A PROPOSED PROGRAM BUDGETING MODEL AND ITS APPLICATION FOR AN AMERICAN - SPONSORED OVERSEAS SCHOOL

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This is to certify that the

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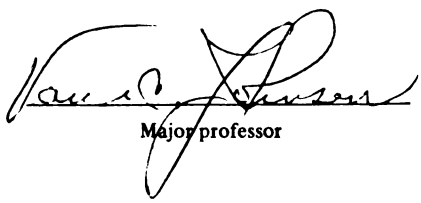

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ABSTRACT

A PROPOSED PROGRAM BUDGETING MODEL AND ITS APPLICATION FOR AN AMERICAN-SPONSORED OVERSEAS SCHOOL

By

Bobby J. Ballard

The characteristics and problems of an American-sponsored overseas school were described, including the need for an improved systematic and rational approach for effective planning and decision making. Program budgeting was recommended for the overseas schools, which would provide a tool for decision makers to identify and evaluate programs and to plan on a long-range basis. Implicit in program budgeting is the ability to adapt to the changing needs of a multinational student population.

The components of the Planning, Programming, Budgeting, Evaluation System were described, including the responsibility matrix for each task force. Emphasis was placed on developing a hierarchical program structure and stating objectives for each program level in measurable terms. The program structure provides the basis for allocating resources at program levels and for the final development of the program budget.

The sources of information were the By-Laws of the Parents Association, minutes of the meetings of the Board of Education and the Parents Association, administrative policies, the annual budget documents, student records, faculty personnel files, accounting records, and special reports by the administrative staff. It was indicated that the study was of a descriptive nature, and hypotheses were not presented for testing.

The five objectives that were considered necessary to accomplish the purpose of this study to develop a program budgeting model for the American Community Schools of Athens, Inc. were:

1. To investigate the administrative policies and determine if there are any policies that have an effect or constraint upon the implementation of program budgeting,

2. To determine the administrative and instructional areas of responsibility and how resources were traditionally allocated to these areas,

3. To determine the program elements for each of the instructional areas,

4. To perform the function of program budgeting by allocating the educational resources to program elements, and

5. To develop criteria for measuring attainment of the educational objectives.

It was suggested that the end-product of this study possibly could be used by other overseas schools with modifications based upon the constraints of the particular school.

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Several conclusions and recommendations were drawn from this study, suggesting the validity of implementing program budgeting in the American Community Schools of Athens, Inc. It was suggested that the study be replicated at other overseas schools, which could result in developing a uniform system for all such schools. This would facilitate the exchange of information and data similar to the projects performed by the Western Interstate Commission for Higher Education.

Further studies would include developing basic definitions to provide for consistency in application of data and statistics. This could also result in developing an operational philosophy for all American-sponsored overseas schools and a basis for performing logitudinal studies or behavior patterns for students educated in an overseas environment.

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Bobby J. Ballard

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CHAPTER I

THE PROBLEM

Introduction

American enterprises, private businesses, industrial corporations, and governmental agencies have expanded their business operations significantly throughout the world since World War II; this requires American citizens to travel and relocate in foreign countries from one to several years. Two major concerns of most American citizens considering a foreign assignment are the adequacy of the overseas school system for their dependents and the need for their dependents to continue their education. Generally, parents will find an American-sponsored school in almost every foreign country.

It is estimated by the Office of Overseas Schools of the U.S. Department of State that approximately 250,000 school-age children have accompanied their parents on an overseas assignment. The Department of Defense operates schools throughout the world for children of military and governmental personnel, but allows some civilian parents to send their children to these schools on a space-available, tuition-paying basis.[1]

The schools for civilian children are operated generally as nonprofit private corporations or associations, and are not controlled by the U.S. government. These schools are owned by the parents and controlled by a local board of education elected by the parents of the children attending the school. Most of the civilian schools receive various types of assistance and financial support under a program administered by the Office of Overseas Schools of the U.S. Department of State. The assistance programs are intended to help the schools provide adequate education for U.S. government dependents and to demonstrate to foreign nationals the philosophy and methods of American education.[2]

During the fiscal year 1973-74, the Office of Overseas Schools, with an annual budget of approximately five million dollars, gave some types of assistance to 134 different schools in 75 different countries. "Combined annual operating budgets of the 134 schools total approximately $65,000,000. Tuition payments are the principal source of financing for the schools."[3] The Office of Overseas Schools reported that during the period 1973-74, the student enrollment included 33,992 U.S. citizens and 36,495 from other nations, as shown in Table 1.1. The professional staff was also multinational, composed of 3,071 U.S., 1,949 host country, and 752 third-country citizens, also shown in Table 1.1.

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The student bodies of the civilian schools are typically multinational. A good example is the pattern of student enrollments at the American Community Schools of Athens, Inc., Athens, Greece, which shows, in Table 1.2, forty-four different countries represented during the six-year period from 1968-69 to 1973-74.

Citizens of countries other than America and Greece are considered third-country or third-culture citizens. An explanation of third cultures, as reflected in a multinational overseas school, was offered by Ruth Useem:

> A third culture is the style of life, values, patterns of behavior, and norms created and shared by individuals who are representatives of their societies or some segments thereof and who are relating their nations or some sections of them to each other. Third culture people are not tourists or immigrants or expatriots, but diplomats, military personnel, educators, technical aid persons, missionaries, business people, reporters and foundation representatives. The style of life and patterns of behavior and norms of any particular third culture reflect changes which occur both within societies and between societies.[4]

Although the student body is multinational, all programs except foreign languages are presented in English. "The instructional programs all provide a core curriculum which will prepare students to enter schools, colleges and universities in the U.S."[5]

Need for the Study

Throughout the world, school administrators are receiving pressure to justify their management decisions and the use being made of the school's educational resources,

even though, as Jean Hills argued, "that what proponents of accountability wish to achieve is incompatible with the value systems and functions of the school."[6] The overseas school budgets for operating costs are generally small and relatively uncomplicated. Systematic analysis of the alternatives on a short- or long-range basis has not been given much consideration. Generally, local boards of education have the responsibility for making certain that their schools are operating properly and their philosophy for the school system is carried out.

Accountability, as defined by Arthur R. Olson, "is a tool--or a process--a way to give the public the facts they need to judge more accurately how well their schools are doing."[7] He continued:

> Some form of accountability is not new in education. . . . What is new is the heavy emphasis on student performance or outcome measures. Recently the concept of accountability has found its way into the laws of at least 23 states. These enactments include a host of new accountability requirements for the development of assessment programs and evaluation systems."[8]

The Research Corporation of the Association of School Business Officials pointed out that educators have not adequately met the challenge of effective planning:

> Educators have been doing some planning from whence has come some new programs and a revision of others. And there has been some evaluating. But, the fact remains that educators have not started a systematic study with: (1) a careful look at the needs and problems of their districts, (2) an inventory of available resources, (3) the establishment of broad goals and general objectives, (4) reaching agreement on

> priorities, (5) the consideration and analysis of alternative program strategies, (6) the establishment of programs according to plan, (7) the procurement and allocation of resources according to plan, (8) the preparation of the budget format, (9) the evaluation of the total effort, and (10) finally recycling and revision as seems necessary and/or desirable.[9]

Albert B. Sabin also pointed out, in reference to effective planning: "If problems are not anticipated and if appropriate action is not taken long before they reach crisis levels, we must be prepared to suffer the chaos that follows."[10]

The researcher had an opportunity to discuss financial and operating procedures of overseas schools with members of boards of education, superintendents, and other administrators from Europe, Asia, and Africa.[11] It was found that:

1. All overseas schools prepare a formal traditional budget for the total school but generally only for one year in advance.

2. Costs for each student are developed simply by dividing total costs by the total number of students.

3. Only a few schools develop costs by school level, such as elementary, middle, or high school.

4. Some schools borrow funds for major capital improvements and budget from current operating funds an amount sufficient to amortize the loan over the period or term of that loan, but a few schools raise tuition on a current basis to provide the funds.

5. Planning generally is on a short-range basis.

6. There are not any overseas schools developing costs or allocating funds by program levels.

In most overseas schools fluctuating enrollments create serious financial problems, especially when enrollments drop during the school year and teacher contracts are committed for the full year. At the American Community Schools of Athens, Inc., for 1971-72 the actual full-time equivalent enrollment was 1,946 students. For 1972-73 the enrollment was estimated at 2,250 students, but there was an actual enrollment of 2,406, which resulted in a surplus of funds of $113,000 for the fiscal year. For 1973-74, the estimated enrollment was 2,500 but resulted in an actual enrollment of 2,240 and a financial deficit of $136,000 for the fiscal year.[12] The reasons for the fluctuating enrollments at the American Community Schools of Athens, Inc., are not easily or specifically identifiable, but possibly are a combination of the following:

1. Increase in tuition from 1972-73 to 1973-74 of 6 percent and from 1973-74 to 1974-75 of 27 percent as shown in Table 1.3.
2. Devaluation of the dollar from thirty Greek drachmae to twenty-seven for each dollar.[13]
3. Miliary coup in November, 1973, overthrow of the president, and temporary establishment of martial law.[14]

4. Political pressure to replace U.S. and third-country national employees with local nationals.[15]
5. Delay by the U.S. Naval Sixth Fleet in establishing homeporting in the Athens area.[16]
6. High inflationary rate in Greece of approximately 30 percent increase in 1973 over 1972.[17]

Many other factors may cause a shift or change in the population of an overseas school Ruth Useem suggested the following:

> The number and composition of the community of foreigners and host nationals may change rapidly. A break-off in diplomatic relations or an opening up of diplomatic relations between two nations, an outbreak of war, an ending of war, new trade agreements, a growing sense of nationalism and anti-foreignism within a country, inflation, new knowledge, the growth of the "fourth world" of oil-producing nations--all affect the way of life led by overseas nationals in their mediator roles with host nationals and representatives of other countries.[18]

Underlying problems resulting from the fluctuating patterns of enrollments were explained by Richard Berendzan. He stated that population changes affect educational institutions in at least two ways: (1) on student enrollment structures and (2) on curriculum and staffing.[19] Some fluctuations in enrollment can be predicted; Philip M. Houser felt educational administrators who are responsible for planning must be cognizant of these data.[20]

The effects of fluctuating enrollments on higher education were presented in a report by the Carnegie

Commission.[21] These detrimental effects would be applicable to overseas schools as well.

