not a valid measurement because value judgment and experience play a very important role in decision making. The task of the anlayst is to present alternative ways and means to the decision maker, who in turn exercises his value judgment after careful consideration of the data. The function of the analysis is not to channel resources away from education but rather to help the educator to achieve the most effective use of available resources within the framework of values that the community has established.[10]

The problems associated with defining precise educational goals and objectives are exceedingly complex. This is because of the differing value judgments among both educators and the community on what is most important for accomplishment. Output measurement therefore is exceedingly difficult.

This does not mean, however, that because accurate data are difficult and in some cases almost impossible to obtain that there will never be methods to obtain these data and that the process of systems analysis should be abandoned. It must be understood that the educator will never be free from making judgments. Research is needed badly in areas that determine the relationship of what is being done in schools and what is being learned. The systems approach helps to focus on the unknown to indicate clearly the direction research needs to take.[11]

If there are goals or objectives to be accomplished where all tasks can be performed in a lineal time sequence, and where there are no complex interrelationships or need for critical control by management, then it is NOT necessary nor desirable to use a systems approach. If good step-by-step thinking can be used in a situation, then activities devoted to systems design are a waste of time and should not be used. In addition, cumbersome detail should not be mistaken for complex interrelationships.[12]

McManama stated that a systems approach is in order:

1. When complex interrelationships are involved which are difficult to manage, especially when things go wrong.
2. When otherwise simple interrelationships occur simultaneously making it difficult or impossible to correct for deviations without stopping the operation.
3. When critical feedback control must occur instantly.
4. When it is imperative to detect all of the social consequences of the system.
5. When it appears that the present operation could be improved by introducing any of the above elements.[13]

The systems approach has brought about many different methods of focusing on the process of management decision making. Before discussing which of the present models are relevant to educational administrators, it is inherent that the substance of a model be put forward. Bereday and Lauwerys suggested that: "A set of variables, their classification, relationships among them and the consistency condition constitute a model."[14] In a concluding statement after a long narrative explaining the above definition, they further indicated that: "An idea, any thought, when logically consistent, is a model."[15]

Andrew and Moir stated that:

> A model is an abstract representation of reality and it is used to describe, predict and control the system which it attempts to represent. . . . The principal advantage of a model is the ability which we have to manipulate it and to predict the outcomes of the various controllable factors without affecting the actual system.[16]

There are two categories of models, one of which will be dealt with and described in depth because of the

thrust of the study. This is a basic systems model. The other, a goal model, will only be defined. Etzioni suggested that "A goal-model approach defines success as a complete or at least substantial realization of the organizational goal."[17] He further proceeded to define a systems model in the following terms:

> The system model, however, leads one to conclude that just as there may be too little allocation of resources to meet the goals of the organization, so there may also be an over-allocation of these resources. The system model explicitly recognizes that the organization solves certain problems other than those directly involved in the achievement of the goal, and that excessive concern with the latter may result in insufficient attention to other necessary organizational activities, and to a lack of coordination between the inflated goal activities and the de-emphasized non-goal activities.[18]

McManama provided the following format as a systems model for education:[19]

SYSTEMS ANALYSIS

1. Analyze what needs to be done
   - 1.1 State the goal
     - 1.1.1 Perform ABC tasks*
       - *(A. Consider the alternatives)
       - (B. Establish the basic criteria)
       - (C. Identify the constraints)
   - 1.2 State the terminal objectives
     - 1.2.1 Perform ABC tasks
   - 1.3 State the enabling objectives
     - 1.3.1 Perform ABC tasks

SYSTEMS DESIGN

2. Analyze what needs to be done
   - 2.1 Study the existing design
     - 2.1.1 Perform ABC tasks
   - 2.2 Conceptualize the structure
     - 2.2.1 Perform ABC tasks

2.3 Select an appropriate model
    2.3.1 Perform ABC tasks
2.4 Select the method-means
    2.4.1 Perform ABC tasks

SYSTEMS MANAGEMENT CONTROL

3. Manage the system
    3.1 Apply management control
    3.1.1 Perform ABC tasks

Numerous models have been developed using the systems approach. Because of the thrust of the study, three models will be looked at in depth. The models are Program Evaluation and Review Technique, Planning Programming Budgeting System, and Management by Objectives. Some of the other models include:

Operations Analysis Research--A problem-solving approach, employing scientific analysis to management decision problems where the use of quantitative methods, modeling, and simulation are stressed.[20]

Systems Analysis--Explores the implications of alternative assumptions rather than analyzing extensive detail questioning objectives.[21]

Cost Effectiveness, Cost Benefit Analysis, Resources Effectiveness, Rate of Return Approach--A model designed to measure the extent to which resources allocated to a specific objective under each of several alternatives actually contribute to accomplishing that objective so that different ways of gaining the objective may be compared.[22,23,24]

Critical Path Method--The longest path in time to reach an objective event from the beginning event; also contains a cost time function; is not a prediction model but rather an after-the-fact model.[25]

Program Evaluation and Review Technique

PERT is a model developed to implement extensive and complex plans over a long period of time. It was

developed because of the inadequacy of the management of complex large military and government projects. PERT was developed by the Special Projects Office of the Navy and Booz, Allen, and Hamilton in 1958 for use in the Polaris Project.[26]

Some of the problems which PERT comes to grips with include coordination of a large number of subtasks (as high as 2000) with complex interrelationships, projecting completion times, constant monitoring of progress, and in-progress adjustment.

A PERT model appears as Figure 1 on the following page. The model is accomplished in two phases. The first phase is the planning phase during which objectives are set, a plan developed, and schedules are determined. This is constantly updated until all sources and information are included. The second phase is the operating phase. Ideally this phase does not begin until the planning phase is complete. In actuality, however, the plan is likely to be approved and started in phases. Also the planning phase will be repeated as modifications are needed. In the operating phase measuring, processing, analyzing, and decision making take place.

Planning Phase

Establishing program objectives--Definitions of tasks are developed. Subsystems are identified and further

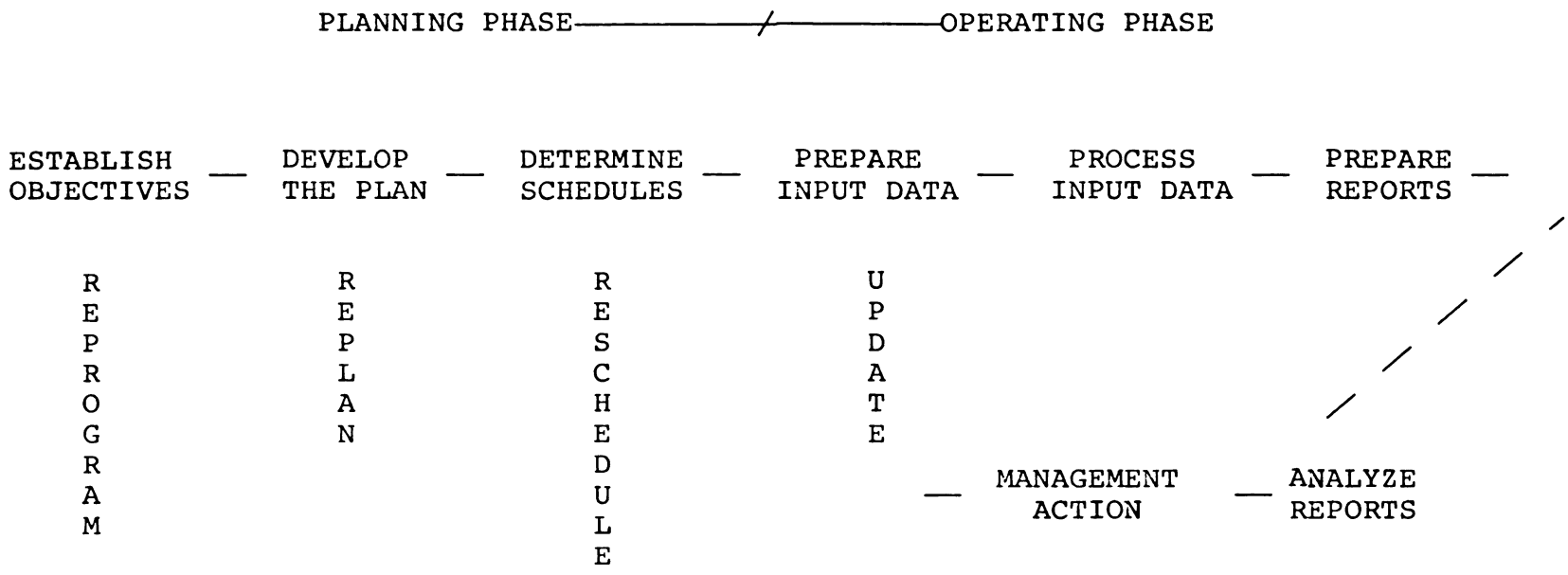

Figure 1.--PERT time system cycle.

Source: Oakland Schools, "PERT in Relationship to Educational Administration" (Pontiac, Michigan: Oakland County Intermediate District, 1972), p. 1. (Mimeographed.)

broken down. Subsystems may be further broken down into new subsystems until objectives can be formulated.

Developing the plan--After specific parts of the subsystems have been identified, the major achievements in the system must be identified. These are sequenced and a time schedule is developed. Time estimates are made for each activity and a time estimate is selected. If the initial time plan does not conform to desired completion dates, then additional resources or manpower are added and the estimate revised accordingly.

The Operating Phase

This phase starts with the actual beginning of the project.

1. During the operating phase the following information is available:
   a. Completed activities and events with the completion date noted.
   b. Changes in the estimated completion of network activities.
   c. Changes in the network.
2. These reports can be analyzed in order to help determine:
   a. What the problems are.
   b. At what points in the network decisions are required.
   c. Alternative courses of action.

d. The expected consequences of the selected course of action.

3. Normally action is taken by management as updated information is available. This action may involve rescheduling, replanning, or reprogramming.[27]

PERT has been applied to educational research and the development of projects, curriculum development, experimental research, registration procedures, and the planning of comprehensive education programs and school facilities.[28] The results so far indicate that PERT can have a very positive impact on educational planning.

Planning Programming Budgeting Systems

PPBS is an aid to decision making. It is designed to help responsible managers make decisions supplementing their judgment, political wisdom, and leadership qualities. PPBS is needed because there are insufficient resources to accomplish all goals of an organization. Priorities are a necessity in addition to a feedback system to determine the results of management decisions. The five basic elements in PPBS are:

1. After careful analysis of overall organization purposes, objectives should be established in each major activity area. Priorities must be established to insure that major spending occurs in the most important areas.
2. A program structure must be devised to reflect the overall objectives already established. Costs and benefits of alternative ways to achieve program objectives are then analyzed to determine what combination of activities offers the most benefit at the least cost.

> 3. These costs and benefits are projected into a multi-year plan which takes into consideration future implications of current year decisions.
> 4. Evaluation of decisions takes place as information about activities is fed back to decision makers. What is must be compared to what was expected.
> 5. Basic objectives are re-evaluated as new information is continuously fed back into the organization. Organization objectives are confirmed or adjusted and the cycle repeats itself.[29]

Program budgeting is a fairly new concept. It was first developed for the Air Force by the Rand Corporation. In 1961 Robert McNamara mandated that the entire Department of Defense adopt program budgeting for all defense operations. In 1965 President Johnson mandated that all major federal non-defense agencies were to operate under program budgeting. Elements of program budgeting had been used prior to that time by several federal agencies and a form of program budgeting was operational in many agencies from 1930 on. Further insight may be gained from Shick, who wrote:

> Budgetary reform in the United States has evolved through three distinct stages, the last of which is associated with the contemporary Planning-Programming-Budgeting System. In the initial stage, the primary emphasis was on central control of spending and the budget was utilized to guard against administrative abuses. The detailed classification of objects of expenditure was the main control mechanism. The second stage was management-oriented. It was concerned with the efficient performance of work and prescribed activities. The performance budget, officially introduced by the Hoover Commission, was the major contribution of the management orientation. The third stage is reflected in the planning orientation of the new PPB system. It had roots in Keynesian economics and the new technology of systems analysis.[30]

If PPBS is broken down into its component parts, then the following may be conceptualized according to Nowrasteh:

> Planning is the process of determining the objectives and specifying alternative methods of achieving objectives;
> Programming is the process of optimizing the mixture of resources (inputs) necessary to attain objectives. The term programming is used in a non-computer sense;
> Budgeting is the process of systematically relating the expenditure of funds to the accomplishment of objectives or to a multi-year fiscal planning dimension of the process;
> System is a set of elements so interrelated and integrated that the whole displays unique attributes.[31]

The conceptualization of PPBS was viewed differently by McManama when he wrote:

> Planning--Alternative ways of solving a problem are compared in terms of input cost and output benefits.
> Programming--All of the activities related to achieving an objective are brought together as a program for planning and budgeting purposes.
> Budgeting--Available resources are matched with program priorities.[32]

To provide a reference point from which the reader may put the concept of PPBS in proper perspective, a set of contrasts between PPBS and traditional budgeting is provided from several sources. McManama viewed the shortcomings of the traditional budget as:

> 1. Traditional line item budgets are projected for only one year. The common procedure is to adjust each category by a percentage change to correspond to the cost of living index. This tends to perpetuate whatever rationale, if any, established the initial priority of allotments. It also assumes that there is a direct relationship between cost of living changes and educational costs.

2. Line item budgets establish constraints to programming rather than assisting in program development. To introduce a new program, one must first find out what is available in the budget and then develop a program, hampered by both the limitations and excesses which are available.

3. The cost analysis data which is available from traditional budgets is mostly misleading and useless. Per pupil cost figures which appear to have something to do with accountability are usually meaningless. Per pupil cost to accomplish what? Compared to what?

4. Line item budgets do not hold financial boards accountable for their budget cuts. A reduction in a per pupil formula or a percentage cut have the effect of directing educators to do what they hoped to do, with less money. Cuts are made in input without regard to the effect on output.

5. Traditional budgets do not reflect the true cost of proposed projects. At best they indicate the down payment cost while ignoring the number of years the program will operate.

6. The program manager or decision maker is bogged down with detail in traditional budget accounting. He is occupied in a time consuming process of classifying cost data in a format that is of very little help in planning.[33]

McManama viewed the benefits of PPBS as:

1. PPBS makes it possible to compare alternative ways of accomplishing a given objective.

2. PPBS makes it possible to project the true cost of instituting a new project.

3. The long term cost of a given project is also available for scrutiny in a program budget.

4. PPBS provides a measurement of cost efficiency.

5. Expenditures which are related to a given objective can be brought together no matter how widely dispersed they have been allocated.