The major problems confronting overseas schools are increasing costs and highly, sometimes unpredictable, fluctuating student enrollments. Overseas schools generally construct traditional budgets on a formula basis, e.g., allocating teacher positions or teaching supplies, geared to the number of students. However, there is little evidence that instruments for efficiency analysis are being used at program levels within the overseas schools.

The following observations by Frederich Balderston are equally applicable to an overseas school:

> In the past, these institutions were capable of growing in many directions without having to assess mission or scope and without being specifically accountable--financially or otherwise--to funding agencies. . . . The problems of identifying and measuring the components of such complex organizations or of analyzing and evaluating their performances are enormous, and these problems are complicated by uncertainties about how to identify and demonstrate the quality and quantity of education.[22]

Recommended for the overseas schools is a Planning, Programming, Budgeting, Evaluation System. The expected results from PPBES are to provide decision makers with a tool for (1) systematically planning and identifying goals, general objectives, and related programs considered for implementation; (2) analyzing alternatives on a long-range basis for selecting the most feasible program to attain the objectives; (3) reconciling the requirements for each

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program with the current year's available resources; and (4) evaluating the results of costs and benefits and how effectively the programs have operated.[23] Implicit in PPBES for an overseas school is the ability of the system to adapt to the changing needs of a multinational body of students. Wilbur Steger emphasized the need for PPBES as follows:

> To focus attention on major issues for education; to introduce analysis routinely into comparison of alternative resource allocation; to provide information about future as well as current costs and benefits; to present agency budgets in terms of meaningful activity structure; to save and focus the decision-making time to high officials.[24]

The major steps that must be considered in PPBES are as follows:

1. An assessment of the needs.
2. The examination of existing goals.
3. The establishment of a set of priorities.
4. The tentative determination of major programs.
5. The careful analysis of alternatives.
6. A selection of alternatives.
7. The preparation of a program and financial plan.
8. The development of a comprehensive plan for evaluation.[25]

Traditional Budgets vs. PPBES

Traditional budgeting is input oriented and is concerned with money, personnel, and supplies needed by the institution rather than focusing on attaining objectives established for the institution. In contrast, PPBES is output oriented and is concerned primarily with fulfilling the objectives and programs of the institution.[26]

In an experiment conducted by Martin J. Scurrah and Moshe Shani to determine if there would be interpersonal consequences in introducing program budgeting as compared to conventional budgeting:

> It was hypothesized that there would be more intra-individual conflict in faculty groups using a PPBS approach than in groups using a conventional budgeting approach; that there would be more interindividual conflict in faculty groups using the conventional or the PPBS budgeting approach than in groups using a PPBS; and that there would be no difference in the average ratings of budgets prepared by groups using the conventional or the PPBS budgeting techniques. The first and third hypotheses were not confirmed; the second hypothesis was confirmed.[27]

Recognizing student needs and involving the staff in the decision-making process are important considerations in PPBES. When people are involved in developing programs, they will be more inclined to accept and support the program.

Long-Range Planning

Budgets for overseas schools are traditionally short range, that is, for one or two years. Parents appear reluctant to support high tuition for long-range plans, especially when their tour of duty may be for two years or less. Charles L. Schultze,[28] Research Corporation,[29] Philip Coombs,[30] and others have recognized the need for research on and consideration for applying the concepts of PPBES to long-range planning. Kiser and Edwards, in conducting a study of 140 U.S. schools using PPBES, reported that one of the major problems was

> . . . the inability to develop multi-year program and fiscal plans. Long-range planning has never been a forte of educators. PPBES encourages them to develop three- to five-year plans to focus attention more critically upon the future consequences of present decisions and to improve the rationality of daily operating decisions made in the context of projected activities.[31]

David Novick indicated that long-range planning was a necessity for effective planning and that programs for short-range years are generally less flexible. Novick used the automobile industry to illustrate his point:

> In the current time period, next year's model or the automobile for Year I is a fixed thing with only a little possibility of change. The article for the year after that, or Year II, is almost a fixed thing because commitments must be made to long lead times, as much as 18 months in advance. Even the automobile for Year III is fairly well developed at this point in time and they are also planning for automobiles for Years IV and V.[32]

The remote areas of some overseas schools, problems of recruiting and retaining staff, and difficulty in obtaining supplies and equipment make long-range planning essential for operation of the school.

Charles Schultze observed that long-range plans should be analyzed for current programs, even though the school district does not anticipate new programs:

> The multi-year plan could include only future consequences of currently proposed decisions. Under this method the five-year plan accompanying the budget submission would propose decisions for the first year and show for the subsequent four years, both the output and financial costs of proposed and prior decisions.[33]

Multiyear planning should emphasize the need to develop incremental costs connected with continuation of present programs. Schultze stated that:

> Over the past five years, federal budget outlays on domestic programs have risen sharply. Under these circumstances, one would expect that decision makers would have had substantial flexibility in directing the course of spending according to their perceptions of priorities. In practice, however, the built-in increases every year, stemming from prior year decisions, have absorbed a large fraction of each single year's budget increase. The size of these built-in increases has always come as a surprise. Available options in any single year have consequently been much smaller than one would surmise simply by looking at the size of the aggregate five-year increase. An information system that provides an aggregated measure of built-in increases, and tags each major decision with its future consequences in the context of that aggregate, at least indicates to decision makers what their current decisions are doing to their future options.[34]

Systematic Analysis

One of the primary concerns of PPBES is the emphasis placed on the analysis of alternatives. Educational administrators are encouraged to examine the impact of selecting one program over other programs in achieving the stated objectives.

The Research Corporation reflected on the importance and purposes of resource analysis as follows:

> To generate, collect, store and retrieve data--financial, program and other--that will assist in relating inputs (resources) to outputs (educational) outcome.
>
> To organize and link resource data to the program structure to produce information that will aid the decision-maker in analyzing alternative means of attaining his objective and informally documenting the

> resources required for the alternative chosen by the decision-maker.
>
> To reduce, wherever possible, the unknowns of resource requirements, and where information explicitly answering decision-makers' questions cannot be provided, to determine the bounds on the range of uncertainty in the future about resource requirements and their costs, i.e., to perform sensitivity analysis.[35]

Carpenter and Haggart felt that "evaluating alternatives is both the <u>why</u> and <u>how</u> of program budgeting for educational planning."[36]

John Benton suggested that under systematic analysis "alternative courses of action are identified and subjected to some kind of evaluation."[37] Schultze argued there is a complex set of relationships between inputs and outputs and a definite need for analyzing alternative programs for funding purposes:

> Federal elementary and secondary education programs primarily consist of grants-in-aid to state and local governments. It is essential to know whether federal funds are additive to or simply substitutes for state and local education funds. As a substitute for state and local funds, federal aid to education does not increase the resources going into education, but is simply a form of general financial assistance to state and local governments. To the extent that federal funds are additive, they increase resource inputs. Assuming the federal program to be additive, what particular resources does it add, and what consequences do those additional resources have on various measures of educational achievement? Alternative programs will produce different results in terms of additivity and the mix of resource inputs. We cannot choose among them, in order to achieve a particular set of objectives, until we know what those differences are.[38]

Also in strong support for program analysis, V. B. Lewis stated:

> Adequate analysis of data should result in reasonable assurance that the return from every expenditure will be worth its cost in terms of sacrificed alternatives; incremental analysis, i.e., analysis of the additional values to be derived from an additional expenditure, is necessary because of the phenomenon of diminishing utility; and comparison of relative merits can be made only in terms of relative effectiveness in achieving a common objective.[39]

Criteria Used to Measure Output in Elementary and Secondary Schools

One of the most difficult problems for elementary and secondary schools is measuring the output or attainment of objectives. Some of the following criteria for measurement have been used:

1. Scores on achievement and scholastic tests
2. Number of graduating seniors
3. Promotions between class levels
4. Numbers of graduates gaining access to and attending post-secondary institutions
5. Number gaining immediate employment upon graduation and/or a combination with salary level
6. Student-teacher ratios
7. Measuring costs per student

Robert Ross pointed out the goals should be stated in such a way that the accomplishment of the goal can be readily determined and evaluated.[40] Warland D. Wight felt educational performance objectives should be expressed in behavioral terms that are readily accessible.[41] Ronald W. Bruton stressed the need to evaluate objectives in terms of student behavior:

> There is an obvious need to evaluate the merit of behavioral objectives empirically, but no method for doing so. Several investigations (e.g. Butler et al., 1971; Stake, 1970) have devised methods for evaluating objectives, but their methods are based upon the

> quantified opinion of experts. To achieve greater empiricism, objectives should be evaluated instead in relation to child behavior.[42]

Purpose of the Study

The purpose of the study is to develop a program budgeting model, specifically designed for the American Community Schools of Athens, Inc., in Athens, Greece. The objective is to develop a methodology for determining the cost of program elements required to produce an educational benefit or outcome. Attaining the objective will provide administrative decision makers with information and alternatives to implement new programs or delete outdated programs to meet best the needs of a highly fluctuating, multinational student body of an overseas school. The program budget is not intended to replace the formalized traditional budgeting procedures but to complement the process by analyzing programs and providing alternatives.

To attain the purpose of this study, it is necessary to identify the present programs and to identify present resources allocated to these programs.

Scope and Limitations of the Study

The study is intended to develop a working model for implementing a system of program budgeting in the American Community Schools of Athens, Inc., Athens, Greece. The study begins with a detailed evaluation of

the traditional budget document, which will facilitate the collection of data necessary for the preparation of the program budget. The program budget will include all of the programs offered and presently utilized by the American Community Schools of Athens, Inc. Implicit in the conceptional design is the broad involvement of members of the professional staff at all levels. The study will require the cooperation of school board members, administrators, teachers, and students concerning programs and plans for all grade levels. Available data from student records, faculty records, and administrative policies adopted and approved by the governing board of education, as well as current budget and accounting records, will be assembled and related to program activities.

Each overseas school is a unique entity, which must develop programs to fulfill the needs of its students. Locality of the school, host country culture and laws, and multinationality of student enrollment may restrict the flexibility of implementing certain programs. As a consequence, the program structure developed for one overseas school may not be feasible for the plans and objectives of a school in another country. This study and proposed model are limited to data available and applicable to the American Community Schools of Athens, Inc., Athens Greece.

Since the study is of an exploratory nature and not of an empirical design, hypotheses have not been presented for testing.

Overview

To accomplish the purpose of this study, in Chapter II the literature containing information regarding program budgeting and the forces affecting PPBES is reviewed. In Chapter III the rationale and methods for the study are described. Observations from the research, including a model for program budgeting for the American Community Schools of Athens, Inc., are presented in Chapter IV. Conclusions and recommendations of the study are summarized in Chapter V.

Footnotes--Chapter I

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CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The literature regarding PPBES has increased significantly in the past few years. The Research Corporation of the Association of School Business Officials has made the most significant contribution to further the understanding of PPBES by conducting extensive, in-depth studies. The Research Corporation published a book entitled Education Resources Management System, intended for use by elementary and secondary schools. The authors used the terms ERMS and PPBES interchangeably.

The Rand Corporation, through its staff members, the Department of Defense, the National Center for Higher Education Management Systems at Western Interstate Commission for Higher Education, and the American Council of Education, have made major contributions in understanding, applications, and implementations of PPBES.

In this chapter the term "management information system" is reviewed and the conceptual elements of PPBES as a tool for a management information system are identified. Then a review is made of each process or function

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of PPBES and the hierarchical relationship of objectives and the program structure.

The importance of analysis in an operating system is also reviewed. Selma J. Mushkin and James R. Cleaveland indicated that a continual process of analysis will guard against obsolescence of programs and activities.[1] A short review is made of the need for long-range planning and for a cost-estimating relationship as a basis for estimating costs for long-range planning. To bring credibility to the purpose of the study, some of the legal requirements for implementing, current "users," and institutions performing research in PPBES are discussed. Finally, steps for implementation of PPBES are reviewed.

Management Information Systems

A key element in any management system is the supporting management information systems.[2] Leonard Krauss stated that the objectives of a management information system are to collect and make available such information as is needed by management to run the business; to improve overall operations by providing management with decision information that is accurate, up to date, and rapidly accessible; and to improve profit and customer service by getting the right information to the right people so they can make the right decisions.[3]

The Michigan Department of Education, in defining a management information system, stated that:

> A Management Information System is intended to supply information to an organization's decision-makers. The Management Information System attempts to make information available, not to replace decision-makers. The manager's information needs vary with the task at hand and with his ability to use information. Therefore, it is the task of the Management Information System, not to supply a pre-set package of information, but to supply greater versatility in pertinent, timely information.[4]

Another definition of a Management Information System was offered by Donald Heany for a business enterprise, but would be equally applicable to an educational institution:

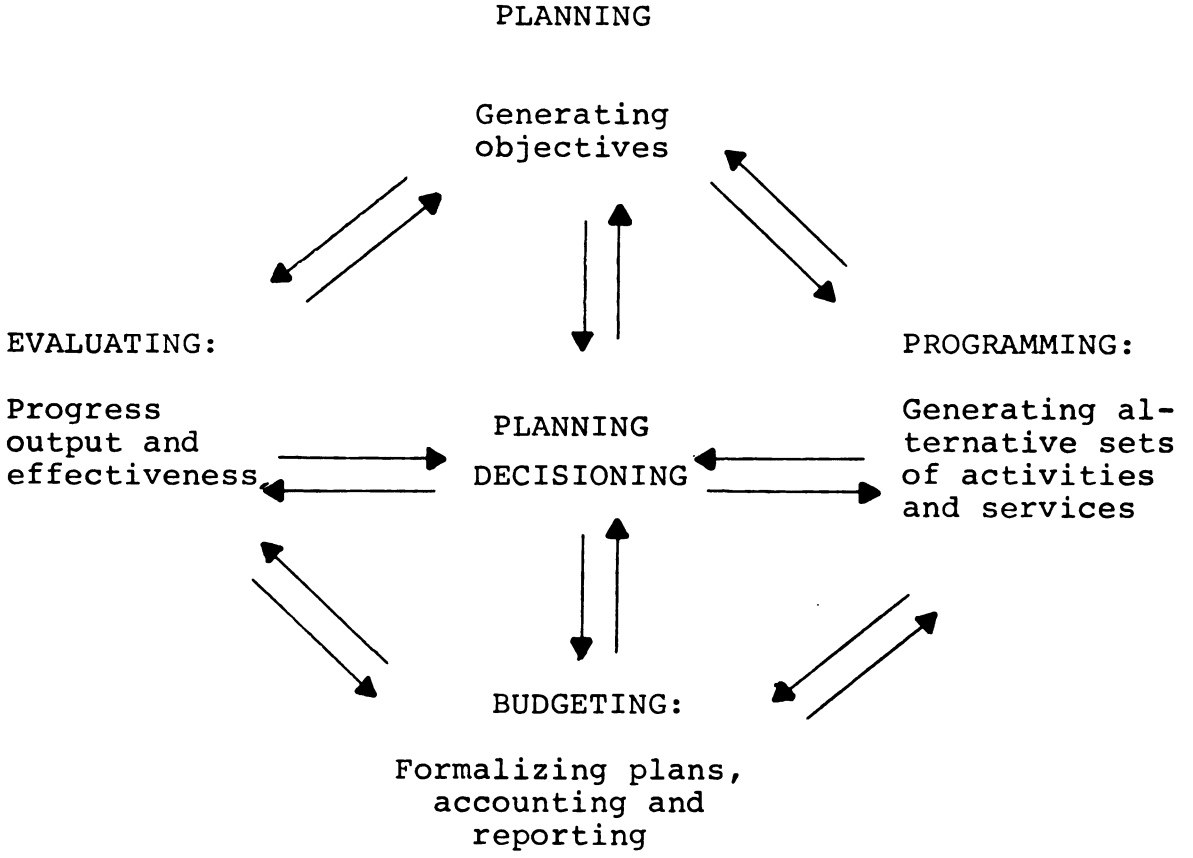
> A set of well-defined roles, practices, and procedures by which men, equipment, or both are to operate on given input so as to generate information satisfying specifications derived from the need of given individuals in given business situations.[5]

The essential role of a Management Information System is to provide a basis for the organization of information that will assist an educational institution's efforts to structure its objectives and evaluate the means to achieve them.[6] A central concern of a Management Information System is to assist educational administrators with the decision-making process. According to Joseph A. Maciariello and Willard F. Enteman:

> A management control procedure is one which provides the information an institution requires to allocate its resources to the programs that are most productive in fulfilling its objectives.[7]

The most effective management information system developed for educational institutions is the Planning, Programming, Budgeting, Evaluation System (PPBES). The

major processes are interrelated and provide a major support for decision making. The following diagram provides a conceptualization of the major processes of PPBES.[8]



PPBES, then, is a management information system for educational institutions which identifies needs and sets goals and objectives to satisfy the needs (planning process), provides alternatives for accomplishing the objectives (programming process), allocates resources to programs selected (budgeting process), and evaluates the effectiveness of the programs in attaining the goals and

objectives of the institution (evaluating process).[9] Sue Haggart suggested that an implication of PPBES in policy decisions is "a way of thinking about where you are going, where you want to go, how to get there, at what cost, and with what benefit."[10]

Components of PPBES

The Research Corporation has performed extensive research relative to PPBES, and described the components on a highly comprehensive basis.

> Planning is the continuing process of guiding internal change, so that the school adapts effectively to the dynamic society of which it is a part. As new information emerges (either externally from within society or internally from within the school system) an adjusted picture of reality is described for consideration by decision-makers. Planning is oriented to the relative emphasis upon the modification, creation or elimination of programs required to achieve the long-range goals for the school district.[11]

Table 2.1 reflects the activities and responsibilities of the planning process.

> Programming is defined as the process of developing program plans consisting of interrelated learning activities and support services with each plan representing a design for attaining educational objectives. The programming process brings together the information essential to the planning, budgeting and evaluating processes.[12]

Table 2.2 summarizes the activities and responsibilities of the programming process.

> Budgeting includes a series of activities which provide the decision-makers with resource and cost information essential for planning, programming and evaluating the allocation of resources. The budgeting activity interacts with the planning, programming and evaluating processes, from the inception of a possible plan to its

> implementation, modification and/or deletion. The activities include determining available resources, preparing the program budget, program costing and making special studies.[13]

Table 2.3 outlines the functions and activities of the budgeting process.

> Evaluation is the process of assessing the attainment of objectives and the worth of programs. Evaluation should compare and contrast performance, with projected and actual, with the requirements that led to the creation of the program plans.[14]

Table 2.4 suggests the activities and responsibilities of the evaluating process.

According to Frederich E. Balderston, "program budgeting is a conceptual schema for directing resource allocations according to the objectives of the institution."[15] As stated by the California State Department of Education,

> The program budget in a PPBES is a plan that relates proposed expenditures for programs, within a specific time frame to goals and objectives, based upon a program structure classification. It includes the proposed revenue sources for financing programs.[16]

Objectives and Program Structure

PPBES, in contrast to traditional planning and budgeting systems, emphasizes the need to identify the institution's goals and objectives. The programs are developed to achieve the objectives. Stephen Barro stated that:

> Objectives for program budgeting need to be stated at levels of abstraction that lie between the philosophical objectives and the behavioral, instructional objectives. To be useful at the program element level, objectives must be operational. That is they

> should be translatable into well-defined measures of effectiveness or performance, such as achievement test scores, attitudinal indicators, and measures of post-school success. Objectives at the subprogram and program levels represent aggregations of the program-element level objectives. They need not correspond directly to operationally defined effectiveness or performance measures, as do the lower-level objectives, but they should group the lower-level objectives in ways that are relevant to the larger strategies issues.[17]

Table 2.5 reflects the hierarchy program-element level objectives as conceptualized by Barro.