6. A program budget collects and organizes data with the decision-maker in mind.

7. The cost/benefit comparison of competing programs is available in PPBS.

8. Program budgets clearly indicate who is responsible for managing each activity.[34]

Nowrasteh found the following comparisons of PPBS and line-item budgeting:[35]

PPBS	Line-Item Budget
1. Output oriented	1. Input oriented
2. Multi-year fiscal implication	2. Single-year fiscal implication
3. Offers alternative	3. Choice is made, no alternative
4. Policy decisions made before budget cycle starts	4. Decisions made as to shifts and cuts
5. Program changes dictate money shifts	5. Encourage across-the-board cuts and increases
6. Based on realistic and detailed assessment of program costs	6. Based on blanket concept which ignores differential costs
7. Outputs can be evaluated	7. Output evaluation not likely
8. Explicit, systematic, integrated	8. Vague, piecemeal, fragmented
9. Extensive data base and analysis is necessary	9. Analysis not required
10. Shows effects of policy decisions on individual programs	10. Hides effects of decisions
11. Stimulates innovations	11. Continuation of existing activities is encouraged

After a glance at the theoretical benefits of PPBS, it is the next order of business to look at some of the reactions both positive and negative on the practical side of using such a system. Hale,[36] in a research study, concluded that PPBS was a viable alternative for budgeting and accounting in large urban school districts. Levin, when reviewing PPBS, concluded:

> Even if the managers of the schools do not consciously attempt to maximize a particular set of goals, the implementation of specific processes and inputs will create outcomes.[37]

Cramer and Gilmar[38] provided evidence that PPBS can be the motivating force to obtain community involvement

in education. Dyer, consultant to the Rand Corporation, in a report to H.E.W. stated:

> While the costs were recognized as significant, the potential benefits also appear to be great. . . . Although presenting no panacea, PPBS does offer a logical, objective oriented approach to planning. . . . Although PPBS offers no escape from a reliance on managerial judgments, the more relevant information generated by its associated activities should improve both the perception and understanding of an exceedingly complex system.[39]

Perkins and others, in support for PPBS, stated:

> The value of PPBS in education results not from the individual techniques that have been developed, but from the integration of them into a system and their procedural application to educational decisionmaking.[40]

In his detailed discussion on the influence of PPBS on capital budgeting, Ellis indicated that PPBS is a workable concept when the following items are considered:

> . . . We identified ten items to be considered in capital planning--the needs, the objectives, standards, alternatives, the comparison of alternatives, the selection of a preferred alternative, the allocation of resources of a five-year plan, a fiscal plan for the state, economic projections, and political priorities.[41]

Criticisms of PPBS have been many. Some of the more prevalent complaints are included in the following pages. In his article "The Rise and Fall of PPBS in California," Kirst[42] submitted that PPBS in California is failing because adequate goals cannot be established and the concept cannot be operationalized. James[43] listed the faults of PPBS as the inability of personnel to adapt to the system, the false idea that PPBS can make the

decision for you, unquantifiable goals and objectives, and the inability of some individuals to manipulate computer input.

The Office of Education[44] indicated that another problem with PPBS is the question of what to do with indirect costs. This problem was further researched by Roemmich[45] when he compared the four alternatives of cost accounting--direct costing, full costing, simple linear regression costing, and multiple regression costing.

Anshen and McKean[46] indicated that there is even lack of agreement on what PPBS means. They considered that the meaning of program budgeting can range from a simple rearrangement of the budget into meaningful categories to the inclusion of concepts such as long-range planning and cost-utility analysis. They identified the following constraints:

1. The transitional problem of how to change from the input-oriented budget to the output-oriented one;
2. The difficulty of bringing together a group of activities scattered through several departments into one activity cluster;
3. The case of personnel that service several different program elements and how to account for them in a budget;

4. The allocation of operating and maintenance equipment that must serve several different program elements.[47]

Hartley listed the following obstacles to implementation of PPBS:

1. Shortage of trained personnel
2. Political factors
3. Increased costs
4. Goals become distorted
5. Cult of testing
6. Measurement difficulties
7. Overemphasis of efficiency
8. The centralization syndrome
9. Organizational strains
10. Teacher resistance
11. Transfer problems
12. Wisdom lag

Two of the twelve elements that drastically limit educational use of PPBS, Hartley contended, are the primitive testing techniques used for evaluation and lack of the wisdom on the part of administrators to use the output to solve the schools' problems.[48]

Weiss listed the following objections to PPBS:

1. It's impossible and undesirable to force everyone in the district to agree on goals and values.
2. PPBS requires too much computation, form filling, data processing, and paper shuffling--all at great expense.

3. PPBS is politically impossible.
4. Formal planning stifles creativity and innovation.
5. Many good educational results are unmeasurable.
6. There is not enough community (or student, or teacher) involvement.[49]

Mosher made the following observations when analyzing the results the Department of Defense had with PPBS:

1. PPBS has been oversold. Its success in certain program areas was praised while its lack of success in other areas was ignored.
2. Most of the literature of PPBS deals with an over-simplified world. There are values which cannot be priced, values which defy quantification.
3. Certain intrinsic difficulties of PPBS have not been dealt with. These include the determination of objectives in a democracy, quantitative measurement, problems with the administrative organization and legislative reaction.
4. States have problems that are unique to them.
5. Federalism itself presents great difficulties. There are two, three, or four levels of government concerned with virtually all domestic spending.[50]

When discussing the pitfalls of PPBS, McManama suggested:

1. Schools are open systems. While closed systems respond perfectly to self-regulation and predictability, open systems are constantly subjected to outside contingency factors, such as changes in priority, which make precise control impossible. Program budgets are subject to the effect of the changes in input and output which are inevitable in an open system.
2. Mystification can obscure specification. There is a certain mystique involved when new sophisticated methods are used. There is a danger that those who use program budgeting will take advantage of the awe in which they are held in order to mystify others into going along with programs.
3. The value of a program budget is measured in the quality of the decisions rendered, not the elegance of the data presented. A poor choice of alternatives to be tested can render the process meaningless before it has begun.
4. Elegant quantification is no substitute for relevant qualification. No matter how sophisticated

> the procedure may be it is only as good as the human judgments made in deciding what to ask the system to do.
>
> 5. What is validated can be misinterpreted as what is valuable. When an objective can be validated, it becomes easier to sell it to the client. Often there are valuable objectives which are difficult to validate using a given procedure. Valuable objectives should not be sacrificed because they don't show up well in cost/benefit analysis. The relationship between costs and benefits is a value judgment in the final analysis.[51]

Summary of PPBS Literature

The problems with PPBS are many and the solutions will be long coming. PPBS is standing up under all the pressure which has come to bear. Weiss gave a succinct response toward the future of PPBS:

> In general the PPB reformer can expect to hear claims that his approach is "totalitarian," "dehumanizing," and "impossibly hard to do." None of these claims is true or reasonable. . . . Public school planning and budgeting should be evaluated on criteria of responsiveness and effectiveness. Without the major elements of PPBS, it is impossible for the decision makers in any school to respond systematically to any need or influence, and, further impossible for them to decide whether the schools have been effective in achieving any of their purposes. If administrators, teachers, and parents believe their own homilies about the mission of the schools, then they must, logically, advocate planning reform.[52]

Management by Objectives

Management by objectives (MBO) is another relatively new concept in the field of education. Management by objectives was described by Johnson, Kast, and Rosensweig as:

> In brief, the system of management by objectives can be described as a process where by the superior and subordinate managers of an organization jointly identify its common goals and define each individual's major areas of responsibility in terms of the results expected. . . .[53]

Johnson, Kast, and Rosensweig described the conceptual framework of MBO as:

> 1. The basic structure of the corporation is the organizational form often called a hierarchy. . . . Management by objectives is a system for making that structure work, and to bring about more vitality and personal involvement of the people in the hierarchy.
> 2. Management by objectives provides for the maintenance and orderly growth of the organization by means of statements of what is expected for everyone involved, and measurement of what is actually achieved. . . . It stresses the ability and achievements of leaders rather than their personality.
> 3. As a system, management by objectives is especially applicable to professional and managerial employees. . . .
> 4. Management by objectives helps overcome many of the chronic problems of managing managers and professionals. For example:
> a. It provides a means of measuring the true contribution of managerial and professional personnel.
> b. By defining the common goals of people and organizations and measuring individual contributions to them, it enhances the possibility of obtaining coordinated effort and teamwork without eliminating personal risk taking.
> c. It provides solutions to the key problem of defining the major areas of responsibility for each person in the organization, including joint or shared responsibilities.
> d. Its processes are geared to achieving the results desired, both for the organization as a whole and for the individual contributors.
> e. It eliminates the need for people to change their personalities, as well as for appraising people on the basis of their personality traits.
> f. It provides a means of determining each manager's span of control.
> g. It offers an answer to the key question of salary administration--"How should we allocate pay increase from available funds, if we want to pay for results?"

h. It aids in identifying potential for advancement and in finding promotable people.[54]

In a speech delivered at the American Association of School Administrators, Bell described a method of implementing MBO in a school setting. The steps for implementation are:

1. Conduct an assessment of the most critical educational needs in the school district.
2. The chief executive officer, usually the superintendent of schools, is to review the results of the needs assessment and to identify some high level performance priorities.
3. A system-wide critique of the superintendent's tentative performance priorities should be conducted.
4. The chief executive officer will review all of the feedback received from the schools in the system and then formulate his final performance priorities for the coming academic year.
5. Each school will review carefully the final performance priority statements issued by the superintendent to determine which apply to his school.
6. Each school prepares written objectives requiring special management concern during the coming academic year. The written objectives should indicate a performance factor and a time frame.
7. Central office should review and respond to the objectives written by the local school. Their function includes the insuring that district top priority objectives are included in the school's high priority.
8. The local school prepares a list of objectives (not more than ten or so) which become a performance commitment between the school and the superintendent.
9. Operational planning takes place in each school. For each objective a time sequence is set up and personnel are assigned to complete subobjectives by deadlines.
10. Insure that action steps throughout the year are accomplished.
11. Monitor the progress in reaching each of the major objectives by holding monthly review meetings.
12. Hold an end of the year evaluation.
13. Prepare new needs assessment for the following year.[55]

Management by objectives suffers under some of the same afflictions that PPBS does. A sampling of research findings in the past five years yields some expected results. A research study conducted by Nightingale produced the following conclusions, among others:

> Management by objectives, when properly implemented, results in increased commitment, motivation, job satisfaction, and improved performance and effectiveness. Subordinates have greater freedom of operation; all personnel delegate more. There is increased input from subordinate levels of management. Communications, teamwork, and esprit de corps are improved and increased. The effectiveness of managers is increased and the growth of subordinates enhanced. . . . Management by objectives is not a panacea for solving all management problems. . . . The problems encountered in implementing MBO are not of sufficient magnitude to cause [administrators] to avoid implementing it.[56]

In another research study, Livingston attempted to find out if MBO had any effect on achievement of students. He wrote:

> It was concluded that Management By Objectives had been effective in increasing reading achievement scores and that the treatment effect was consistent across all grade levels in the experimental schools.[57]

Weber, in her findings on job satisfaction, productivity, and MBO, reported that:

> Job satisfaction appeared to be affected by the implementation of management by objectives, and second that job satisfaction was increased negatively in relation to goal quality.[58]

Phillips, in his research findings, reported that:

> In order for the MBO concept to work, the leadership at the top and the persons within the organization must be committed to trying to make the system work, time and resources must be committed, and time lines must be followed up and adhered to.[59]

From these findings it is reasonable to indicate that MBO suffers from the same drawbacks as does PPBS and enjoys some of the same benefits.

Summary of Systems

The benefits and drawbacks of systems as they apply to the educational setting have been brought forth in the context of this section. It should have become apparent that many of the problems that presently plague the effective and efficient operation of the systems defined and discussed are personnel problems, Misunderstandings of the concepts involved inhibit the operational functioning of the systems discussed. These misunderstandings range from those who want the system to make the decision for them to those who are threatened by the very existence of anything other than a simple process for management (if I can't see it, it doesn't exist syndrome). There is a middle ground where these two opposites must meet. Both the advocate of no system and the advocate of complete systemization are going to have to realize that the system is but a tool to be used as an aid to decision making. The days of simplicity are gone. From a present-day perspective looking into the future, it can be easily seen that the day of the single system is fading quickly. What is now in the infancy of development is a management system for a group of integrated systems. This is now being referred to as a management

system for management information systems. In exploring this concept as early as 1970, Dickson wrote:

> The more one becomes involved in the area of MIS management, the more one is struck by the similarity between this area and the management of research and development activity. In both cases, heavy expenditures are required in order to produce future benefits that are very uncertain in their magnitude. In both areas, many projects must compete for the organization's limited resources. Both activities are such that it is very easy to start projects for a low first year cost, but to have cost build substantially in subsequent years. Thus, because of long project lives, a one year project planning horizon is dangerous. . . . These similarities between the stages of analysis and design of MIS projects and research development projects suggest that a good many managerial practices and procedures from the latter may be applied to the former.[60]

This further abstraction puts an additional burden on decision makers. The challenge for administrators now and in the immediate future is to draw out expertise from personnel who are not yet aware that they have the capability to develop.

A statement made by Conviser and Entwisze indicates the impact that systems were having then, and little has changed in the past seven years.

> The success in applying systems theory and related techniques to education has so far been modest--in most applications the systems approach is more a frame of mind or point of view than an actual translation of formal systems theory taken from operation research or engineering. But the prospects for the systems approach, especially in relation to some of the urgent social problems we now face, look good because there may not be any other rational way to proceed.[61]

When looking to the future, James concluded:

> The final word must be Plato's, for he said "it is only if we can pursue all these situations until we see their kinship, that they contribute to our purpose and are worth the trouble we spend on them.[62]

Such is the case for systems.

Goals and Objectives

Historically, the United States inherited European traditions including educational goals which reflected the cultural patterns developed up until that time. As the country developed the principles contained in the "Old Deluder Satan Act" of 1647 which could be traced back to the Latin grammar school were replaced by those of Franklin's Academy which were tailored to the needs of American students. Since this time a highly decentralized and individualistic approach to the development of educational goals and objectives has developed.[63]

Attempts were made periodically at various levels of government to standardize a group of goals and objectives. One of the most well-known efforts was made in 1918 by the Commission on the Reorganization of Secondary Education. They developed the "Seven Cardinal Principles of Secondary Education,"[64] which are still in existence today. The principles are: health, command of fundamental processes, worthy home membership, vocation, civic education, worthy use of leisure time, and ethical character.

The National Education Association, through its Educational Policies Commission, has tackled the task of goal and objective definition on several occasions.[65] The American Association of School Administrators developed the "Nine Imperatives in Education" in 1966.[66] The imperatives are:

1. To make urban life rewarding and satisfactory.
2. To prepare people for the world of work.
3. To discover and motivate creative talent.
4. To strengthen the moral fabric of society.
5. To deal constructively with psychological tensions.
6. To keep democracy working.
7. To make intelligent use of natural resources.
8. To make the best use of leisure time.
9. To work with other people of the world for human betterment.