The program structure, according to Warren Gulko, is "a classification system that categorizes the activities of an organization according to their relationship to the organization's objectives."[18] Haggart defined program structure as follows: "The program structure, through programs, relates activities (and their resources) to objectives."[19]

The California State Department of Education wrote:

> Programs are coded by number to facilitate the collection of such data as costs and statistics in a variety of combinations and formats consistent with the program structure. These data are used to control program expenditures, to evaluate program effectiveness in terms of stated objectives, and to analyze the cost effectiveness of alternative programs.[20]

The breakdown of the program structure into (1) programs, (2) subprograms, and (3) program elements emphasizes the output orientation of PPBES. The emphasis of the program structure is on students attaining certain skills, attitudes, or behaviors as stated in the objectives. The

Research Corporation, in connection with the program structure, stressed the following points:

1. The basis for a program structure is an orientation for goals or objectives.
2. Programs relate to specific student needs.
3. The prime focus is upon a learner outcome.[21]

The program structure provides the basis for allocating resources at program levels and for the development of the program budget.

Educational performance objectives should be stated in behavioral terms so that attainment or accomplishment of the objective can be readily determined.[22,23] As Roy H. Forbes stated:

> Behavioral objectives tend to simplify the process for determining the effectiveness of the program, but they are not entirely necessary. Expressive objectives, if stated in measurable terms, can also be used.[24]

For example:

LEVEL	OBJECTIVE
1	For 90 percent of the graduating seniors who wish to enter the labor force to gain employment within three months of graduation as measured by a district survey.
2	For 90 percent of the graduating seniors who wish to enter the labor force to gain employment as desired in business, within three months of graduation as measured by a district survey.
3	For 90 percent of the business curriculum students to meet the following standards:

LEVEL	OBJECTIVE
	Typing--40 words per minute as measured by the IBM Test with 90 percent accuracy. Shorthand--60 words per minute as measured by the Gregg Test with a 2000 word vocabulary. Bookkeeping--Demonstrate ability to use journals, income statements, and balance sheets as determined by classroom tests. Office Machine Operation--Mean score equal to national average on UCR Tests.
4	Upon course completion 90 percent of the students will be able to accomplish the following based on classroom tests: (1) State and understand the basic accounting equation of double entry bookkeeping. (2) Understand the function of and make journal entries. (3) Understand three depreciation calculation methods.[25]

This position was further supported by Robert F. Ross, who stated that:

> All objectives are defined as specific, measurable results that guide planning decision toward previously determined goals. An objective has a result that can, in some way, be measured and that contributes to the achievement of a broader goal.[26]

Judson T. Shaplin suggested there may be some difficulty in the totality of measuring an objective:

> The more important the objectives, the more difficult it is to measure the achievement of them. It is easiest to measure immediate recall of information of the development of manipulative skills, more difficult to measure changes in attitudes and underlying values, perhaps most difficult to measure the basic process of learning capacity to think, the process of inquiry.[27]

Analysis

Robert F. Ross suggested that one of the most important functions of analysis is to "identify the types of costs that result from the activity being analyzed,"[28] but pointed out that "even if no precise estimate can be made of the magnitude of these costs, it is important to identify them prior to carrying out the action or activity and present them in writing to the persons rendering a judgement and decision about the activity."[29] Table 2.6 reflects the basic processes of systems analysis in PPBES.

"One of the central problems of any analysis is the choice of a criterion, or test of preferences, which would suggest the best combination of desirable factors."[30]

Gene Fisher, in reflecting on the role of analysis as used in program budgeting, stated that:

> First of all we must be very clear about what the purpose of analysis really is--particularly in a long-range planning decision context. Contrary to what some of the more enthusiastic advocates of quantitative analysis may think, I tend to visualize analysis as playing a somewhat modest, though very significant, role in the overall decision-making process. In reality most major long-range planning decision problems must ultimately be resolved primarily on the basis of intuition and judgement. I suggest that the main role of analysis should be to try to sharpen this intuition and judgement. In practically no case should it be assumed that the results of the analysis will make the decision. The really interesting problems are just too difficult, and there are too many intangible (i.e., political, psychological, and sociological) considerations that cannot be taken into account in the analytical process, especially in the quantitative sense. In sum, the analytical process should be directed toward assisting the decision-maker in such a

way that his intuition and judgement are better than they would be without the results of the analysis.[31]

A systematic approach to problem solving through analysis was offered by Edwin A. Read, and is presented in diagram form on Table 2.7. The approach is presented in two parts, and can be summarized as follows:

PART I--System Analysis
- 1.0 Identify and define the problems from a validated educational need
- 2.0 Determine the solution requirements
  - 2.1 Define the objective in measurable terms
  - 2.2 Determine the performance requirements (end-product specifications and criteria)
  - 2.3 Identify the constraints (conditions that might jeopardize the success of the mission)
- 3.0 Analyze the problem (problem analysis)
- 4.0 Generate alternative solutions
- 5.0 Select preferred solution
- 6.0 Analyze the solution
  - 6.1 Perform a mission analysis (identify the milestones or subobjective required for the partial attainment of the mission objective)
  - 6.2 Perform a function analysis
  - 6.3 Perform a task analysis
  - 6.4 Perform a method-means analysis

PART II--Systems Synthesis
- 7.0 Select preferred method-means for implementing each part of the solution
- 8.0 Implement the solution
- 9.0 Evaluate success of solution[32]

Virginia Held wrote:

> Along with facilitating an awareness of the objectives to be sought, PPBES provides for the application of a battery of new techniques, such as systems analysis and cost-benefit analysis in an effort to increase the possibilities of making rational choices between alternative means.[33]

Several concepts for analysis have been suggested by different authors. Two of the concepts most frequently

used in PPBES are cost-effectiveness analysis and cost-benefit analysis. Cost-effectiveness analysis helps the planner to relate the resources required by a program to its effectiveness.[34] The cost-effectiveness analysis "is useful in comparing alternatives when either the cost (budget level) or the effectiveness (achievement) is held constant."[35]

According to Charles L. Schultze, "Cost-effectiveness analysis is designed to solve problems by finding the most effective and most efficient solution on the basis of objective criteria."[36] Roy H. Forbes distinguished between cost-effectiveness analysis and cost-benefit analysis by stating that "effectiveness is a measure of the achievement of program objectives," whereas:

> Cost-benefit is an analysis of the cost and the resulting monetary benefits of one or more programs or program components. For example, a cost-benefit analysis of a vocational education program would attempt to identify all monetary benefits resulting from the program. Some benefits are easily identified, e.g., potential increased earning power and the resulting increase in income tax revenue. However, other benefits become more difficult to measure, e.g., possible decrease in welfare expenditures, possible decrease in losses due to criminal acts and benefits associated with cultural contributions of time and resources.[37]

Robert F. Ross suggested two approaches for analyzing costs and efficiency:

> (a) equalize costs and compare differences in benefits. This approach is appropriate for assessing the effectiveness of two or more activities in accomplishing the same objective. This approach also is best when funds are set and the problem is to make the best use of the available resources.

> (b) equalize benefits and compare costs. This approach is most suitable for determining the most efficient way of achieving a set goal or objective. This approach also permits the evaluators of the program to determine where the point of diminishing returns is reached, by measuring the benefits that result from additional resources.[39]

Margaret B. Carpenter and Sue A. Haggart and the Research Corporation stated that:

> Cost-effectiveness analysis is, quite frankly, a technique for comparing programs, and may be used:
> --to help assess the relative worth of several innovative programs with the same educational outcome (such as improvement in reading achievement);
> --to determine whether a single program is becoming more or less effective as time passes so that steps may be taken to improve it, if necessary;
> --to help assess the relative worth of the same program for different student populations (such as those with differing socioeconomic backgrounds) or in different school settings.[40,41]

According to J. Allan Thomas, "effectiveness is the measure of the extent to which the objective (or weighted index) is achieved."[42] By definition, effective means "adequate to accomplish a purpose; producing the intended or expected result."[43] It follows then that objectives or purposes must be clearly described and specified in indisputable terms if effectiveness is to be measured. Because resources generally will not meet the demands for these limited resources, R. J. Ward defined efficiency as "the art of getting the maximum result possible with the minimum amount of cost . . . maximizing the ratio of outputs to inputs."[44]

Multiyear Planning and Cost Estimating Relationships

One of the main concepts of PPBES is the requirement for educators to make multi-year plans and the review of the consequences a current decision will have on resources in future years. "Since program budgeting involves multi-year planning, total cost must include costs for the entire planning time horizon."[45] "The multi-year financial plan presents financial data for existing and alternative programs projected for a period of several years."[46]

The Research Corporation supported this position:

> An attempt should be made to derive the incremental program cost by first developing a total multi-year program cost for continuation of present commitments and a total cost for a comparable multi-year period for each alternative program to be considered.[47]

According to Charles L. Schultze, the system must provide an aggregate measure of built-in increases on a multiyear basis and reflects upon each major decision with its future year consequences in the context of that aggregate.[48] Frederich E. Balderston argued that:

> One basic idea in PPBES is to specify what is to be accomplished in each program in each future year and then to calculate how many resources will be needed for the program and to specify when those resources have to be acquired and at what cost in order to meet the schedule of the program. This system forecasts the cost of the program over a series of years and sets forth the timing of these costs, thereby avoiding seemingly innocuous first-year commitments to programs that eventually turn out to be far more costly than originally contemplated.[49]

Planning on a long-term basis is concerned with the goals of the school, but emphasis is also placed on the feasibility of the plans in view of available resources. Novick stated that:

> Financial planning for a period longer than a year must always carry the qualification that provision of adequate resources cannot be guaranteed. If resource levels are changed, however, a financial plan that is more directly translatable to program output simplifies the revision of nonfinancial goals.[50]