A need exists to further define goals and objectives of education at all levels of government. The area of goal and objective development is vital to the integration of systems into the educational field to improve decision-making capabilities. Hovey indicated this at the federal and state level when he wrote:

> The corner stone of economic analysis of government programs is the identification of program or agency goals. Until it is decided what effect a program is supposed to have, no amount of information about the effect it does have will be of any value.[67]

One of the primary reasons that goals and objectives are difficult to identify is the lack of a common definition for the terms. Goals and objectives are used interchangeably by many. There is, however, a distinct difference between the two terms. According to Nowrasteh, the following are definitions of goals and objectives:

> Goals: Goals are general statements of purpose or intent toward accomplishment of which the agency's efforts are directed. Goals are not quantifiable or measurable and are not related to a specific time period. Goals are broad in scope.[68]
>
> Objectives: Objectives are quantifiable accomplishments within a time period. They relate to one or more goals; they can be measured; the time period of achievement is explicit; and the method of measurement is known.[69]

The problems with identification of goals and objectives without any type of hierarchy to classify are abundant. This problem was brought out by Andrew and Moir when they wrote:

> The problem of defining the type of precise educational objectives and performance measures that are needed in system design work in education is, as already indicated, exceedingly complex. This is because the problem involves differing value judgments among both educators and the community on what the most important goals and purposes of education are, and what a school should accomplish. Measuring educational outcomes is therefore also particularly difficult because the system's objectives are multidimensional and include social, cultural and aesthetic values, as well as academic performance. Even standardized achievement test scores are not very reliable since they do not take into account the socioeconomic status of the home and community.[70]

The problem was further amplified by Haggart:

> If, however, more reasonable goals can be translated into program objectives, then the activities of the educational system can be categorized into programs based on their contribution toward meeting the objectives of education.[71]

In attempting to establish a hierarchy, Carpenter identified either end of the scale as:

> These goals are, in fact, at the top of a hierarchy. . . . At the bottom of the hierarchy might be behavioral objectives, devised for the design and evaluation of instruction.[72]

Doherty attempted to fill in the gaps between the ends of the scale when he wrote:

> . . . It is consistent to think of program goals and program objectives. . . . It seems logical to assign the term program objective to a statement of intent to change program elements in a specified way to improve the effectiveness and efficiency of the program. . . . Since each program has outcomes, usually multiple, and usually stated without reference to time commitments or methodology, it seems logical to apply the term "program goal" to such outcomes.[73]

A need presently exists to tie the developing hierarchy of goals and objectives together into one usable hierarchy. A theoretical basis and a model was developed by Ohm[74] providing an extremely powerful hierarchy which is presently in need of conversion into a usable form. Ohm's taxonomy provides the basis upon which further research could be based. The historical development of goals as they apply in a systems context, in addition to his thought-provoking model, are of extreme value to any researcher in this area. Because Ohm's writings have formed the basis of several of the examples provided in

the appendices, a complete copy of Ohm's taxonomy is provided in Appendix E.

Summary of Goals and Objectives

The history and recent developments of goals and objectives were provided in this section. Goal and objective analysis is still in its infancy and much work needs to be done on not only establishing common definitions but developing a workable hierarchy as well. To develop any systems in education, it is paramount that goals and objectives be identified and understood.

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CHAPTER III

DESIGN AND METHODOLOGY

The main thrust of this study was to obtain a projection of how feasible goal and objective analysis will be and if expenditures can be tied into a system to provide the impetus for increasing decision-making capabilities. This purpose was researched by providing participants with background examples from which the participant provided written feedback evaluating the concepts concerned.

The research was designed to be descriptive in nature and inferential statistical analysis was deemed to be inappropriate for numerous reasons, among which are: limited sample due to the availability of qualified participants, limited time of participants for the study, and futuristic aspect of the study.

Jury of Experts

The participants making up a jury of experts included public school K-12 administrators presently employed in their profession with previous administrative experience and expertise in the area of finance of K-12

education within the State of Michigan. All participants had achieved a minimum of a doctorate in the field of education.

A group of ten was selected to participate in the study. The selection of the participants was limited to those who met the basic criteria and were willing to participate completely in the project as constrained by the expertise of the researcher's committee to identify qualified participants. One of the ten selected was traveling during the time the study was being conducted and participated only as a passive observer. The group therefore was narrowed to nine members.

Instrumentation

An introductory model was developed by the researcher taking advantage of the extensive review of the literature for each of the four research questions. This model or example focused the participant's attention on the substance of development of the concept which the research question sought to get at, bringing the participant to the pinnacle of present development and challenging him to project future developments that might be expected to occur. The participant was asked to respond to the example in one open-ended response and respond to the concept in a separate open-ended response (see Appendix B). The two-question approach was used to avoid

entangling the conceptual analysis with that of a crude model or example.

From the open-ended questionnaire the researcher reproduced in their entirety the responses to the conceptual analysis of each of the four questions. This provided each question with nine responses. The nine responses for each question were in a random fashion so that the response in item three, for example, of each of the questions was not the same respondent. A one-to-seven scale was provided below each response for the participants to indicate their degree of agreement or disagreement with the individual responses for each question. In addition, a blank was provided preceding each response, which was to be used by the respondent to rank-order the statements. (See Appendix D.) This was provided so that in the unlikely case that many items received all positive or all negative responses there would be a means to obtain at least a minimal difference.

Treatment

Introduction

Initially, the Delphi Technique was used to obtain response to the instrument. Procedures of the Delphi Technique were followed until the completion of Round Two, at which time the procedure was modified and face-to-face interaction was used to fit the individual needs of

this particular study. Some background about the Delphi Technique as it applies to obtaining expert opinion about the future is appropriate, since it is a more recent technique of conducting this particular type of research.

The Delphi Technique

The Delphi Technique was developed by Olaf Helmer of the Rand Corporation in 1960. Its use in the field of education was clarified by Helmer[1] in 1966. From 1968 to 1972 refining methods of use of the Delphi Technique, as they apply to this type of study concerning expert opinion, were done by Dalkey[2,3] and Dalkey, Brown, and Cochran.[4,5] Numerous studies have been completed in recent years using the Delphi Technique for clarification of goals and objectives. Among the studies are: Adelson[6] and Hudspeth[7]--long-range planning; Anderson[8]--Ohio State Study; Cyphert[9]--The Virginia Study; Jacobson[10]--The Utah State Study; Willard[11]--The Alternative School Study; and Coakwell[12]--The Muskingum, Ohio, Study. An additional bibliography of other uses of the Delphi Technique in long-range forecasting is provided by the Rand Corporation.[13]

According to Macmillan:

> The Delphi technique is a method of eliciting and refining group judgments. The rationale for the procedures is primarily the age-old adage "Two heads are better than one," when the issue is one where exact knowledge is not available. The procedures have three features: (1) Anonymous response--opinions of members

> of the group are obtained by formal questionnaire. (2) Iteration and controlled feedback--interaction is effected by a systematic exercise conducted in several iterations, with carefully controlled feedback between rounds. (3) Statistical group response--the group opinion is defined as an appropriate aggregate of individual opinions on the final round. These features are designed to minimize the biasing effects of dominant individuals, of irrelevant communications, and of group pressure toward conformity.[14]

One of the most perplexing problems when attempting to achieve long-range planning based on projections is lack of a satisfactory amount of information. This is because of a lack of accurate data and/or a model that has been sufficiently tested. This situation is quite normal rather than a rarity. More often than not the way of handling this problem is to defer consideration. The hard data are presented and the decision maker infers what he might, based on his background and experience. In looking at the kinds of information that can play a role in decision making, Macmillan stated that there are roughly three types:

> On the one hand, there are assertions that are highly confirmed--assertions for which there is a great deal of evidence backing them up. This kind of information can be called knowledge. At the other end of the scale is material that has little or no evidential backing. Such material is usually called speculation. In between is a broad area of material for which there is some basis for belief but that is not sufficiently confirmed to warrant being called knowledge. There is no good name for this middling area. I call it opinion.[15]

Macmillan proceeded to point out that the products of judgment, wisdom, insight, and similar intellectual

processes lie not in the realm of speculation and not in the realm of knowledge but in the area of opinion.[16]

There is no objective scale to measure the accuracy of opinion nor is there likely one to develop. However, it can be pointed out that even factual statements are based on value judgments, i.e., opinion, for fact is extrapolated from a feeling that something is true or false. By obtaining opinion from well-qualified decision makers, a true answer may be produced or at least the best possible answer available. A problem emerges when obtaining opinion from groups of experts. It may be that separate groups of experts will come up with separate solutions. According to Macmillan:

> For the analyst using expert opinion within a study, reliability can be considered to play somewhat the same role as reproducibility in experimental investigations. It is clearly desirable for a study that another analyst using the same approach (and different experts) arrive at similar results.[17]

Macmillan produced research findings that concluded that the increase in reliability increases with the size of the group of experts. There is a clear and rapid linear relationship between an n=3 and an n=11 having an approximately .23 to .81 reliability figure, respectively.[18] Groups of less than three tend to be very unrealiable and groups of over eleven tend to gain very little considering the large number of participants required to increase the reliability figure any significant amount.

The next problem that must be confronted is how to obtain group opinion. Macmillan stated:

> The traditional way of pooling individual opinions is by face-to-face discussion. Numerous studies by psychologists in the past two decades have demonstrated some serious difficulties with face-to-face interaction. Among the most serious are: (1) Influence of dominant individuals. The group opinion is highly influenced by the person who talks the most. There is very little correlation between pressure of speech and knowledge. (2) Noise. By noise is not meant auditory level (although in some face-to-face situations this may be serious enough) but semantic noise. Much of the "communication" in a discussion group has to do with individual and group interests, not with problem solving. This kind of communication, although it may appear problem oriented, is often irrelevant or biasing. (3) Group pressure for conformity. The experiments of Asch demonstrate in dramatic fashion the distortions of individual judgment that can occur from group pressure.
>
> In experiments at RAND and elsewhere, it has turned out that, after face-to-face discussion, more often than not the group response is less accurate than a simple median of individual estimates without discussion.[19]

Procedure

Consideration was given to conclusions drawn by various research findings and review of literature. Although the ideal number of participants was eleven or more, this study was constrained in part because of the inability to locate participants qualified to participate within the time frame of the study. To also support the conclusion that it was desirable to hold the number of respondents to a minimum, Thompson stated:

> Unless the number of participants in a Delphi exercise is extremely small, designing verbal feedback always

> poses a dilemma. If one includes all comments from all participants, the volume of feedback rapidly becomes prohibitive and its function self-defeating.[20]

To obtain the most out of the participants, it was decided to obtain two rounds of Delphi responses and then meet to insure that misunderstandings of the study could be eliminated and a consensus arrived at should these misunderstandings distort the responses previously. Penfield supported this use of the Delphi technique when he reported:

> The two groups which functioned under alternated treatments of Delphi and face-to-face interaction achieved their most significant gain after the Delphi treatments.[21]

In keeping with Delphi technique procedures, the first questionnaire and a cover letter (Appendices A and B) explaining what it was that the respondents should do, was mailed. Prior to that time all participants had been contacted by phone to confirm their willingness to participate fully in the study. Upon receipt of the completed first questionnaire by the researcher, the second instrument was constructed and mailed out with a cover letter (Appendices C and D), again informing participants of their task. After these questionnaires had been returned by all participants to the researcher, a meeting was initiated where a discussion of each research question was completed.

Analysis

Analysis of the data generated was descriptive. Summation, percentages, means, and comparison were the general concepts used for analysis. Each research question was analyzed separately and inferences made from the data collected. The purpose of such analysis was to determine meaningful differences between the responses and to report how these differences pertain to the following research questions:

1. Can a system of classification of goals/objectives into a hierarchy of order provide management with information to improve decision making?

2. Will a modified classification of expenditure accounts provide a more pure representation for improved decision making?

3. Can educational goals/objectives be effectively associated with an expenditure for improved decision making?

4. Can a system of associating expenditures with goals/objectives be effectively used with computer technology to provide a more effective decision-making tool?

Footnotes--Chapter III

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CHAPTER IV

FINDINGS AND CONCLUSIONS

This chapter will present the data in sequence as they pertain to the research question. Interpretation and conclusions will be drawn from the data and presented. Implications of the conclusions in addition to recommendations will be discussed in Chapter V.

Inferential statistics are not used in the analysis of findings for reasons put forth in Chapter III. Elements of descriptive statistics such as summation, means, percentages, ranking, and grand means (mean of means) are used to condense data into a more usable form. A table of data is provided for each of the research questions. Each table consists of three distinct figures.

Part A of each table presents the number of the open-ended answers to the appropriate research question (see Appendix D) in a vertical sequence and the respondent's identification number across the horizontal axis. Numbers in the chart contain a number between 1 and 9, indicating the ranking given by each respondent for the appropriate research answer. The total ranking for each item is summed and a ranking is made which indicates the overall ranking of the item.

Part B in each table presents the number of the open-ended answer to the appropriate research question (see Appendix D) in a vertical sequence and the rating of each item by the participants. Numbers in the chart contain a number between 1 and 7, indicating the amount of agreement and disagreement with the numbered statement, respectively. A mean of the rankings is provided and a ranking for each item is determined by the mean. The percentage of participants responding either a 1, 2, or 3 indicating agreement is shown in the appropriate column. The percentage of participants responding a 4 indicating neither agreement nor disagreement is shown in the adjacent column. The last column shows the percentage of participants responding either 5, 6, or 7 indicating disagreement with the statement.

Part C shows the mean response of each participant's ranking in Part B along with a grand mean of all participants. This provides an index against which the individual participants' means can be compared to indicate if the participant responded overall more positively or negatively than the mean of the group.

In addition to the data presented in the chart, the statements made by the participants when they attended the meeting will be produced in summary form in sequence as they apply to the respective research question.

Research Question One: Can a System of Classification of Goals/Objectives Into a Hierarchy of Order Provide Management With Information to Improve Decision Making?

Respondent Meeting Summary

1. A clear, concise statement of definition of goals and objectives must be developed.
2. Words such as internalized are too abstract.
3. Objectives must be consistent with developed goals.
4. Breakdown to the first level of goals is fine but breaking into subgoals and objectives is too cumbersome to be of use.
5. Statement and identification of goals would be valuable information for an administrator to have.
6. A hierarchy should be simple and more easily understood.

Meeting participants concurred that the information provided by a hierarchy of goals/objectives would be valuable for an administrator to have. They voiced the need to be simple in form and concise in definition.

Data Analysis

To extrude the essence of the data reported in Table 1, a three-way examination of sections of the data will be presented. Part B of Table 1 shows the following

Table 1.--Responses to Research Question One.

Part A. Ranked Statements, 1-9 scale

Question 1-1	Respondent Number 1	2	3	4	5	6	7	8	9	Sum	Rank
1)	5	2	3	2	2	5	7	4	5	(35)	2
2)	6	9	8	3	8	8	1	1	9	(53)	8
3)	7	1	7	9	4	6	8	2	6	(50)	7
4)	9	5	1	1	7	7	2	8	4	(44)	4
5)	8	3	2	4	6	1	5	3	1	(33)	1
6)	3	7	5	8	5	2	6	6	3	(45)	5
7)	4	6	4	7	3	3	3	5	2	(37)	3
8)	2	4	9	5	1	4	4	9	8	(46)	6
9)	1	8	6	6	9	9	9	7	7	(62)	9

Part B. Agree/Disagree, 1-7 scale

Question	Respondent Number 1	2	3	4	5	6	7	8	9	Mean	Rank	Percentage 1-3	4	5-7
1)	4	1	2	1	3	3	4	4	3	(2.77)	5	67	33	0
2)	4	3	4	2	1	7	1	1	5	(3.11)	7	56	22	22
3)	4	1	4	1	5	4	5	4	5	(3.66)	9	22	45	33
4)	5	1	1	1	4	3	2	4	3	(2.66)	4	67	22	11
5)	4	1	1	1	6	2	3	4	1	(2.55)	3	67	22	11
6)	3	4	1	2	1	1	3	4	2	(2.33)	2	78	22	0
7)	4	3	1	2	1	1	2	4	1	(2.11)	1	78	22	0
8)	4	3	5	3	1	1	2	5	3	(3.00)	6	67	11	22
9)	2	3	3	3	4	4	5	4	3	(3.44)	8	56	33	11

Part C. Respondent Means

(1)	(3)	(5)	(7)	(9)
3.77	2.44	2.88	3.00	2.88

(2)	(4)	(6)	(8)
2.22	1.77	2.88	3.77

Grand Mean = 2.85

three statements to have no disagreement by any of the participants:

1. The separation of goals and objectives into a hierarchy is going to be a vital necessity in the future to provide educational administrators information upon which to base decision making.