An important element of multiyear planning is the necessity for estimating costs. As educational institutions generally expend 85 percent[51] of their total operational financial budget on salaries and related fringe benefits, the following discussion on cost estimating relationships is limited to salaries. The first example for estimating salaries and number of personnel in future years was suggested by James A. Dei Rossi. Assuming that the average current salary was determined and that the future increases could be predicted at 5 percent annually, then the average salary for each year could be computed by using the formula offered by Dei Rossi:[52]

$$S_1 = \text{average salary } (1 + .05)^{t_1}$$

Where S = average salary for each year
t = time variable for each year

The next step is to determine the staff required to fulfill the institution's objectives. "Average Daily

Attendance is an appropriate measure of size for estimating total operations staff requirements."[53] Dei Rossi pointed out that:

> Obviously, these results, although empirically derived, are based on several assumptions and judgements. It was assumed that the average salary was sufficiently representative to be used for estimating future change in average salaries. Also, the average district experience of several districts was used to estimate the staff requirements of this district. However, one advantage of the type of approach outlined for estimating future costs is that it does force these kinds of assumptions to be made explicit.[54]

The Research Corporation supported the cost estimating relationships offered by Dei Rossi, stating that:

> Many estimating relationships are simple mathematical statements that a cost or resource is directly proportional to some known characteristics of that resource. . . . Similarly, there are factors for estimating nondollar resources; a student-teacher ratio is such a factor.[55]

Users of PPBES

A review of the institutions presently using PPBES is not intended to be all inclusive. The purpose of reviewing some of the users and laws related thereto is to add credibility to the applicability of recommending implementation of PPBES in an overseas educational institution. A significant number of elementary and secondary schools, colleges and universities, and state and federal governments have adopted PPBES in recent years.

Harry Hartley reported that:

> As far as the current state goes, it is difficult to determine exactly how many states have mandated some

> form of PPBS and how many local schools are actually "doing" PPBS. My own judgement is that more than 1,500 local schools are actually engaged in PPBS development in operational sense. Operational usage of PPBS continues to grow.[56]

"In August, 1965, President Lyndon B. Johnson directed all the major civilian agencies of the federal government to install planning, programming and budgeting systems (PPBS) along the general lines of the Defense Department model."[57] Table 2.8 reports the federal institutions using the PPB System.

The State of Michigan required all colleges and universities to adopt PPBES, as stated in the "Instruction" sheets:

> In February, 1971, Governor Milliken formally committed the Executive Branch of Michigan State Government to an improved decision process. The design of a Program Budget Evaluation System (PBES) was undertaken at that time, with the objective of producing the fiscal year 1973-74 executive budget recommendations under the new system. A recognition of the differences in the relationship between the state and institutions of higher education plus the operational problems faced by the colleges and universities in adapting to the new system led to an expanded time frame for the implementation of the full PBE System in higher education. Full system implementation in higher education is targeted for the fiscal year 1974-1975 executive budget cycle with a skeletal system in place for the fiscal year 1973-74 budget cycle.[58]

Table 2.9 shows the institutions of higher education that were required to employ PBES in Michigan.

The National Center for Higher Education Management Systems (NCHEMS), supported by the U.S. Office of Education,

has made significant progress in developing uniform program classification structures. The Program Classifications Structure

> provides a standard means of identifying and organizing the activities of higher education in a program-oriented manner. It is intended to facilitate the organization of data for planning and analysis purposes. . . . It will serve as a vehicle for nationwide data exchange by providing a taxonomy of higher education activities that serves as a structure for classifying the various categories of cost information relative to the general programs of higher education.[59]

A subsequent study by NCHEMS resulted in the Resource Requirements Prediction Model (RRPM). According to the NCHEMS, the new RRPM provides educational "institutions with a flexible tool with which to analyze various institutional alternatives for utilization of a limited set of resources."[60]

> RRPM generates four types of reports, any or all of which may be requested by the user. These include: (1) organizational unit reports providing line-item budgets for various organizational units within the institution, (2) program budget reports indicating the discipline or department contributions to various instructional programs, (3) institutional summary reports, and (4) formatted display reports showing all parameter data for the institution.[61]

The International Business Machines Corporation has developed a budget/finance program product system designed to accommodate users of United States Office of Education publications in the area of schools accounting for computer application. In particular, it is designed to facilitate implementation of concepts such as the planning, programming, budgeting system (PPBS) by the user.[62]

Paul Bethke reported the desire to improve educational accountability in the state of Colorado:

> In 1971 the Colordao General Assembly passed three laws intended to improve the quality of public elementary and secondary education in the one hundred and eighty one school districts of the state. The three statutes are (1) the Comprehensive Education Planning Act; (2) the Program, Planning, Budgeting and Evaluation System Act; and (3) the Educational Accountability Act. Although these acts were written and passed as separate laws, they are, in fact, dependent upon each other for the achievement of one purpose, accountability. . . . The PPBES Act focuses on the development of a uniform budget format which will present educational programs in terms of pupil achievement related to expenditures.[63]

As stated previously, the study and publication by the Research Corporation was the most significant and comprehensive report on PPBES in connection with elementary and secondary schools.

All of the components of PPBES have been used in businesses for many years, such as setting goals and objectives, planning models and designs for future development, forecasting needs, estimating unit costs and required sales prices, and evaluating finished products. Charles Horngren emphasized that cost accounting stresses three major objectives:

1. planning and controlling routine operations.
2. nonroutine decisions, policy making and long-range planning.
3. inventory valuation and income determination.[64]

The major difference in business outputs as compared to education outputs is the ability of business to measure finished products. The accounting system can also determine

precisely any cost variances derived during the manufacturing processes. For example, assuming a manufacturing concern, using a standard cost system,[65] had estimated an annual production of 2,000 finished units at a cost of $100 for each unit (direct labor $65, direct materials $25, and overhead $10) or a total cost of $200,000; and assuming also that the actual production for the year was 1,900 finished units at a total cost of $205,000 or a unit cost of $108. Through the standard cost system, a business can determine specifically what caused the variance between estimated and actual. Some of the suggested causes are as follows:

Labor variances:
- Required more time to produce
- Used higher priced labor

Material variances:
- Required more materials or higher spoilage
- Unforeseen increase in cost

Manufacturing variances:
- Labor strike or malfunction of equipment causing a shutdown of the plant
- Unforeseen overhead expenses

Steps for Implementation

Tables 2.1, 2.2, 2.3, and 2.4 provide the tasks and responsibilities matrix for each of the components of PPBES. Table 2.10 presents in diagram form a conceptualization of the implementation and operation phases of PPBES. The main steps for implementation of PPBES, as shown in Table 2.10, are as follows:

Step 1. Appoint Task Force
Step 2 Orient the Task Force
Step 3. Identify constraints
Step 4. Evaluate current systems
Step 5. Identify and document inadequacies between current practices and those required by PPBES
Step 6. Develop communications plans
Step 7. Make presentations to educational staff
Step 8. Make presentations to nonstaff groups
Step 9. Prepare implementation plan
Step 10. Develop training plan
Step 11. Conduct training sessions
Step 12. Assign tasks
Step 13. Arrange existing programs into tentative program structure

Chester Kiser and John P. Edwards conducted a national study of 140 school superintendents to determine the results or experiences in implementing PPBES. They concluded that the following, as a preplanning process, would be helpful in the implementation of PPBES:

1. Performance plans should center upon explicit, stated objectives that specify the desired outcomes of results of the plans. These objectives should be established before beginning to implement PPBES.
2. The criteria for evaluating the results of the performance plans should be established before beginning to implement the plans.
3. Time-frames or deadlines for the performance plans should be determined before implementation begins.
4. Responsibility for implementing performance plans should be assigned before implementation begins.
5. The opportunity to participate in developing the performance plans should be afforded those employees to be affected by the implementation of the plans.
6. Employees who will be involved in PPBES should receive formal training in the performance plans before their implementation.
7. Alternative ways to implement policy plans should be examined before deciding upon specific courses of action that result in performance plans.
8. Systems techniques (e.g. PERT) should be used in the development of performance plans.
9. Estimates of the total resources needed to implement the performance plans should be determined before beginning their implementation.[66]

Kiser and Edwards also reflected upon some of the problems of implementation, and concluded from their survey:

> The major problem encountered was difficulty in developing performance indicators, or criteria to evaluate success in accomplishing objectives. . . . The proper statement of an objective must include measurable criteria for evaluating the successful accomplishment of that objective. . . . A shortage of time to fully develop PPBES implementation plans was the second most frequently encountered problem. . . . The third major problem . . . was the inability to develop multi-year programs and fiscal plans. . . . Another problem encountered as frequently, was the difficulty in getting staff members interested in PPBES. This may be related to inadequate plans that fail to include realistic explanations to every employee of the benefits he can derive from using PPBES, such as improved work results. Human beings tend to commit themselves to organizational objectives that can satisfy their personal needs, such as, satisfaction of ego and self-actualization. Other PPBES implementation problems experienced to a significant extent include: lack of administrators trained in PPBES; difficulty in the development of goals and objectives; trouble in obtaining staff agreement on PPBES plans; misunderstanding of PPBES on the part of staff members, board members, and community residents; and overall staff opposition of PPBES.[67]

Summary

It was stressed that PPBES is an important tool for an educational management information system, and provides a basis through analysis of alternatives for planning and decision making. PPBES provides for a focus on the interaction of component parts of the system in relation to educational planning and how the processes contribute to best allocate scarce resources. Goals, programs, objectives, and the program structure are important elements because of the output-oriented nature of PPBES. Emphasis

was placed on the correlation of the hierarchical program structure and level of objectives that aggregate at each level in attaining the overall goals of the institution.

A major role of PPBES is to provide a framework for the organization of information, which will allow an institution to structure its objectives and a systematic method for evaluating the means to attain them. A focus upon the analysis of alternatives requires that objectives be stated in measurable and attainable terms for which effectiveness can be assessed. Resource analysis supported with an analysis of effectiveness provides quantified data for administrative decision making.

It was also emphasized that long-term planning and cost estimating relationships are essential in PPBES. Multiyear planning, generally five years, makes it necessary to examine and provide for future implications of current decisions. The cost estimating relationship provides an important step for predicting incremental costs and resource requirements.