6. Positively.

7. Conceptually, I can accept the task of "sorting out" the goals and objectives of the educational enterprise.

These three statements provide evidence that the conceptualization of a hierarchy is acceptable and needed in the future to provide better decision making.

Statements 4, 5, and 9 have only one participant disagreeing with the statement. The three statements appear below.

4. It is an essential skill in decision making.

5. The task is an important one and should prove extremely helpful. It is time to end the confusion and misuse of the several terms involved. Placing in a hierarchy makes much sense to me.

9. The goals would become long range, with little immediate feedback. Objectives would become more short range with immediate feedback that, when accomplished, would obtain the goals.

Statements 4 and 5 provide a similar view of what the first group of three statements indicated. These statements seem more specific and less futuristic in content, which may account for the one participant's disagreement with the statement. However, when comparing statements ranked 1 through 5 in Part B and statements ranked 1 through 5 in Part A, it is discovered that the same five answers

are ranked within both. This indicates some agreement between the individual responses of Parts A and B. Statement number 9, while having only a small amount of disagreement, is ranked last in Part A. This may be explained by taking a closer look at the response (Appendix D, Question 1-1). While participants tend to agree with the statement, it is obvious that the answer is not directly related to the question, which may account for its extremely low ranking.

Statement number 3 is the only statement having less than 50 percent agreement and the largest amount of disagreement. The statement is:

> 3. Such a hierarchy is essential if we are going to bring necessary change to the educational enterprise. Until such a breakdown is accomplished we may know what has to be done, but be unable to set up a delivery system.

Since educational administrators are assigned the task of operating a delivery system on a day-to-day basis, it is not surprising that there may be significant disagreement with the statement above.

Part C, indicating the respondent means as compared to the grand mean for the responses to question one, indicates nothing conclusive.

Research Question Two: Will a Modified Classification of Expenditure Accounts Provide a More Pure Representation for Improved Decision Making?

Respondent Meeting Summary

1. The accounting system has too many accounts to deal with and an attempt to provide simplification would be too time consuming for the average district.
2. There is presently too much accounting information to allow an administrator effective use.
3. A modified system would be too hard to implement.

Participants indicated that while the present accounting system was very difficult to work with, it would be a very difficult task to condense information. Respondents further indicated that while a modified system is desirable, implementational complexity would preclude individual districts from doing it.

Data Analysis

A three-way examination of sections of the data will be presented. Table 2 will be referred to. Part B of Table 2 indicates the following two statements have no disagreement by any of the participants.

2. Such a classification would obviously make it possible to place a better definition of expenditures per program and assist in building some type of decentralized accounting system both by building and program.

Table 2.--Responses to Research Question Two.

Part A. Ranked Statements, 1-9 scale

Question 2-1	Respondent Number 1	2	3	4	5	6	7	8	9	Sum	Rank
1)	2	3	4	7	9	1	9	2	3	(40)	3
2)	3	6	1	2	2	2	4	3	2	(25)	1
3)	8	2	3	4	3	3	3	1	4	(31)	2
4)	7	1	5	3	7	7	5	5	5	(45)	5
5)	5	8	8	1	1	8	2	8	1	(42)	4
6)	9	5	7	5	4	4	8	4	6	(52)	7
7)	4	9	9	9	6	9	1	9	9	(65)	9
8)	6	7	6	6	5	5	6	7	7	(55)	8
9)	1	4	2	8	8	6	7	6	8	(50)	6

Part B. Agree/Disagree, 1-7 scale

Question	Respondent Number 1	2	3	4	5	6	7	8	9	Mean	Rank	Percentage 1-3	4	5-7
1)	4	1	3	4	7	1	5	1	1	(3.00)	7	56	22	22
2)	4	2	1	1	1	1	3	1	1	(1.66)	1	89	11	0
3)	7	1	1	2	1	2	2	1	2	(2.11)	2	89	0	11
4)	6	1	2	2	4	3	3	2	2	(2.77)	5	78	11	11
5)	5	4	4	1	1	5	2	4	1	(3.00)	7	45	33	22
6)	7	1	3	3	3	1	5	2	2	(3.00)	7	78	0	22
7)	4	7	6	3	4	6	1	7	5	(4.77)	9	22	22	56
8)	5	3	3	1	2	2	4	2	2	(2.66)	4	78	11	11
9)	2	1	2	2	3	2	4	2	2	(2.22)	3	89	11	0

Part C. Respondent Means

(1)	(3)	(5)	(7)	(9)
4.88	2.77	2.88	3.22	2.00

(2)	(4)	(6)	(8)
2.33	2.11	2.55	2.44

Grand Mean = 2.8

9. As we get more mandatory educational programs and limited income the future will dictate a comprehensive cost accounting system that will allow for decision making based on results and upon expenditures.

Participants indicated that better measurement capability would evolve from a modified classification system.

Statements 3, 4, and 8 have only one participant in disagreement with the statement. These statements are:

3. It will permit a more precise measurement of expenditures item for item, than most of us have now.

4. This Management Information Format can have a very positive effect on educational decision making, especially in the area of Planned Programmed Budgeting. This type of information gained from a proposed modified classification of expenditures will be a "must" within ten years.

8. The detail provided in the modified accounting system will facilitate the costing out of alternative programs which will greatly assist in making rational budgetary decisions.

In Part B of Table 2 it is interesting to note that the same participant is the only one who objected to and disagreed with statements 3, 4, and 8. If this participant's rating is put aside, then the ratings of responses 2, 3, 4, 8, and 9 take on similar characteristics with total agreement. It is worth noting that if participant number one's response is disregarded, responses 2 and 3 are ranked 1 and 2, respectively, in Parts A and B. This would indicate that responses 2 and 3 are both high in ranking and high in agreement of participants. Even

without eliminating participant one, some general conclusions may be drawn from both groups discussed. At the very least, it can be concluded that a modified classification system will provide a better-defined representation.

Statement numbers 5 and 7 provide amounts of agreement less than 50 percent. The statements are as follows:

> 5. This one is difficult to project because many boards of education and administrators continue to make decisions based upon emotion and pressure rather than upon objective data. A modified classification of expenditures would tend to provide much detailed data for administrators and boards. Administrators may be quite sensitive to giving such detail to boards of education. Further, great care needs to be taken to include other objective and subjective data into the decision making besides finances. In my own experience when I made the detailed information available to a broad spectrum of people the tendency to make decisions somewhat the same as in the past prevailed.
>
> 7. Limited.

Statement number 5 in Part A of Table 2 indicates a ranking of 4, which is quite high. However, in Part B item 5 has over 50 percent either disagreeing or uncommitted. It may be suspected that item 5 is such that it covers a wide variety of answers, some of which the participants agree with and some they disagree with. This would account for the high ranking in Part A while being rather low in Part B. Statement number 7 is clearly ranked last and is also disagreed with by over 50 percent of the participants. Clearly, a modified classification system to

improve decision making does not have only limited value according to the respondents.

Part C indicates a considerable discrepancy between the mean response of participant number one and the mean of the group. The mean response of the participant is 4.88, while the grand mean of the respondents including him is 2.8. Several reasons may account for this. The participant may have a weak background and understanding of the accounting system or may have a good background and also be of the opinion that a modified classification would have little effect on decision making. From inspection of participant one's other responses, it may be speculated that his response to the question was answer number 9 because that is the only statement he agrees with. Upon looking into item number 9, it is discovered that it is one of the few items which has general agreement in this area. The opinion of the respondent that the future will determine the answer to this question is clearly shared; however, other respondents see more implications.

Research Question Three: Can Educational Goals/Objectives Be Effectively Associated With an Expenditure for Improved Decision Making?

Respondent Meeting Summary

1. Based on goals, certain programs might be looked at more closely.

2. Goal development coupled with cost is too difficult to look at presently and the two elements need independent development.
3. This may give administrators a means of looking at the results of cutting costs.

At the meeting, respondents were generally positive to the association of goals/objectives with an expenditure. It was viewed as a method upon which decisions could be made. It was the opinion of the participants that a solid base of goal/objective development must come before trying to associate it with an expenditure.

Data Analysis

A three-way examination of the data presented in Table 3 will be presented. Part B of Table 3 shows the following three statements to have no disagreement by any of the participants:

3. Another version of PPBS. Will be very important! Dollar pinch, collective bargaining, mandatory legislation plus demands for "accountability" make this approach a must in educational decision making.
4. More and more of this application will be carried out in the future.
7. The task of relating educational costs to the multitude of goals and objectives would provide significant information for decision making only if agreement exists on the actual charging of costs to the specific goals and objectives.

These three statements provide evidence that not only can goals/objectives be associated with expenditures but this

Table 3.--Responses to Research Question Three.

Part A. Ranked Statements, 1-9 scale

Question 3-1	Respondent Number 1	2	3	4	5	6	7	8	9	Sum	Rank
1)	7	6	8	9	8	8	9	2	7	(64)	8
2)	8	7	7	1	1	4	3	5	1	(37)	1
3)	2	1	5	4	4	5	5	6	6	(38)	2.5
4)	3	4	6	3	5	6	6	1	5	(39)	4.5
5)	9	5	3	5	3	1	4	7	4	(41)	7
6)	6	9	9	8	9	9	1	9	9	(69)	9
7)	4	8	4	2	2	2	2	8	8	(40)	6
8)	5	2	2	7	6	3	7	4	2	(38)	2.5
9)	1	3	1	6	7	7	8	3	3	(39)	4.5

Part B. Agree/Disagree, 1-7 scale

Question	Respondent Number 1	2	3	4	5	6	7	8	9	Mean	Rank	Percentage 1-3	4	5-7
1)	5	2	4	3	4	7	7	1	2	(3.88)	8	45	22	33
2)	5	2	3	2	1	5	2	2	1	(2.55)	4	78	0	22
3)	3	1	2	2	4	4	4	2	2	(2.66)	5	67	33	0
4)	4	1	2	1	3	3	4	1	1	(2.22)	1.5	67	33	0
5)	5	2	3	1	2	1	3	3	1	(2.33)	3	89	0	11
6)	6	7	6	2	1	5	1	7	6	(4.55)	9	33	0	67
7)	4	2	1	2	1	3	1	4	2	(2.22)	1.5	78	22	0
8)	4	1	5	2	4	2	5	2	2	(3.00)	7	56	22	22
9)	3	1	3	2	4	2	6	2	2	(2.77)	6	78	11	11

Part C. Respondent Means

(1)	(3)	(5)	(7)	(9)
4.33	2.66	2.11	1.88	2.66

(2)	(4)	(6)	(8)
3.22	3.66	2.11	3.55

Grand Mean = 2.9

will be intensified with the passing of years. However, the concept is constrained by the lack of agreement regarding uniform procedures for charging costs to specific goals/objectives.

Statements 5 and 9 have only one participant in disagreement. The statements follow:

5. Goals and objectives as related to costs have, and will have, a significant role in educational decision making. The relationship will not be direct however. Because the basic costs of school operations (salaries, utilities, insurance, etc.) are so high in comparison with funds available for discretionary spending, I would assume that major use of such a model as described in the study would involve making decisions between alternative objectives based on estimated cost effectiveness.

9. In the future the establishment of goals and objectives and the cost of meeting these will become most imperative in educational decision making.

As Part A in Table 3 shows, there is not much difference in total between statements ranked between 1 and 7. This carries through to Part B, where no large difference between ranking occurs until the statement ranked 8. One exception to this is item 2 in Parts A and B. Item 2 ranks first in Part A and fourth in Part B, indicating an overall high ranking. However, in Part B the response has 22 percent of the participants in disagreement with the statement. A closer look at item 2 of question 3-1 in Appendix D provides some clues. The answer has entangled the conceptual response with a response to the example provided. This could cause the respondents who disagreed

with the statement made about the example provide an unfavorable evaluation.

Statements 1 and 6 have less than 50 percent of the participants in agreement with the response. The items are listed below.

1. The role of goals and objectives as related to cost in educational decision making will be the most important variable.

6. Limited.

The conclusion reached by looking at these two statements together is that goals and objectives as related to cost will have more than a limited effect on decision making, but it is not the most significant variable used in decision making.

Part C of Table 3 shows nothing conclusive about individual respondent means as compared to the grand mean.

Research Question Four: Can a System of Associating Expenditures With Goals/ Objectives Be Effectively Used With Computer Technology to Provide a More Effective Decision-Making Tool?

Respondent Meeting Summary

1. The computer is a necessity but resistance by small districts will continue.
2. To program on a computer, goal and cost information would be extremely cumbersome and information generated may not provide any better decision.

3. Administrators would be hesitant to release information to board members because information may be misunderstood.
4. Tying a program to the present accounting system via computer with its large number of accounts would be extremely difficult.

Although there was general agreement by the participants that the computer will be used in the future to retrieve information, they were hesitant to project that the computer would provide a more effective decision-making tool if used to associate a goal with an expenditure. It will be a slow process, with many reasons for not using such a system.

Data Analysis

Data reported in Table 4 will be separated into three categories. Part B of Table 4 provides the first of the three categories--statements providing no disagreement by any of the participants. There are two statements in this category:

8. The computer must be utilized as a retrieval system in the future for associating expenditures with a goal or an objective. Time will not permit this information to be derived in any other manner.
9. If decisions are to be made on a current basis, a computer will be necessary in gathering the information and reporting it to administration and boards to make these decisions.

Table 4.--Responses to Question Four.

Part A. Ranked Statements, 1-9 scale

Question 4-1	Respondent Number 1	2	3	4	5	6	7	8	9	Sum	Rank
1)	3	6	9	8	6	8	1	2	8	(51)	7
2)	4	9	8	9	7	9	2	1	9	(58)	8
3)	5	7	1	7	8	1	3	9	1	(42)	4.5
4)	6	2	2	1	1	2	4	7	6	(31)	1
5)	7	8	7	3	9	3	9	6	7	(59)	9
6)	8	1	3	6	3	4	5	8	3	(41)	3
7)	9	3	6	5	2	5	6	5	2	(43)	6
8)	2	4	4	4	4	6	7	3	4	(38)	2
9)	1	5	5	2	5	7	8	4	5	(42)	4.5

Part B. Agree/Disagree, 1-7 scale

Question	Respondent Number 1	2	3	4	5	6	7	8	9	Mean	Rank	Percentage 1-3	4	5-7
1)	3	1	2	6	1	4	1	1	6	(2.77)	8	67	11	22
2)	5	1	6	4	1	7	1	1	6	(3.55)	9	45	11	44
3)	5	1	1	2	4	1	1	4	1	(2.22)	6	67	22	11
4)	5	1	1	2	1	1	1	3	1	(1.77)	3	89	0	11
5)	5	1	4	1	4	1	2	3	1	(2.44)	7	67	22	11
6)	5	1	1	2	1	1	1	3	1	(1.77)	3	89	0	11
7)	5	1	3	2	1	1	1	3	1	(2.00)	5	89	0	11
8)	4	1	1	3	1	1	1	3	1	(1.77)	3	89	11	0
9)	2	1	2	2	1	1	1	3	2	(1.66)	1	100	0	0

Part C. Respondent Means

(1)	(3)	(5)	(7)	(9)
4.33	2.33	1.66	1.11	2.22

(2)	(4)	(6)	(8)
1.00	2.66	2.00	2.66

Grand Mean = 2.22

The role of the computer is concluded by participants to be one of rapid retrieval of information. In addition, respondents were of the opinion that if goals and objectives were going to be identified with an expenditure then the computer is a necessity.