A review of the current users and studies of PPBES was made. However, it appears that the studies are mainly predictive and lack empiricism, especially with regard to longitudinal benefits.

In the final section of the review, steps for implementation were outlined, including some of the problems of

implementation experienced by the current users of PPBES. The problems outlined appear to be man-made rather than technical.

In Chapter III, the design of the study and the objectives of the study are presented.

Footnotes--Chapter II

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[19]Haggart, op. cit., p. 230.

[20]California State Department of Education, op. cit., p. 12.

[21]Research Corporation, op. cit., p. 69.

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[23]Warland D. Wight, "Obtaining Competence With Competencies: A Case Study in Higher Education," Educational Technology, November, 1974, p. 46.

[24]Roy H. Forbes, "Cost-Effectiveness Analysis: Primer and Guidelines," Educational Technology, March, 1974, p. 21.

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[26]Ross, op. cit., p. 51.

[27]Judson T. Shaplin, "Practice in Teaching," Howard Educational Review, 1965, p. 38; quoted in Research Corporation, p. 178.

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[35]Haggart, op. cit., p. 157.

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CHAPTER III

DESIGN OF THE STUDY

In this chapter, the framework and procedures used for this study are described. Included are the sources of information and the objectives and limitations of the study. In Chapter II, it was indicated that there is considerable research and documentation regarding the needs for and benefits of PPBES for educational institutions. However, it appears that American-sponsored overseas schools have made little effort toward developing or implementing PPBES. Therefore, the main purpose of this study is to develop a program budgeting model, specifically for the American Community Schools of Athens, Inc., Athens, Greece.

Some variables need to be standardized before relationships can reasonably be deduced. Frederick Hillier and Gerald Liberman, in referring to the development of a model, suggested that:

> A model is necessarily an abstract idealization of the problem, and approximations and simplifying assumptions generally are required if the model is to be tractable. Therefore, care must be taken to insure that the model remains a valid representation of the problems. The proper criterion for judging the validity of a model is whether or not it predicts the

relative effects on the alternative courses of action with sufficient accuracy to permit a sound decision.[1]

Framework and Procedures

This study does not involve experimental research; therefore, hypotheses are not presented for testing. The study is descriptive in nature, and endeavors to identify program elements and resources required to maintain the level of performance which in turn aggregates to meet the goal orientation of PPBES.

This study uses the technique recommended by Walter R. Borg,[2] direct contact analysis, which involves the establishment of precise classifications. This relates directly to the intent of the present study: developing hierarchical program structures. According to George J. Mauly,[3] the direct content analysis technique facilitates descriptive studies for use in educational situations.

The final end-product of this study, the development of a program budgeting model for the American Community Schools of Athens, Inc., can be used by other overseas schools with slight modifications based upon the constraints of the particular school.

Sources of Information

The study involved a detailed evaluation of the traditional annual budget document, which facilitated the collection of data necessary for the preparation of the

program budget. The program budget includes all of the programs offered and presently utilized by the American Community Schools of Athens, Inc. Implicit in the conceptual design of PPBES is the involvement of the professional staff. Identifying the program elements requires the time and cooperation of administrators and teachers. Simon Ramo pointed out that:

> Doing something substantial about the problem is impossible unless we satisfy and obtain the cooperation of many semi-autonomous groups not accustomed to joining up to work together.[4]

Available data from student records, faculty personnel files, and administrative policies as approved by the Board of Education in the official Minutes, as well as current accounting records, were reviewed and within the constraints imposed were related to program activities. Special reports by the Assistant Superintendent for Personnel and the Assistant Superintendent for Business Affairs were reviewed and made an integral part of the study. The By-Laws of the Parents Association were essential in establishing the parameters for the operation of the school.

Objectives of This Study

The primary purpose of the study was to develop a program budgeting model for the American Community Schools of Athens, Inc., through the conceptual designs of PPBES. PPBES was developed with the knowledge that institutional

needs will exceed the resources normally available to satisfy those needs. Therefore a system of providing logical choices, an essential element in PPBES, is necessary for effective administration of an educational institution.

Five objectives were considered necessary to accomplish the purpose of the study. The first objective was to investigate administrative policies approved by the Board of Education and the By-Laws adopted by the governing Parents Association to determine if there were any constraints on implementing a program budget. To determine the approved administrative policies required a review of the past several years of official Minutes recorded from the monthly and special meetings of the Board of Education. The present By-Laws were supported by a review of the official Minutes recorded from the annual and special meetings of the Parents Association.

One of the primary concerns was to establish whether there are any policies that would affect the cost estimating relationships and have a subsequent effect on current and long-range budgeting. The Research Corporation pointed out:

> It would be prudent to consider the long-range aspects of program resource commitments in developing alternative program plans. For example, the district may have sufficient resources to operate a specific program plan for the next fiscal year, but a forecast change in enrollment or size of the student target group during the second, third or fourth year may

> materially alter the resource commitment. Thus it is essential to consider the multi-year resource commitment of each alternative program plan.[5]

Long-range budgeting should reflect the financial consequences of both routine annual operating costs and periodic nonrecurring costs. In comparing alternatives, costs must be stated in similar terms but should include any unusual costs that would be incurred should a particular program element or subelement be selected for implementation. These costs, for example, would include additional books for the library, additional equipment for the instructional media center, and extra expense incurred by the supporting staff. G. H. Fisher[6] suggested the "total cost" concept, which recognizes external costs when analyzing alternative programs. In developing a program budget model for this study, only the direct instructional costs were considered, such as space, money, personnel, equipment, and supplies. Using a well-defined model must insure that the costs of all alternative programs are treated consistently. Decisions are based on a complete understanding of the resources that will be consumed and adequate comparability of the various alternatives.

The second objective was to determine the administrative and instructional areas and how resources were traditionally allocated to these areas. There were three administrative areas: (1) Office of Superintendent, (2) Office of Assistant Superintendent for Personnel, and

(3) Office of Assistant Superintendent for Business Affairs. The instructional areas were identified as (1) high school, grades 9-12; (2) middle school, grades 6-8; (3) Halandri Elementary School, grades K-5; and, on a separate campus, (4) Hellenikon Elementary School, grades K-5.

Robert C. Anthony[7] stressed the importance of identifying how funds are distributed within the formal organizational structure. Melvin Ashen suggested the following questions in connection with the budget:

1. What is the present budget commitment to relevant ongoing activities?
2. What increment gains in positive contributions to problem resolution might be attributed to added budget commitment?
3. What significant minimum or threshold budget levels would underwrite useful activity problem areas currently untouched by ongoing programs?
4. What feasible stepped-up rates of program activity can be identified?
5. What budget costs should be associated with them?[8]

Answering these questions is helpful in identifying resource required activities of the traditional budget.

The third objective was to determine the program elements for each of the instructional areas. Guidelines suggested by the Research Corporation[9] and the California Department of Education[10] for developing a hierarchical program structure were employed. The program structure is an important tool in reflecting the relationship of the traditional budget with the program budget. The program budget can easily be translated into the traditional budget

and vice versa. This translation is important in the early stages of implementing PPBES for legal requirements and "to clarify the relative quantitative importance of various programs and program elements."[11]

James A. Dei Rossi explained that:

> The expression of the relationship between the program budget and the traditional budget is generally referred to as a "crosswalk." A crosswalk is basically a tabular array, with the columns showing the traditional budget cost categories and the rows showing the program budget cost categories. Underlying the crosswalk, of course, must be a set of definitions and procedures for allocating the data in a cost category in one budget to a corresponding cost category in the other. The actual level of detail at which the crosswalk translation is performed can vary greatly.[12]

Table 3.1 provides an example of the function of a crosswalk. The Research Corporation suggested that "the crosswalk is a useful communication device between those familiar with the traditional budget and those who must implement PPBES."[13]

The fourth objective was to perform the function of program budgeting by allocating the educational resources to program elements. This objective primarily involved correlating the second and third objectives. Harry J. Hartley stressed that:

> Systems analysis is the general conceptual basis for program budgeting and program budgeting is the detailed expression of the methodology of systems analysis. The program of a school cannot be adequately designed and supported financially without an understanding of the total system that they support.[14]

James A. Dei Rossi suggested that "one of the first tasks to be performed . . . in developing a cost model is that of defining and listing all the major categories of resources required by the district."[15] For purposes of this objective, educational resources allocated to program elements were money, personnel, space, equipment, and supplies. To accomplish the purpose for this objective and because of the nature of allocating historical costs, it necessarily required the subjective opinions of individual Board members, the superintendent, the assistant superintendents, and most important, the principals. However, it appears that this objective was performed with a reasonable degree of accuracy. Formulas generally cannot be used in allocating resources to program elements. The Research Corporation pointed out: "The problem of resource allocation in its simplest form is: What resources are to be applied toward which goals in what proportions and with what effect?"[16]

The fifth objective was to review the educational objectives and to develop criteria for measuring attainment of those objectives. Harry J. Hartley[17] and E. S. Quade[18] pointed out that educators have a poor understanding of how to measure objective attainment. Roy H. Forbes,[19] Robert F. Ross,[20] and Warland D. Wight[21] stressed the fact that objectives must be stated in terms that are observable

and measurable. The Research Corporation further pointed out:

> The evaluation of performance is motivated primarily by our need to assess the effectiveness of a program in achieving objectives, and in this sense this description is only a means to an end. . . . We must utilize measures of performance to represent in operational or behavioral terms selected effects of a program: within statistical limits, the values of performance measures are assumed to represent the axes of a program's performance description.[22]

Howard Bowen stressed the need for longitudinal assessment of programs:

> Alexander Astin, an expert on the measurement of educational outcomes, makes a strong plea for better longitudinal data and for the design of measurements that will help universities to assess their effect on students.[23]

Limitations

Each overseas school is a unique entity that must develop programs best suited to the needs of its particular type of students. As a consequence, the program structure and the program budget model developed for one overseas school may not be feasible for the goals and objectives of a school in another country. This study and proposed model were necessarily limited to the data available and applicable to the American Community Schools of Athens, Inc.

As the study was of a descriptive nature and had no empirical design, hypotheses were not presented for testing. However, it is possible to collect data over several years and develop hypotheses therefrom.

Summary

In this chapter, the framework and procedures used for completing this study were presented. The main purpose of the study was to develop a program budgeting model for the American Community Schools of Athens, Inc. The sources of information included the annual budget document, student records, faculty personnel files, accounting records, administrative policies, and special reports by the administrative staff. Five primary objectives were involved in the study: (1) to investigate administrative policies and By-Laws to determine if there are any constraints on implementing program budgeting, (2) to determine the administrative and instructional areas and how resources were traditionally allocated to those areas, (3) to determine the program elements for each of the instructional areas, (4) to perform the function of program budgeting by allocating the educational resources to program elements, and (5) to develop criteria for measuring attainment of the educational objectives. It was indicated that the study was limited to data available and applicable to the American Community Schools of Athens, Inc.

An analysis of results of this study is presented in Chapter IV.

Footnotes--Chapter III

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[4]Simon Ramo, Cure for Chaos (New York: David McKay, 1969), p. 7.

[5]Research Corporation of the Association of School Business Officials, Educational Resources Management Systems (Chicago, Illinois: Research Corporation, 1971), pp. 82-83.

[6]G. H. Fisher, Cost Considerations in Systems Analysis (New York: American Elsevier Publishing, 1970), pp. 24-63.

[7]Robert C. Anthony, Planning and Control Systems: A Framework for Analysis (Boston, Mass.: Harvard University Press, 1965), p. 180.

[8]Melvin Anshen, "The Federal Budget as an Instrument for Management and Analysis," in Program Budgeting--Program Analysis and the Federal Budget, ed. by David Novick (Cambridge, Mass.: Harvard University Press, 1965), p. 7.

[9]Research Corporation, op. cit., p. 69.

[10]California Department of Education, Conceptual Design for a Planning, Programming, Budgeting System (Sacramento, Calif.: California State Department of Education, 1969), p. 12.

[11]James A. Dei Rossi, "The Program Budget and the Traditional Budget," in Program Budgeting for School District Planning, ed. by Sue Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), p. 50.

[12]Ibid., p. 50.

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[14]Harry J. Hartley, Educational Planning, Programming, Budgeting: A Systems Approach (Englewood Cliffs, New Jersey: Prentice-Hall, 1968), p. 69.

[15]James A. Dei Rossi, "Cost Models and Analysis of Cost," in Program Budgeting for School District Planning, ed. by Sue A. Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), p. 104.

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[18]E. S. Quade, Systems Analysis Techniques for Planning-Programming-Budgeting (Santa Monica, Calif.: E. S. Quade (Rand Corporation), 1966), p. 8.

[19]Roy H. Forbes, "Cost-Effectiveness: Primer and Guidelines," Educational Technology, March, 1974, p. 21.

[20]Robert F. Ross, "How to Compare Your Educational Costs and Benefits," Educational Technology, September, 1974, p. 50.

[21]Warland D. Wight, "Obtaining Competence With Competencies: A Case Study in Higher Education," Educational Technology, November, 1974, p. 46.

[22]Research Corporation, op. cit., p. 216.

CHAPTER IV

ANALYSIS OF RESULTS OF THE STUDY AND A PROGRAM BUDGETING MODEL FOR AN AMERICAN-SPONSORED OVERSEAS SCHOOL

In this chapter, information is presented in two sections. First, the results of the study report the findings from the investigation of the five objectives stated in Chapter III. Second, a program budgeting model is developed for the American Community Schools of Athens, Inc.

Review of Administrative Policies and By-Laws

The first objective was to review the administrative policies and the By-Laws to determine if there are any supplemental or constraining forces that would affect the implementation of a program budget. Two important factors were discovered that have an effect on the preparation of either a traditional or a program budget. On April 24, 1972, the Board of Education[1] approved an administrative policy restricting the employment of administrative and instructional staff on a ratio basis of one staff member for every 15.5 students. The administrative

policy established guidelines for the employment of staff based on student enrollment at various levels as follows:

Estimated number of students (1972-73)		2,250
Staff:		
Administrative	10.4	
Librarians	2.0	
Counselors	3.0	15.5
Teachers		120.5
Paraprofessionals (aides)		9.5
TOTAL STAFF		145.5
Ratios:		
Students per teacher		18.7
Students per teacher and paraprofessional		17.3
Students per total staff		15.5

This administrative policy is important in developing the cost estimating relationships recommended by James A. Dei Rossi.[2]

The second important factor was two articles in the By-Laws. Article VII, Section 1 of the By-Laws states that:

> Dues, tuition charges, and all assessments shall be clearly set forth in the annual budget to be adopted by majority vote of those members of the Association present at the December meeting when the budget is voted. Subsequent changes in dues, tuition and assessments can be made by majority vote of members of the Association present at the December Association meeting.[4]

Article VIII, Section 4, of the By-Laws states:

> In the event a decision is made to increase costs per student (tuition), such decision will be

effective only beginning with the school year subsequent to 31 December.[4]

Since tuition rates must be approved by the Parents Association in December preceding the fiscal year of implementation according to the above sections of the By-Laws, this requires some long-range planning for setting tuition rates. One relevant factor that was discovered from the review of the Minutes was the procedure for revising the annual budget. Although an administrative policy could not be found to support formal revision of the annual budget, it was determined that the annual budget was presented to the Parents Association to facilitate the need for increased tuition rates. Then the annual budget was consistently revised and presented for approval by the Board of Education in October and April, based on revised estimated student enrollments. The final budget reflecting actual income and expenses was presented for approval by the Board of Education in August.

Traditional Allocation of Resources

A review of the traditional budget was necessary to determine the types and categorization of income and expenditures incurred by the American Schools of Athens, Inc.

It was determined that income from student tuition for school years 1972-73 and 1973-74 was approximately 98 percent of total income. Table 4.1 reports the major

categories of income and expenditures for the six-year period from July 1, 1968, to June 30, 1974. The significant increases between 1970 and 1971 and 1972 and 1973 were a result of increased tuition rates (reported on Table 1.3) and a related increase in salaries.

The expenditures for direct instructional costs were:

1. Salaries
2. Other Staff Costs
3. Materials
4. Other
5. Equipment

Teacher salaries are based on a salary scale that allows increments for advanced degrees and years of service, as reported on Table 4.2. Teacher contracts are generally for two years. It was also previously determined from administrative policies that the number of teacher positions is allocated to the instructional areas based on student enrollment. Other staff costs include fringe benefits, travel to and from the United States, relocation allowances, and other costs related to employment of the staff. Instructional materials include textbooks and teaching supplies; these funds are allocated on a dollar amount per student based on the subjective judgment of the superintendent, assistant superintendent for business affairs, and the principal of each instructional area. Instructional other includes costs for teacher conferences and workshops. Instructional equipment is included under

the category "capital," and is allocated on the basis of requests from the principals and approval by the superintendent.

A brief analysis of the surplus for 1972-73 of $113,000 as compared to a deficit for 1973-74 of $136,000 was presented in Chapter I. The principal reason for the deficit was that teacher contracts for 1973-74 were committed on the basis of estimated student enrollments that did not materialize. To support this analysis, the budget approved by the Parents Association based on 2,500 students was compared with the final actual budget based on 2,240 students (shown on Table 4.3). Generally, all major actual expenditures, except salaries, were less than the budgeted amounts. Using the administrative policy of one staff member for every 15.5 students, it could be determined that the school was overstaffed by 14.6 positions during 1973-74, based on 2,240 FTE students:

	FTE Students	Staff Positions Allowable Under Administrative Policy
Estimated	2,500	161.3
Actual	2,240	144.5
Actual Staff Positions		159.1
Overstaffed		14.6

One conclusion that can be drawn is that if the American Community Schools of Athens, Inc. had had the flexibility to reduce staff positions equal to the decrease

in enrollment, the deficit for 1973-74 could have been eliminated; for example, the average teacher salary of $9,300 times 14.6 positions equals $135,700.

An analysis was made of the enrollment by grade levels for the past six years (1968-69 to 1973-74), and is reported on Table 4.4. This analysis was made to determine if changes of student enrollment in grade levels would require a reassignment of teachers among elementary, middle, and high school. The conclusion that can be drawn from Table 4.4 is that with reasonable forecasting of enrollments and a correlation with hiring practices, this would not create a major problem. Table 4.5 is presented to reflect the problem of student turnover during the year, along with Table 4.6, which indicates the sponsoring agents of the students. Table 4.6 shows that approximately 50 percent of the total number of students are children of military personnel, and according to Captain Horace Hensley,[5] U.S. Air Force and Treasurer of the Board of Education, approximately one-third of the military personnel rotates each year consistently throughout the year. The conclusion that can be drawn from Tables 4.4, 4.5, and 4.6 is that the transient nature of the student population could create a serious problem for the American Community School of Athens, Inc., especially when this results in an imbalance among instructional areas.

The average total expenditure per student was computed by dividing the total expenditures by the number of FTE students (Table 4.1). This would account for all expenditures of the school, but not by program level. However, for the purposes of this study only the direct instructional costs were determined and allocated to program elements. This position was supported by James A. Dei Rossi:

> The convention of not attempting to allocate indirect costs has gained acceptance among practitioners of program budgeting because it reduces the danger of unknowingly biasing costs of individual programs. Such biasing can occur because it is generally possible to conceive of more than one logical rule for allocation; and different rules can produce different results for identical circumstances.[6]

Dei Rossi further explained the definition of indirect costs:

> Indirect costs are those support costs not directly traceable to specific programs. Thus, the cost of administration services performed by the district superintendent or school principals is generally viewed as indirect and not allocated.[7]

Program Elements of the Instructional Areas

The purpose of this section of the study is to identify program elements at a given level of the program structure to enable an allocation of resources consistently throughout the four instructional areas. Developing a program structure is an essential part of PPBES.[8] As the American Community Schools of Athens, Inc. has traditionally been input oriented--that is, concerned with the

teachers, supplies, and equipment required for each instructional area to perform at a given level--it was difficult to develop program elements and required considerable effort by the superintendent, assistant superintendents, and the four principals. However, using the hierarchical program structure as recommended by the Research Corporation[9] and Stephen Barro,[10] the following program elements for the four instructional areas were determined in agreement with the administrative staff:

Program Elements	Elementary School	Middle School	High School
Reading and Language Arts	x	x	
Mathematics	x	x	x
Science	x	x	x
Social Studies	x	x	x
Art	x	x	x
Music	x	x	x
Physical Education	x	x	x
Foreign Language	x	x	x
Special Programs	x	x	x
Industrial Arts		x	x
Home Arts		x	x
English			x
Business			x

The program elements were developed primarily for allocating resources and further developing a program budget. Developing subelements for allocating resources at this point, according to the administrative staff, would involve considerable effort and subjective judgment, and the end result would not be meaningful.