Statements 3 through 7 have only one respondent in disagreement with them. The statements are:

3. The answer to this one seems simple. The computer is an absolute essential ingredient. I have no question whatsoever that a good program with the computer can easily do the task you are suggesting. I have worked with a computer in accounting for ten years and more specifically, in the last three to four years, in program budgeting. It is an extremely important tool providing this kind of data and it is very helpful in decision making.

4. The computer will be important as an information gathering and analyzing tool.

5. The proposed chart of accounts to be used after July 1, 1976, for financial accounting dovetails nicely with a computer format as suggested. Speaking for one school system, we will develop much more detailed format than that called for in state budget format. Probably be similar to suggested computer format.

6. The computer has and will have an overwhelming role in associating expenditures with goals and objectives. That kind of massive data arrangement can only be accomplished by use of EDP technology.

7. Because of the multitude of data to be recorded and accumulated for retrieval and analysis in several management information report formats, access to a computer with considerable core is an absolute essential.

In Part B of Table 4 it is interesting to note that the same participant is the only one who objected to and

disagreed with statements 3 through 7. If this participant's evaluation is set aside, then responses 3 through 9 take on similar characteristics. Even without eliminating participant number one, some general conclusions can be drawn from the two categories. The computer will play an important role in the retrieval of information for improved decision making. If goals and objectives are associated with expenditures, then the computer must be a given.

Statement number 2 from Table 4, Part B is the only statement that was evaluated at less than 50 percent agreement. The statement is:

> 2. I see every reason to believe we are headed in this direction but its application in small school districts will probably remain very limited.

This statement is disagreed with by 44 percent of the participants. It is also ranked eighth in Part A, indicating it was considered a poor response to the question. It is evident from observation that there is considerable question in the minds of many of the participants about the role of the computer.

Part C indicates a considerable discrepancy between the mean response of participant number one and the mean of the group. The mean response of the participant is 4.33, while the grand mean of the respondents including him is 2.22. It is apparent that the respondent views the use of the computer as an information gathering and reporting instrument. From inspection, it can be seen in Part B

that he probably evaluated item 9 the highest because it was his own idea. If this is the case, it should be pointed out that item 9 is the only item with 100 percent agreement. The opinion by the respondent that the computer will be used for the purposes discussed is clearly shared; however, others see implications going beyond the gathering and reporting function.

Summary of Findings and Conclusions

Research Finding--Question One

A system of classification of goals/objectives into a hierarchy can provide management with information to improve the decision-making process. Conceptualization of a hierarchy is desirable and needed to provide better decision making. Clarification of definitions is needed in the development of a hierarchy to eliminate confusion and prevent misuse of terminology. While a hierarchy is desired to help improve decision making, it is not a prerequisite for effective educational decision making.

Research Finding--Question Two

A modified classification of expenditure accounts will provide a more pure representation; however, whether it would improve decision making is dependent upon implementation. While a modified system is desirable, implementational complexity precludes individual districts from doing it. Presently there is information overload at the

accounting level, making implementation of a modified system an extremely complex task. While the outcome of a modified classification system is desirable, the problems associated with its implementation could constrain or stifle its development. Limited financial resources in the future may force implementation of a system of costing more immediately.

Research Finding--Question Three

Educational goals/objectives can be effectively associated with an expenditure for improved decision making providing that common agreement exists on how to charge costs off to specific goals and objectives. Goals and objectives as related to cost will have more than a limited effect on decision making, but it will not be the most important variable.

Research Finding--Question Four

It is possible that a system of associating expenditures with goal/objectives can be effectively used with computer technology to provide a more effective decision-making tool. A computer system of retrieval will be used in the future to associate an expenditure with a goal or objective for reporting. Its application in a small district is an issue yet to be decided.

Conclusions

In moving toward a more systematized development in the area of educational expenditures, it is paramount that each increment of the system be developed with great care. Painstaking, exhaustive definitions must be developed. Agreement must be conceived on how to associate costs to specific goals and objectives. Implementation must be such that it does not frustrate personnel or cause valuable loss of time and resources. Finally, the system must be such that it can be used by large districts as well as smaller districts.

Chapter V will discuss the implications of the findings and conclusions and make recommendations for further study.

CHAPTER V

IMPLICATIONS AND RECOMMENDATIONS

There are many voids to be filled before a system of associating a goal or objective with an educational expenditure will complete its development. Although the most sophisticated may see a definite advantage to using goal/objective analysis to aid in making better decisions, they also see many of the pitfalls to this endeavor. What the future holds is difficult to project. There are some generally accepted predictions which are shared presently by most administrators. Among them is the fact that education is going to have to compete more vigorously in the future for resources than in the past. Another prediction is that proof of achievement is going to be more and more demanded before the public is going to willingly commit more resources to education.

Specific Implications of Research Questions

Research question number one attempted to provide an answer to whether a system of goal/objective hierarchy would be a valuable tool to have to improve the decision-making process. Although there was general agreement that this was desirable, respondents implied that the process

would be very difficult and misunderstandings were bound to occur because of lack of common definition. The important implication that surfaced in regard to this statement was that because of difficulty the idea should not be discarded but the best possible definitions should be developed.

Research question two attempted to provide an answer to the question of whether the accounting system should be modified to improve decision making. The implication obtained from the data and the meeting was that there needs to be conversion of accounting data into a usable format. This could not be done at the local level, but needs to be developed at a higher level of school administration.

Research question three attempted to provide an answer to the question of whether educational goals/objectives could be associated with an expenditure to improve decision making. Implications here were that standardized methods of charging costs to specific goals were necessary. Even with this standardization the information generated would be only as valuable as the administrator's ability to integrate it with other inputs upon which to base decision making.

Research question four attempted to provide an answer to the question of whether a computerized system would provide a better decision-making capability.

Retrieval is going to have a profound effect on decision making in the future. As districts are able to retain information over a period of years there will exist the capability to analyze historical information and decisions basing future decisions to some degree on what has occurred in the past.

In summary, the group of administrators providing input for the research inferred that the concepts were in fact going to be important in the future and implementation to some degree would occur.

General Implications

From this study it is clear that the perception of this group of expert practicing administrators is that the application of goal/objective analysis as applied to educational expenditures is somewhere between being very limited in use to being the ultimate tool in decision making. Throughout the study, statements using "might be" are ranked quite high. In addition, when respondents were together in the same room, the discussion centered primarily around why a system would not work even though all seemed in general agreement that the end result would be desirable. Problems with the education of personnel seemed to be overwhelming when attempting to implement a new system. The main concept of simplicity was brought forward continuously, indicating reluctance by field administrators to attempt implementation of anything but

the simplest of procedures involving their personnel. Another word which came up frequently during the meeting which did not surface when evaluating the concept during the written feedback method was the word "cumbersome." It was implied that even if the district could be convinced that a method of association of goals/objectives with expenditures could be valuable there is sheer frustration when the process of slowly, methodically breaking the present system apart to achieve the outcome is discussed. In other words, the process is too cumbersome.

There are several implications which can be made from taking an overall view of the research. It is evident that there is a need to develop a hierarchy of goals/objectives and it is desirable to associate it with an expenditure through a computerized system. However, the local districts have neither the staff expertise nor the time to develop such a system. They may be willing to use a tool to determine their own particular goals/objectives and even to rank them but this tool will have to be developed external to the particular district. In addition, districts are willing to use such a system only to the extent that the system is simple to provide input to and that it fits into the general state and federal reporting network.

However, the day of simple analysis of school expenditures is gone. Because of the many variables which

come into view it is necessary to develop a highly sophisticated, thorough system to give administrators a better means of making decisions. While there exist many within the ranks of educational administrators who have a grasp of where the profession is headed because of their exposure to systems views of the educational process, there are also many who have little or no understanding of systems. This gap in understanding is starting to be bridged by institutions of higher education. However, it will take many years before a majority of the practicing administrators either develop systems skills or are replaced by those having the skills. A challenge presently exists within colleges of educational administration to presently shoulder the burden of re-educating practicing administrators, keeping them up to date with present-day and future effects of systems.

An immediate problem exists for educators to grapple with. This problem is how to implement a systems approach, given the personnel and present district philosophy.

Because of the need for a complex system and the desire for simplicity at the local level, it appears that a larger unit of school administration will have to develop, process, and implement the system. A pool of experts will have to be maintained and a coordinating staff to act as a go-between will have to be developed. Information will flow from the local district to a processing point and back

to the local district to be considered as one of many variables upon which to base decisions.

Recommendations

The following recommendations are made, based upon the conclusions and implications of this study:

1. An investigation into the development of common definitions of terminology associated with goals and objectives needs to be developed.

2. A method of categorizing goals and objectives into a hierarchy to differentiate the two and levels of each needs to be developed.

3. A system of modification within the accounting area to provide a smaller number of classified items needs development.

4. A study into the weighting that administrators give to decision making based on goals and objectives needs investigation.

5. A simplified district input program should be developed to be sent to a data-processing center.

6. A simplified output program should be developed to provide administrators with the kind of information upon which decision making would become more accurate.

7. A central region or state-wide organization should be developed to coordinate and handle inputs from districts.

8. Institutions of higher education, specifically departments of educational administration, should implement a program to provide practicing administrators exposure to the process of systems development and instructional processes.

APPENDICES

APPENDIX A

LETTER AND DIRECTIONS

APPENDIX A

LETTER AND DIRECTIONS

December 18, 1975

To:

I am a doctoral candidate in the Department of Administration and Higher Education at Michigan State University. Dr. Alexander Kloster, chairman of my committee, has suggested you as one of a very small, select group of educators who are capable of giving expert opinion in the areas of business and educational administration with insight into the future developments in the areas of goal and objective analysis, accounting, computer applications, and management information needs. He has informed me that he has talked with you briefly and obtained a commitment from you to complete the enclosed questionnaire and meet with others participating in room 408 of Erickson Hall, Michigan State University, East Lansing, Michigan, at 1:30 on the 27th of January, 1976.

Please complete questionnaires I, II, III, and IV and return them to me as soon as possible in the envelope provided. Because of the nature of the study and the method used to evaluate the information generated, I request that you do not discuss the contents with anyone until the meeting on the 27th.

The questionnaire models provided as background material are a combination of several goal models, accounting systems, computer systems, and recent research developments integrated into elements of a management information system for your consideration. They are an attempt to pull together a number of concepts into some sort of workable tool.

Thank you for your time and consideration.

Sincerely,

Paul Kriz

APPENDIX B

INFORMATION AND OPEN-ENDED QUESTIONNAIRE

APPENDIX B

INFORMATION AND OPEN-ENDED QUESTIONNAIRE

INTRODUCTION--SECTION I

One method of viewing educational expenditures is to associate an expenditure with a goal or objective. Research has recently developed a list of widely accepted sets of goals and is presently involved with doing the same for objectives. A necessity exists for the development of a hierarchy of order and a tool to effectively categorize goals and objectives. The following pages consist of:

Page : A list of educational goals developed through extensive research under a U.S. Office of Education Title III grant

Page : Definitions of Goals and Objectives

Page : A Hierarchy of Goals and Objectives

Page : A tool to determine the first-level differentiation between goals and objectives

Page : An example analysis of the goals and objectives on page using the tool on page

Page : A summary

Page : A questionnaire

Please review the materials and succinctly respond to the questionnaire in a few short sentences or a short paragraph.

EDUCATIONAL GOALS*

LEARN HOW TO BE A GOOD CITIZEN

Learn how to respect and get along with people who think, dress, and act differently.

Learn about and try to understand the changes that take place in the world.

Develop skills in reading, writing, speaking, and listening.

Understand and practice democratic ideas and ideals.

Learn how to examine and use information.

Understand and practice the skills of family living.

Learn to respect and get along with people with whom we work and live.

Develop skills to enter a specific field of work.

Learn how to be a good manager of money, property, and resources.

Develop a desire for learning now and in the future.

Learn how to use leisure time.

Practice and understand the ideas of health and safety.

Appreciate culture and beauty in the world.

Gain information needed to make job selections.

Develop pride in work and a feeling of self-worth.

Develop good character and self-respect.

Gain a general education.

---

*Goals are not rank ordered.

DEFINITIONS OF GOALS AND OBJECTIVES

A. A GOAL is a statement or group of statements of what is to be internalized. Its characteristics include difficulty of measurement and delayed rewards.

   1. An EDUCATIONAL GOAL is a statement of what a number of educational program goals provide.
   2. An EDUCATIONAL PROGRAM GOAL is a statement of what is to be internalized as a result of an educational program.

B. An OBJECTIVE is a statement intended either to bring about change in program elements or evaluate instruction. Its characteristics include ease of measurement and immediate rewards.

   1. A PROGRAM OBJECTIVE is a statement intended to bring about change in program elements to improve the effectiveness of the program.
   2. A BEHAVIORAL OBJECTIVE is a statement that is designed to evaluate instruction.

HIERARCHY OF GOALS AND OBJECTIVES

Educational Goal

1. Learn to be a good citizen.

Program Goals

1-a. Develop an awareness of civic rights and responsibilities.	1-b. Develop attitudes for productive citizenship.	1-c. Develop an attitude of respect for personal and public property.	etc.

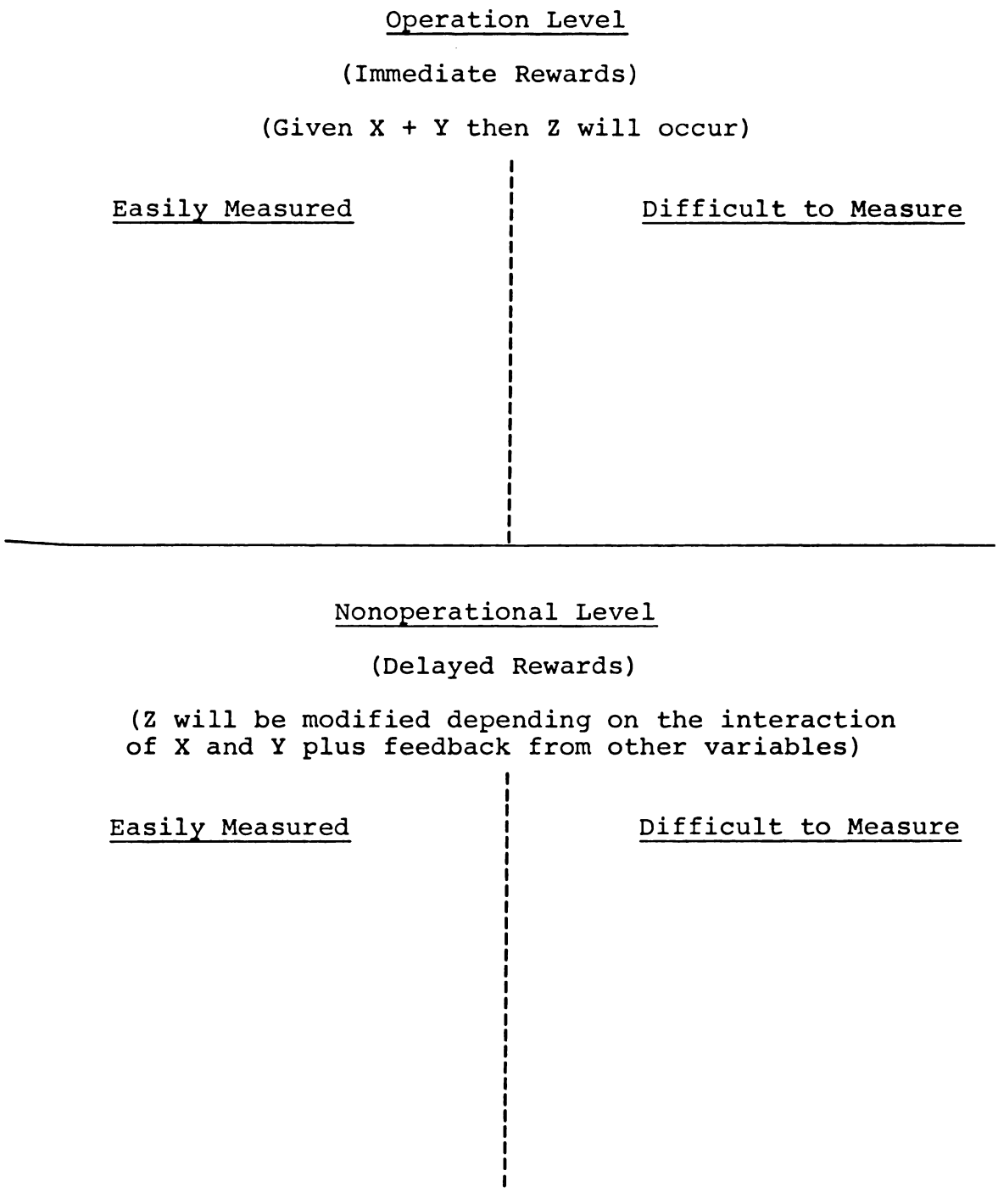
Program Objectives

1. Students will develop a basic knowledge of:	2. Students will develop in depth a knowledge of at least one area of:		etc.
American History	American Government	Social Studies	etc.

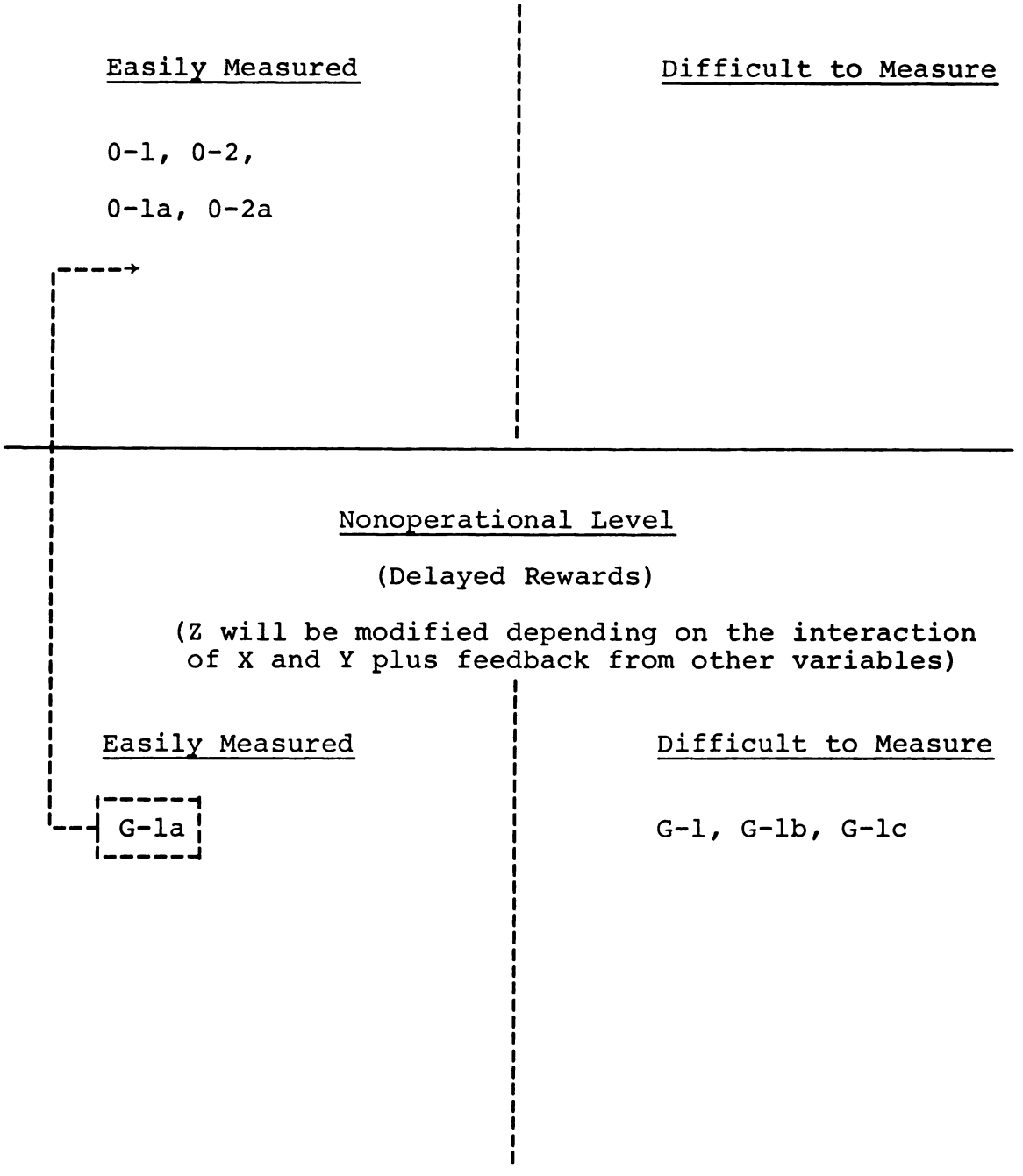
Behavioral Objectives

1-a. Students will list three branches of our democracy as measured by . . .	2-a. Students will demonstrate their understanding of a subject of their choice through submission of a written paper as measured by . . .	etc.

LEVELS OF GOALS AND OBJECTIVES



LEVELS OF GOALS AND OBJECTIVES



SUMMARY

On page it is evident that goal 1-a is really not a goal using the definitions and the evaluation tool. It should be listed as an objective. Objectives should appear in the upper left corner box and goals should appear in the lower right-hand box. Any deviation from this leads to a suspicion that the goal is really not what it purports to be.

This model is the first step which could lead to further delineation of goals and objectives. Implications are many. Several studies have been done recently to determine what percentage of any given course can be identified with a particular goal. Projecting this further, there may be implications for goal costing.

The development of the model is an attempt to provide a background for you and is a unique combination of several models converted to a terminology which hopefully is more familiar to you.

QUESTIONNAIRE--1

Please read both questions before responding. Please respond to both questions using a short, concise statement or statements.

1-1. In the future how do you view the role of separating goals and objectives into a hierarchy to provide educational administrators information upon which to base decision making?

1-2. Project into the future what your view of the model presented in the previous pages is in terms of its applicability to an educational system.

INTRODUCTION--SECTION II

The accounting system as it now exists provides a variety of information. Management information used for decision making is available through the system but does not exist presently in any standard form. On the following pages is a model whereby accounting information could be directly pulled out of the system and placed in such a manner that administrators would have easy access. This could be tied into a computer for periodic retrieval by an administrator. The following pages consist of:

Page : A financial management information format and description

Page : A questionnaire

Please review the materials and succinctly respond to the questionnaire in a few short sentences or a short paragraph.

MANAGEMENT INFORMATION FORMAT

Type of account (expenditure, revenue, etc.)

School identification (by number code)

School type (elementary, middle, added ed., preschool, etc.)

Instructional service type (special education, compensatory education, vocational education, etc.)

Program major (English, math, art, industrial arts, etc.)

Program minor (geometry, calculus, math analysis, computer science, etc.)

Object (salary, consumables, etc.)

Supportive services (health, guidance, social work, psychological, etc.)

Object (salary, consumables, etc.)

Student services (food, athletics, enrichment, transportation, etc.)

Object (salary, consumables, etc.)

QUESTIONNAIRE--II

Please read both questions before responding. Please respond to both questions using a short, concise statement or statements.

2-1. Project what effect a modified classification of expenditures in addition to the general ledger accounting system will have on educational decision making.

2-2. Project what your view of the model presented in the previous pages is in terms of its applicability to an educational system.

INTRODUCTION--SECTION III

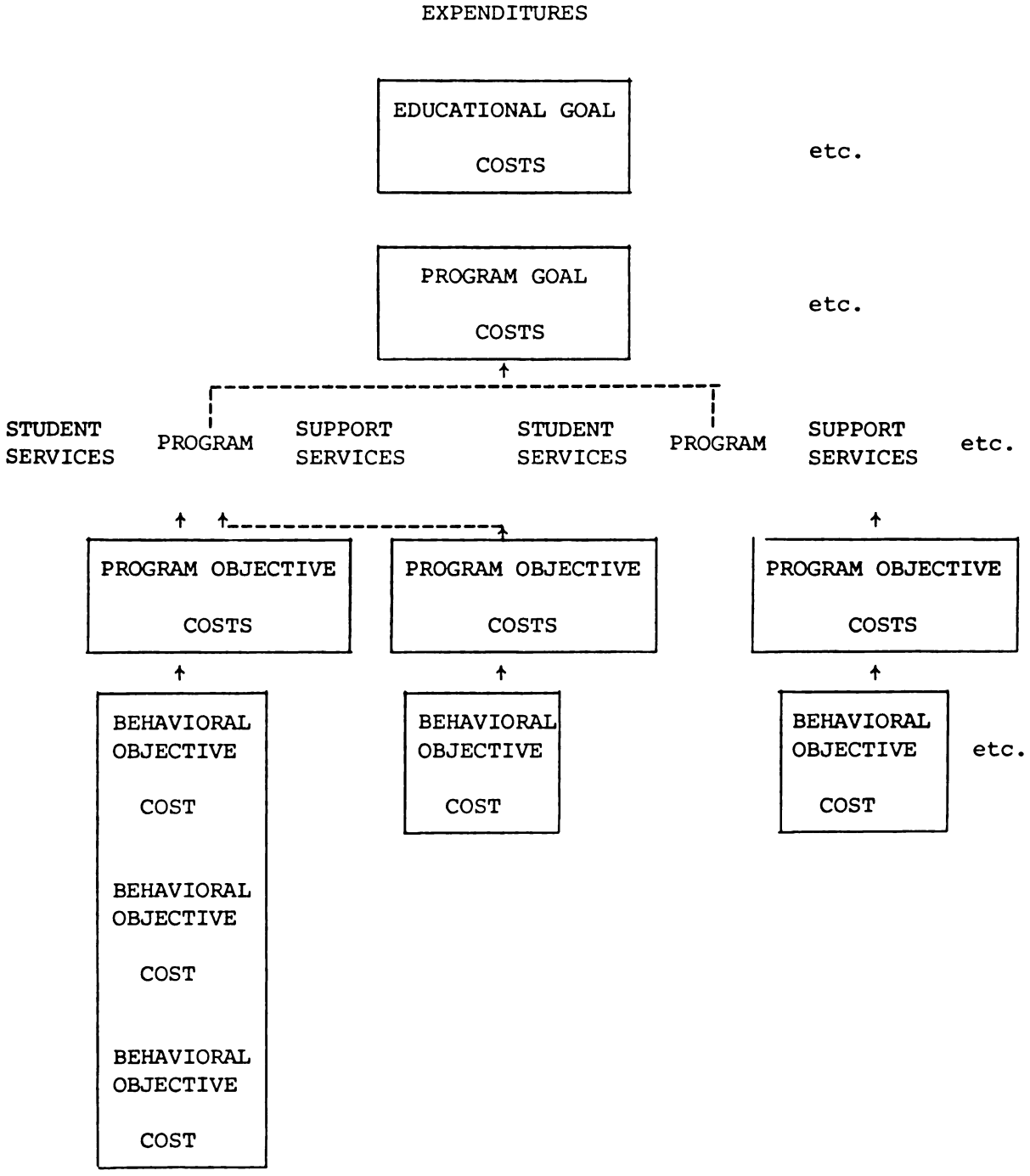
The following pages provide a model of how educational costs might be related to goals and objectives. For purposes of simplicity only goals are looked at since this would be the primary area of concern for administrators. This is another section of a management information system. The following pages consist of:

Page : A local financial information model

Page : A questionnaire

Please review the materials and succinctly respond to the questionnaire in a few short sentences or a short paragraph.

LOCAL FINANCIAL MANAGEMENT INFORMATION



QUESTIONNAIRE--III

Please read both questions before responding. Please respond to both questions using a short, concise statement or statements.

3-1. What do you project the role of goals and objectives as related to cost will be in educational decision making?

3-2. What is your view of the model presented in the previous pages in terms of its applicability to an educational system?

INTRODUCTION--SECTION IV

Given the impact of the computer on education, the following pages consist of an attempt to assign a format to the three models previously set forth to provide a retrieval system. The following pages consist of:

Page : An integrated model converted for computer use

Page : A questionnaire

Please review the materials and succinctly respond to the questionnaire in a few short sentences or a short paragraph.

COMPUTERIZED MANAGEMENT INFORMATION FORMAT*

Type of Account / X

School Identification / XX

School Type / X

Educational Goal / XX

Instructional Service Type / XX

Program Goal / XX

Program Major / XX

Program Objective / XX

Object / XXXX

Behavioral Goal / XX

Program Minor / XX

Object / XX

Supportive Services / XX

Object / XXXX

Student Services / XX

Object / XXXX

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*See page of Section II and page of Section I for description.

QUESTIONNAIRE--IV

Please read both questions before responding. Please respond to both questions using a short, concise statement or statements.

4-1. What do you view the role of the computer will be in the future for associating expenditures with a goal or objective to provide a more effective decision-making tool?

4-2. What is your view of the model presented in the previous pages in terms of its applicability to an educational system?

APPENDIX C

LETTER AND INFORMATION--

SECOND ROUND QUESTIONNAIRE

APPENDIX C

LETTER AND INFORMATION-- SECOND ROUND QUESTIONNAIRE

January 21, 1976

To:

Thank you for your participation in the first round of an investigation into future developments in the areas of goal/objective analysis and educational expenditures. Your response is much appreciated.

Enclosed you will find a questionnaire which is a composite of the responses received. Please take some time to read the responses and indicate your degree of agreement or disagreement with each statement. After you have completed this task please go back through the statements and rank the statements from 1 (most appropriate) to XX (least appropriate). An example appears below:

Rank 7 Agree____:____:_*_:____:____:____:____Disagree

Upon completion please enclose the questionnaire in the envelope provided and either mail it or bring it with you to the meeting, which all participants have committed themselves for, in completed form. As you recall the meeting is scheduled for Tuesday, January 27, at 1:30 PM, in room 408 Erickson Hall, Michigan State University, East Lansing, Michigan.

Once again thank you for taking the time to participate in this project. The difficulty in obtaining opinion from well-qualified educators has been bridged by your cooperation, interest, and prompt response.

Sincerely,

Paul Kriz

APPENDIX D

SECOND ROUND QUESTIONNAIRE

APPENDIX D

SECOND ROUND QUESTIONNAIRE

1-1. IN THE FUTURE HOW DO YOU VIEW THE ROLE OF SEPARATING GOALS AND OBJECTIVES INTO A HIERARCHY TO PROVIDE EDUCATIONAL ADMINISTRATORS INFORMATION UPON WHICH TO BASE DECISION MAKING?

1. The separation of goals and objectives into a hierarchy is going to be a vital necessity in the future to provide educational administrators information upon which to base decision making.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

2. It will be utilized by the few who comprehend and ignored by the majority who do not understand.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

3. Such a hierarchy is essential if we are going to bring necessary change to the educational enterprise. Until such a breakdown is accomplished we may know what has to be done, but be unable to set up a delivery system.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

4. It is an essential skill in decision making.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

5. The task is an important one and should prove extremely helpful. It is time to end the confusion and misuse of the several terms involved. Placing in a hierarchy makes much sense to me.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

6. Positively.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

7. Conceptually, I can accept the task of "sorting out" the goals and objectives of the educational enterprise.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

(continued on the next page)

1-1. (Continued)

Separating goals and objectives into a hierarchy sounds like an interesting theoretical exercise. As such it might have significant value in assisting an administrator to better understand his own decision-making process. The problem is that goals and objectives may not allow themselves to be fitted into nice, neat categories and a procedure to do so may be cumbersome.

Rank_____ Agree____:____:____:____:____:____:____Disagree

8. The role of separating goals and objectives into a hierarchy will in the future be used as an essential skill in decision making.

Rank_____ Agree____:____:____:____:____:____:____Disagree

9. The goals would become long range, with little immediate feedback. Objectives would become more short range with immediate feedback that, when accomplished, would obtain the goals.

Rank_____ Agree____:____:____:____:____:____:____Disagree

2-1. PROJECT WHAT EFFECT A MODIFIED CLASSIFICATION OF EXPENDITURES IN ADDITION TO THE GENERAL LEDGER ACCOUNTING SYSTEM WILL HAVE ON EDUCATIONAL DECISION MAKING.

1. It would allow administrators to decide on programs according to their relative effectiveness and assign resources accordingly.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

2. Such a classification would obviously make it possible to place a better definition of expenditures per program and assist in building some type of decentralized accounting system both by building and program.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

3. It will permit a more precise measurement of expenditures item for item, than most of us have now.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

4. This Management Information Format can have a very positive effect on educational decision making, especially in the area of Planned Programmed Budgeting. This type of information gained from a proposed modified classification of expenditures will be a "must" within ten years.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

5. This one is difficult to project because many boards of education and administrators continue to make decisions based upon emotion and pressure rather than upon objective data. A modified classification of expenditures would tend to provide much detailed data for administrators and boards. Administrators may be quite sensitive to giving such detail to boards of education. Further, great care needs to be taken to include other objective and subjective data into the decision making besides finances. In my own experience when I made the detailed information available to a broad spectrum of people the tendency to make decisions somewhat the same as in the past prevailed.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

(continued on the next page)

2-1. (continued)

6. A good classification of expenditures has and will continue to have an impact of the highest order on educational decision making.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

7. Limited.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

8. The detail provided in the modified accounting system will facilitate the costing out of alternative programs which will greatly assist in making rational budgetary decisions.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

9. As we get more mandatory educational programs and limited income the future will dictate a comprehensive cost accounting system that will allow for decision making based on results and upon expenditures.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

3-1. WHAT DO YOU PROJECT THE ROLE OF GOALS AND OBJECTIVES AS RELATED TO COST WILL BE IN EDUCATIONAL DECISION MAKING?

1. The role of goals and objectives as related to cost in educational decision making will be the most important variable.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

2. This is a most interesting concept. Looking at it purely as it is designed, I think it would have quite an impact. Assuming all programs were designed through objective statements and costs were applied to same, I think there would be a chance for many, many changes in programs resulting. This would not be all bad. I would like the data, but am apprehensive of the work involved to get there.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

3. Another version of PPBS. Will be very important! Dollar pinch, collective bargaining, mandatory legislation plus demands for "accountability" make this approach a must in educational decision making.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

4. More and more of this application will be carried out in the future.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

5. Goals and objectives as related to costs have, and will have a significant role in educational decision making. The relationship will not be direct, however. Because the basic costs of school operations (salaries, utilities, insurance, etc.) are so high in comparison with funds available for discretionary spending, I would assume that major use of such a model as described in the study would involve making decisions between alternative objectives based on estimated cost effectiveness.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

6. Limited.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

(continued on the next page)

3-1. (continued)

7. The task of relating educational costs to the multitude of goals and objectives would provide significant information for decision making only if agreement exists on the actual charging of costs to the specific goals and objectives.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

8. The financial crises the schools will face for many years will dictate the utilization of goals and objectives for the purpose of determining priorities, based upon cost and the attainment of behavioral objectives.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

9. In the future the establishment of goals and objectives and the cost of meeting these will become most imperative in educational decision making.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

4-1. WHAT DO YOU VIEW THE ROLE OF THE COMPUTER WILL BE IN THE FUTURE FOR ASSOCIATING EXPENDITURES WITH A GOAL OR OBJECTIVE TO PROVIDE A MORE EFFECTIVE DECISION-MAKING TOOL?

1. For larger districts--high.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

2. I see every reason to believe we are headed in this direction but its application in small school districts will probably remain very limited.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

3. The answer to this one seems simple. The computer is an absolute essential ingredient. I have no question whatsoever that a good program with the computer can easily do the task you are suggesting. I have worked with a computer in accounting for ten years and more specifically, in the last three to four years, in program budgeting. It is an extremely important tool providing this kind of data and it is very helpful in decision making.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

4. The computer will be important as an information gathering and analyzing tool.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

5. Budget code to be used after July 1, 1976, dovetails nicely with a computer format as suggested. Speaking for one school system, we will develop much more detailed format than that called for in state budget format. Probably be similar to suggested computer format.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

6. The computer has and will have an overwhelming role in associating expenditures with goals and objectives. That kind of massive data arrangement can only be accomplished by use of E.D.P. technology.

   Rank_____ Agree____:____:____:____:____:____:____Disagree

(continued on the next page)

4-1. (continued)

7. Because of the multitude of data to be recorded and accumulated for retrieval and analysis in several management information report formats, access to a computer with considerable core is an absolute essential.

Rank_____ Agree____:____:____:____:____:____:____Disagree

8. The computer must be utilized as a retrieval system in the future for associating expenditures with a goal or an objective. Time will not permit this information to be derived in any other manner.

Rank_____ Agree____:____:____:____:____:____:____Disagree

9. If decisions are to be made on a current basis, a computer will be necessary in gathering the information and reporting it to administration and boards to make these decisions.

Rank_____ Agree____:____:____:____:____:____:____Disagree

APPENDIX E

ORGANIZATIONAL GOALS: A SYSTEMS APPROACH

APPENDIX E

ORGANIZATIONAL GOALS: A SYSTEMS APPROACH

Robert E. Ohm
Professor of Educational Administration
University of Oklahoma

The dictum, "define your objectives," is probably the most widely accepted and least questioned principle of the planning professions. Definitions of administration begin or conclude with reference to the primacy of getting objectives stated. Definitions of organizations invariably describe the goal oriented nature of the structure and Drucker's phrase, "managing by objective," brought to focus a variable idea in administrative theory that is beginning to develop conceptual and research status.[1] The purpose of this paper is to identify and describe some models, representing evolving thought, that have been used to deal with the nature and function of goals in the organizational and administrative setting.

The Formal Model

The formal or traditionalist view of organizational goals was bred out of the union of reflective thinking and successful practice first exemplified by Henri Fayol. Fayol's[2] key concept, prevoyance, to foretell the future and to prepare for it, was interpreted by Urwick[3] to mean both forecasting and planning. In Fayol's view forecasting and planning were the central, indispensible administrative

tasks which he incorporated into his maxim, "managing means looking ahead." The need for clearly defined goals in this planning process was assumed and the function of goals was to give direction to planning. Goals were viewed as undifferentiated elements, requiring no more than clear definition in order to be understood, accepted and acted on.

Basing much of his thinking of Fayol's earlier work, Urwick[4] accepted planning as a central element in a nine element framework and asserted that if a plan "is to do something," there must be an objective. In his administrative models, however, goals or objectives are subsumed under the element of planning with the exhortation that the first characteristic of a good plan is that it is based on a clearly defined objective. It should be noted, however, that Urwick was one of the first to publicize the fact that most administrators and others are vague and hazy about where they are trying to go or why, a characteristic that is as true now as it was then. However, his model proposes no solutions to this problem nor does it treat objectives systematically.

As a third practitioner turned theorist, Mooney[5] viewed organization as, "the form of every human association for the attainment of a common purpose"; considered organization to begin when people combine their efforts for a given purpose; and, as his first principle of organization, proposed coordination as the orderly arrangement of

group effort to provide unity of action in the pursuit of a common purpose. Though purpose or objective seems a central element in his thought, it remains an undefined term and receives no systematic treatment.

Assuming that Fayol, Orwick, and Mooney represent the early formalists, the formalist model that emerges views goals or objectives as undefined or undifferentiated elements in organization and administration; central to the planning process, but requiring little or no systematic treatment in a theory of organization and administration. The function of goals is to give direction to planning. It is assumed that, once organizational goals are clearly defined, the other elements of a plan, such as procedures and achievement or production measures will become clear and fall in line. This model assumes the rationality of stating objectives as the first step in a linear planning sequence.

A typical later extension of the undefined, formal model is found in Newman's Administrative Action (1956).[6] The chapter, "Goals--The Guideposts in Administration," is essentially descriptive and reiterates the conventional wisdom. He begins and ends with the traditional assertions that sound administration starts with a statement, or at least a clear recognition, of goals to be achieved, and that every enterprise needs a clear statement of its objectives as a basis for all of its planning. Newman, however, does

mention the existence of multiple organizational objectives, the need for balancing the importance of different objectives, and the need to break down broad objectives into a sequence of sub-objectives and operating goals.

Though Newman concludes by indicating that goals serve such functions as standards for appraising operating results, as a means of exercising control, and as a form of motivation, his basic approach is to see goals as inherently rational, undefined elements; as given requiring no further analysis of their nature or function in administration. In this he reflects the persistence of the formalist model in much of the current thinking on the topic.

Modern Rationalists Models

The undefined rationality of the early formalists was subjected to a major re-thinking in March and Simon's[7] theory of formal organization. On the basis of generalizations that behavior in organization is intendedly rational and that organization structure and function derive from the characteristics of human problem-solving processes and rational human choice, March and Simon have made a distinction between operational and nonoperational goals; a distinction leading to differences in decision making processes and organization structure. Operational goals are defined as those which permit a means-ends analysis to be made, i.e., they provide the necessary measuring rod for comparing alternative means and for determining the contribution of

means to goals. Non-operational goals are those which require the specification of sub-goals before they can be related to specific means or actions, i.e., there do not exist agreed-upon criteria for determining the extent to which particular activities or programs of activity contribute to these goals.

According to March and Simon, the distinction between operational and non-operational goals leads to two qualitatively different decision making processes and to the distinction between unitary and federal organization units. When individuals have the same operational goals, differences in opinion about the course of action will be resolved by predominantly analytic processes. When goals are not shared or when the shared goals are nonoperational and the operational subgoals are not shared, the decision will be reached by predominantly bargaining processes.

The relation of goals to structure is given in the following definitions:[8]

1. An organization is unitary to the extent that the scope of its activity coincides with a means-end structure organized around a single operational goal.

2. An organization is federal if it is composed of a number of unitary sub-divisions.

3. An organization is composite if the scope of its activity encompasses more than one means-end structure organized around operational goals and if it is not composed of unitary sub-divisions.

The importance of March and Simon's analysis is in its recognition of distinctions among goals and the influence of goal structure or organization structure. In contrast to traditionalist views, goals are perceived as significant variables in the administrative process and are moved to a more defined and central role in the study of organization and administration. The distinction between operational and non-operational goals provides a major dimension for classifying goals with significant differences in functions between the goals thus classified.

Another current rationalist view is Vernon Buck's[9] model for viewing an organization as a system of constraints. The model attempts to analyze all organizational behavior in terms of goals, costs, and resource capacity restrictions; using linear programming as a decision making model. In discussing goals, Buck points out that it is the decision to commit resources for certain activities and to withhold them from others that operationally defines the organization goals. Verbal pronouncements are insufficient for defining goals; the speaker must put his resources where his mouth is if something is to be considered a goal.

Simon[10] pursued the notion of goals as constraints by confronting the dilemma of the concept of the organizational goal as a form of reification of the organization leading to its treatment as something more than a system of interacting individuals, and the seeming indispensability

of the goal concept to organization theory. He proposes that instead of the phrase, "organizational goal," it is easier and clearer to view decisions as being concerned with discovering courses of action that satisfy a whole set of constraints. It is this set, and not any one of its members, that is most accurately viewed as the goal of the action.

Simon proceeds to identify two types of constraint sets or goals; those that may be used directly to synthesize proposed solutions (alternative generation) and those that test the satisfactoriness of a proposed solution (alternative testing). The goals that guide the actual synthesis and the constraints that determine whether possible courses of action are in fact feasible, i.e., the distinction between generator constraints and test constraints, help to resolve the ambiguity in the notion of goals as widely shared and in conflict. The constraint sets used in testing are generally widely shared and serve as organizational goals. Goals as constraint sets denoting the generators are typically in conflict. It is important to make explicit which sense of goal is intended.

In the process of operationalizing the concept of organizational goal, the new rationalists have moved from a view of goals as undefined and a priori givens in the organization to a view of goals as a function of decisions involving resource allocations and constraints on these

allocations. In this sense, goals are emergent, changing, multi-functional and frequently conflicted rather than unitary, precise, and teleological. The review of selected systems approaches to goal analysis that follows provides a set of insights that are as important as, and complementary to, current rationalist approaches.

System Approaches

Though current rationalist approaches to organizational goals merge into system terms and concepts, system theory approaches to the study of organizational goals have contributed useful concepts and understandings of their own. One of the first breaks with the undefined rationality of the early formalists was Barrard's[11] insightful analysis which may be said to be the precursor of the systems approach.

Starting from the position that purpose is the unifying element of formal organization, Barnard sees purpose as having two forms; as an act of cooperation in which purpose is viewed objectively and reflects the interests of the organization, and as the subjective meaning of the act to the individual. In turn, purpose as the object of cooperation can serve as an element of a cooperative system only so long as the participants do not recognize that there are serious divergencies in their understanding of that purpose as an object of cooperation. Recognition of divergency varies with the concreteness or abstractness

of the purpose. When purpose is of a general, intangible and sentimental character, divergencies can be very wide and yet not recognized. The following quote relates this view to current thinking:

> An objective purpose that can serve as the basis for a cooperative system is one that is believed by the contributors (or potential contributors) to it to be the determined purpose of the organization. The inculcation of belief in the real existence of a common purpose is an essential executive function.[12] (underlining added)

In further definition of his concepts, Barnard arrives at his well known distinction between effectiveness and efficiency. Effectiveness of cooperation is the accomplishment of the recognized objectives of cooperative action. Efficiency of a cooperative system is its capacity to maintain itself by the individual satisfactions it affords.[13] This identification of two classes of processes first suggested the multi-purpose nature of an organization and the inherent conflict between them. As Barnard points out, the functions of the executive are those of securing the effective adaptation of these processes.[14]

The proposition that an organization had more than one purpose and that purposes could be classified along an achievement-satisfaction dimension received considerable support from the human relations phase of theory development in administration and corollary developments in group dynamics and small group process. Lonsdale[15] first traced the development of this line of thought from Barnard

through Roethlisberger and Dickson to the early work in group dynamics. The concept was stated explicitly by Roethlisberger and Dickson in their observation that,

> An industrial organization may be regarded as performing two major functions, that of producing a product and that of creating and distributing satisfaction among the individual members of the organization.[16]

This general concept received important support and elaboration from the work in group dynamics, small group research and theory, and T-Group theory and laboratory method. Beginning with Bion's[17] formulation that every group has two purposes; to accomplish work and to deal with the internal emotional resistances to work, Thelen[18] extended the concept to ordinary work groups in his distinction between achievement problems and process problems.

Group activity may move from one problem area to the other. Non-productive periods (in achievement terms) indicate that group energy is being given to dealing with process problems. Obstacles to achievement problem solving are due to an inability to find behaviors which simultaneously satisfy both sorts of problem solving demands. The relation between achievement and process is dynamic in that energy must be given to both problem areas if the group is to solve its achievement problems in a socially productive form.

The dimension emerging from such distinctions as effectiveness and efficiency, product and satisfaction, work and emotionality, achievement and process, and task

and maintenance aspects of group and organizational activity is incorporated in Parson's[19] social system theory. Hill's[20] succinct simplification of this theory asserts that all social systems are organized in the sense that they are structurally differentiated about two major axes; a differentiation between internal and external considerations and a differentiation between instrumental considerations or problems of means, and consummatory considerations or problems of ends. When these axes are dichotomized they define four major functions; adaptation, goal attainment, pattern maintenance, and integration.

This four part framework provides one means of classifying goals and identifying goal functions. Goal statements are not simple, undefined elements in a rational three part framework of goals, processes, and evaluation, but statements depicting a variety of desired states of a multi-purpose organization and serving a number of functions for the organization. Goal statements may have an adaptive function, goal attainment function, pattern maintenance function, or integrative function. And each of these functions may be in competition for scarce resources. Therefore, the edict, state your goals, does not necessarily lead to rational planning, since goal statements may be in conflict. The problem of whether a pattern maintenance goal is given greater emphasis than a system attainment goal does not necessarily have a purely rational

solution since it may be determined by collective bargaining or some other form of power play.

Another system based approach to goal analysis has been developed by Etzioni.[20] He begins with two assumptions; (1) goals depict a future state of affairs which organizations strive to realize, and (2) goals are multifunctional.

The definition of a goal as a desired state of affairs which an organization attempts to realize indicates that a goal state is sought but never exists. Once realized, a goal ceases to be a goal. The consequences of this view for organizational success almost always lead the evaluator or researcher to conclude that low effectiveness is a general characteristic of organizations since most organizations most of the time do not attain their goals in any final sense. Since goals as symbolic units, are ideals which are more attractive than the reality which the organization attains, the organization can almost always be reported to be a failure.

The notion of goals as future states of affairs permits a variety of goals to be stated or to be sought. The organization can be viewed as multi-purpose and/or it can be viewed as engaged in activities directed toward both implicit and explicit goals, many of which may conflict with each other.

Etzioni makes a distinction between a goal model and a system which is a working model of a social unit which is capable of achieving a goal.

> It is assumed a priori that some means have to be devoted to such non-goal functions as service and custodial activities, including means employed for the maintenance of the unit itself. From the viewpoint of the system model, such activities are functional and increase organizational effectiveness. It follows that a social unit that devotes all its efforts to fulfilling one functional requirement, even if it is that of performing goal activities, will undermine the fulfillment of this very functional requirement, because recruitment of means, maintenance of tools, and the social integration of the unit itself will be neglected.[22]

The systems-goal or instrumental-substantive distinction provides a useful view of the way goal structure may shape administrative behavior in educational organizations. Etzioni[23] has proposed that the traditional concepts of line and staff tend to be reversed in institutions whose defining characteristic is the creation of, interpretation, application, and dissemination of knowledge. Hierarchial authority tends to become directed to the instrumental goals of maintaining the organization while the characterizing or substantive goals become the immediate responsibility of the specialist staff. Such instrumental goals as morale, satisfaction, loyalty or cohesiveness, have become measures of administrative effectiveness and sources of authority legitimation. For administrators, instrumental goals have become a primary concern in the exercise and legitimation of authority.[24]

One of the most systematic and comprehensive mergers of the theoretical and practical in the treatment of organizational goals, is the work of Bertram Gross.[25] He introduces his topic "What Are Your Organization's Objectives" by pointing out that there is nothing that managers and management theorists are more solidly agreed on than the vital role of objectives in the managing of organizations and nothing better calculated to embarrass the average executive than the direct query, "Just what are your organization's objectives?" He goes on to assert that many managers are still too much the prisoners of outworn, single purpose models erected by defunct economists, engineers and public administration experts. Categorizations such as long and short range, general and specific, and instrumental and ultimate are considered inadequate for the complexities of purpose multiplicity. The complex domain of organizational objectives requires an approach capable of dealing more fully with the multiple dimensions of an organization's performance. This is the general systems approach, which in terms of the formal organization is:

1. A man-resource system in time
2. Open, transacts with environment
3. Characterized by internal and external relations of conflict as well as cooperation
4. A system for developing and using power, with varying degrees of authority and responsibility, both within the organization and in the external environment
5. A "feedback" system

6. Changing
7. Complex-with many sub-systems
8. Loose, with many components that may be imperfectly coordinated, partially autonomous, and only partially controllable
9. One partially knowable with many areas of uncertainty, with "black regions" as well as "black boxes" and with many variables that cannot be clearly defined and must be described in qualitative terms
10. Subject to considerable uncertainty with respect to current information, future environmental conditions, and the consequences of its own actions.[26]

Gross proceeds to identify two kinds of performance: producing outputs of services or goods and satisfying (or dissatisfying) various interests. These performances consist of seven structural activities from which seven sets of structural objectives may be derived. He proposes that the structure of any organization or unit thereof consist of:

> (1) people and (2) non-human resources, (3) grouped together in differentiated subsystems that (4) interrelate among themselves and (5) with the external environment (6) and are subject to various values and (7) to such central guidance as may help to provide the capacity for future performance.[27]

The planning problem is to develop commitments to some pattern of objectives derived from the seven categories of objectives. The essence of planning is the selection of strategic objectives in the form of specific sequences of action to be taken by the organization.

The notion that structure is determined by strategy is explored by Learned and Sporat[28] in a brief but thorough review of relevant studies. Though evidence is presented to support the relation, the question is left open. They

conclude their review with the question of whether or not the organizational pattern can or should reflect all the variables entering into company strategy and what variables it can or should reflect.

A Goal Analysis Model

In this section an attempt is made to construct a goal analysis and classification framework particularly applicable to educational goals and the functions they perform in educational organizations. The framework is based on open system theory. It is designed to classify statements that have been formally labeled as goals, behaviors in which goal direction is included in the description, and described constraints shaping a decision. The goal types within each of the categories formed by the intersects of the several dimensions are considered to perform an identifiable function in the system. In one sense, the classification scheme may be viewed as the basis for a content analysis of goal statements, constraint sets, policies, or strategies. Differences in the distribution or patterning of goals or goal strategies may provide a means for further exploration of the structure-strategy question. In addition, an understanding of goal patterning should prove to be useful information for the practicing administrator in the strategy of planning.

A preliminary definition of terminology may be helpful. Goals, aims, objectives, ends, purposes, and

outputs are interchangeable terms in much of the discussion on goals and common usage in administration. In this paper, the term goals will be used as the generic form; objectives will refer to those statements which can be used to generate means and be incorporated in measures of progress or production; aims will be used to refer to general statements that require sub-statements of objectives to put them into operational form; and purposes will be used to refer to statements which synthesize individual needs and organizational objectives.

The basic classification framework is shown in Figure 1.

	Instrumental	Criterion
Nonoperational		
Operational		

Figure 1. Two-Dimensional Goal Classification Framework.

The instrumental-criterion dimension is considered to include such related dimensions as (a) task-maintenance, (b) substantive-maintenance, and (c) instrumental-consummatory. Distinctions made by those cited in the previous sections of this paper. Instrumental goals refer to the stability, coherence, cohesiveness, equilibrium, or other aspects of the system. They include such notions

as morale, satisfaction, efficiency, belongingness, esprit de corps, unity, loyalty, commitment, motivation, and sentiments. Their function in the system is given by the class designator, instrumental.

Criterion goals refer to statements that serve to characterize the system or organization, that relate the system to other systems, that serve to generate means and that are used to construct measures of production or progress. Their basic characteristic is the specification of substance, content or product of action. They incorporate the notions of task, production, work and achievement.

The operational-nonoperational dimension, as proposed by March and Simon, was defined previously. Operational goals are those which can be used in a means-end-evaluation analysis. Nonoperational goals require the specification of subgoals before a means-end analysis can be made.

Nonoperational goals serve a number of important functions including institutional legitimation; authority legitimation; relating the organization to the cultural, political, economic, and other social systems; justifying a multiplicity of operational goals some of which may be in conflict; and mobilizing support from diverse interest groups.

The four cell classification requires a third dimension in order to incorporate current system and rational

distinctions among goals. The dimension as defined is an effort to make the framework exhaustive. The points along the continuum of the dimension differentiate ritual, telic, and constraint goals. Figure 2 is a diagram of the categories thus constructed.

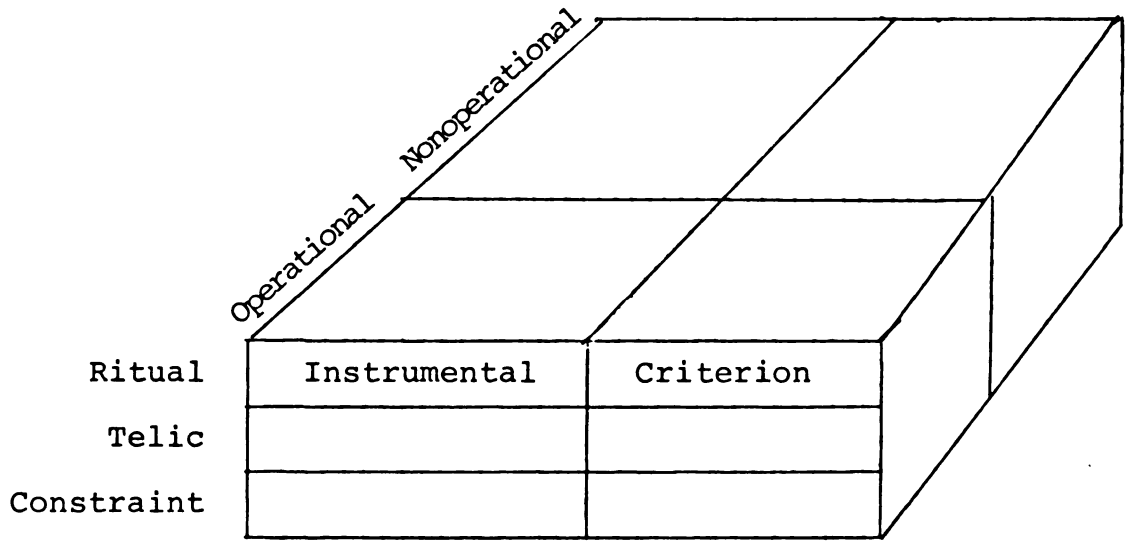

Figure 2. Three Dimension Goal Classification Framework.

Ritual goals are those in which both ends and means are perceived as clearly specific and known. Both ends and means are self-evident, requiring no justification or analysis. The means and end are fixed or given with a single means performed according to a predetermined order, sequence, or rule. In the vernacular of bureaucracy, jurisdictions, rules, and routines become inviolable even though the substantive goals of the organization, as services to clients, are not served.

In another sense, ritual goals relate to Etzioni's cultural goal model and are the kinds of statements that pay obesiance to "God, motherhood and the flag." Nonoperational, criterion, ritual goals comprise much of the material in the periodic pronouncements of "national" education committees, organizations and other self-appointed or politically appointed groups or individuals speaking for "Education." The function of these statements for the local school administrators are important as they may serve to legitimize programs, curricula, as innovations or to provide some focus for unity or consensus of otherwise diverse and conflicted special interest groups.

Teleological goals or statements are those in which the end is clearly defined and understood and the means or alternatives exist in discernible or describable form. In short there are known means to achieve known ends although the best alternative may not be known. Most of the subject goals in education are perceived as telic in form. Similarly production goals in industry would be classified in this category.

Constraint goals may be improperly or poorly labeled, partly because, as Gross pointed, there is a lack of a well developed language of organizational purposefulness. The referrent is to goals or statements which become increasingly defined as action is taken; in which the end emerges as action ensues; or in which the system state

becomes defined as actions are taken. The emergent nature of these goals is consistent with the notion of goals as constraints, or of Cyert and March's description of preferences as an important element in their theory.

> Of the states of the world that might result from an organization's actions at any time, the organization will prefer some states to others. Preferences are generally not organization wide or immutable. They reflect a shifting consensus, forged in large measure from discussion, bargaining, compromise, and power plays among subgroups within the organization.[29]

The ritual-telic-constraint dimension gives substance to the more general instrumental-criterion and operational-nonoperational dimensions without tying to structural content such as personnel, finance, curriculum and the like. The complete model requires testing; first as a content analysis framework for examining the stated and behavioral goals of an organization and second as a research tool. Differences among organizations in the distribution of goals would be presumed to be related to differences in structure and output.

SUMMARY

The position developed in this paper is probably best summarized in a quote from Gross:

> Planning is an exercise in conflict management rather than only the sober application of technical rationality. Any real life planning process may be characterized as a stream of successive compromises punctuated by frequent occasions of deadlock or avoidance and occasional victories, defeats, and integrations.[30]

The ability to analyze and work with the patterned yet changing nature of organizational goals would seem to be an essential administrative skill for, as Gross has pointed out, the entire management structure is involved de facto in the daily operation of formulating and winning commitment to objectives for future performance and structure.

Goals, as a basic element of organization and a central concern of administration, can no longer be viewed as givens exempt from questioning, competition and conflict. The notion that stated goals are a self-evident basis for the beginning of a linear planning process does not hold for the range or multiplicity of an organization's goals. A considerable part of an administrator's time is involved in the development of goal strategies. And the prospect for even greater involvement is in the offing.

Michael has pointed out one of the implications for administration of the computer revolution in decision making.

> While the computer will relive top administrators of minor burdens, it will enormously increase the demands on them to wrestle with the moral and ethical consequences of the policies they choose and implement. He will have to be a perpetual student, not only of the techniques of rationalized decision making but even more of the humanities.[31]

The point is more precisely made by Harlow[32] in his assertion that purpose defining is the central function of the school administrator. In system terms purpose

definition may be the central ordering process of a complex, indeterminate, boundedly rational, conflicted system and the definition of purpose may be the most important output of the system. The implications of this position for the training of administrators have yet to be explored.

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[23]Ibid., p. 272.

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