Allocation of Resources to Program Elements

The previously determined direct instructional resources were teachers and the related costs, supplies, equipment, and miscellaneous direct costs. In allocating these resources to program elements, it was necessary for the principals to identify each teacher and the percentage of time consumed by each program element. A review of the personnel files revealed each teacher's salary and related benefits. In allocating the resources of supplies and equipment it was necessary to review purchase requisitions, purchase orders, and payment vouchers, and to a certain extent required the subjective judgment of the principals. Duplicating services were traced to the requesting teacher and in turn to the program element. The above explanation is an oversimplification of the time and effort required to restructure the traditional input-oriented budget and reallocate funds based on a program budget, but explains the procedure necessary to develop a program budget from historical data. The end-products of allocating resources to program elements are presented on Tables 4.7, 4.8, 4.9, and 4.10. The allocation of resources is not intended to be absolute, but is considered reasonable under the circumstances of dealing with historical cost. The average cost per student for each program element clearly contrasts the variations in required resources

to maintain the expected level of performance. A summary of average costs is as follows:

	Hellenikon Elementary School	Halandri Elementary School	Middle School	High School
Reading and Language Arts	$176	$214	$127	$...
Mathematics	129	108	114	128
Science	68	102	95	123
Social Studies	64	112	87	129
Art	24	31	51	154
Music	20	34	88	73
Physical Education	28	44	56	75
Foreign Language	38	32	93	138
Special Programs	192	152	127	83
Industrial Arts	...	...	73	148
Home Arts	...	...	138	183
English	...	...	...	105
Business	...	...	...	146

It can readily be determined that the average cost per student for the various program elements is significant. However, in PPBES, the program elements that best attain the objectives are the primary considerations and the costs are secondary unless the two program elements in attaining the objective are equal. Analyzing the variances in average cost per student for comparable program elements was not considered essential or within the realm of this study.

The information generated from the average cost per student could provide a basis for selecting programs for implementation during a period of increasing enrollments or for deleting programs during a period of decreasing enrollments. However, the average cost per student on a

one-year basis is a misleading measure. Accumulating cost over several years and projecting estimated costs for at least five years would be invaluable for the decision maker in making comparisons and selecting alternatives.

A crosswalk budget, as recommended by James A. Dei Rossi,[11] was prepared to reconcile the traditional budget with the program budget (see Table 4.11).

Current Objectives and Criteria for Measuring Attainment

The current objectives used to justify the program elements are presented on a selected basis in Table 4.12. These objectives, according to the administrative staff, were revised and updated during the school year 1972-73.

It appears from the investigation of the four instructional areas that the objectives are stated in general terms rather than, as required in PPBES, in measurable terms. Stephen M. Barro pointed out the elements of a statement of an objective:

> Typically, a statement of an instructional objective identifies a specific terminal behavior to be observed or measured, certain conditions under which the observation or measurement is to take place, and a standard of performance to be attained.[12]

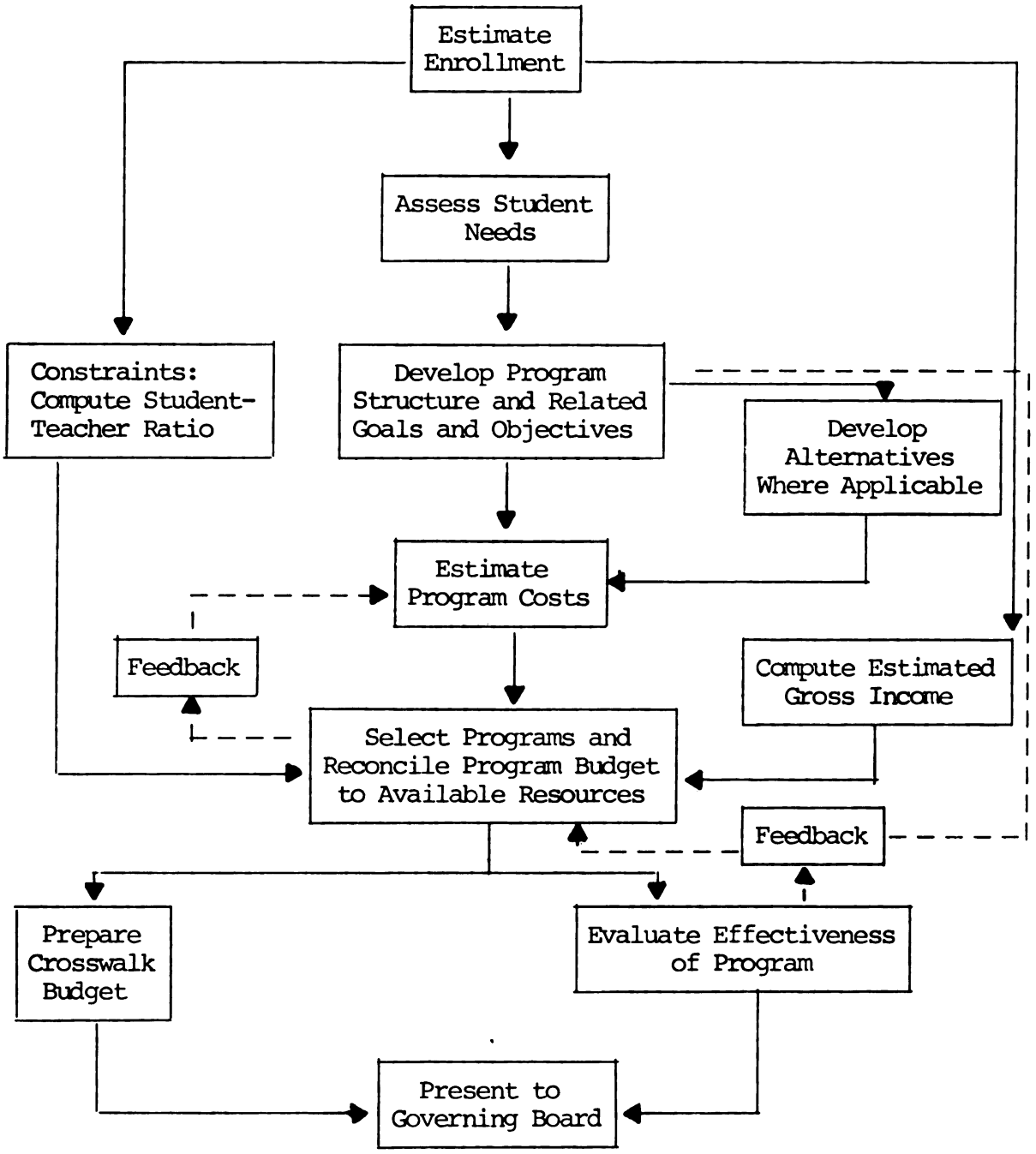
It was also determined from the investigation that the one major criterion for measuring accomplishment by the students and judging the effectiveness of programs was a battery of tests (see Table 4.13) and the results of the tests (on a selected basis) for 1973-74 (see Table 4.14).

The results of the tests indicated that the students at the American Community Schools of Athens, Inc. performed equal to or better than the U.S. national average.

Another criterion for measuring the validity of the programs was the percentage of graduates attending colleges and universities. A list of institutions attended by graduates of the American Community Schools of Athens, Inc. is shown on Table 4.15. According to John Dorbis, "approximately 125 students graduate from the High School each year and 65 to 70 per cent of the students continue their education at colleges and universities in the United States and other countries."[13]

Program Budgeting Model for the American Community Schools of Athens, Inc.

The purpose of this section of the study is to present a program budgeting model for constructive use by the American Community Schools of Athens, Inc. In Chapter III, some preimplementation procedures were indicated as guidelines; also, steps for implementation of PPBES, including operations sequences, were presented. In Chapter I, the responsibilities matrices for each component of PPBES were shown in table form and can be used as guidelines. The proposed program budgeting model for the American Community Schools of Athens, Inc., as conceptualized by the researcher, is presented on the following page.


Estimate Enrollment
Assess Student Needs
Constraints: Compute Student-Teacher Ratio
Develop Program Structure and Related Goals and Objectives
Develop Alternatives Where Applicable
Estimate Program Costs
Feedback
Compute Estimated Gross Income
Select Programs and Reconcile Program Budget to Available Resources
Feedback
Prepare Crosswalk Budget
Evaluate Effectiveness of Program
Present to Governing Board

The account numbering system recommended by the Financial Accounting, Handbook II, Revised[14] can easily be adapted for this model. Since long-range planning is an integral element of PPBES, estimating and planning are reflected on a five-year basis.

Estimating Enrollment

The most serious problem for the American Community Schools of Athens, Inc. is maintaining a consistent level of student enrollment. Because tuition averages approximately 98 percent of the total income, which becomes the basis for allocating resources to program levels, estimating enrollments is essential for current and long-range planning. Table 4.16 suggests the format for assembling estimated enrollments by grade, by instructional area, and for the total school.

Development of Program Structure and Objectives

The recommended program structure is proposed in Table 4.17. Although the program structure reflects the high school music subjects levels, a full program structure would include all subjects offered by the four instructional areas. The objective structure would employ the same format with the objectives at the subject level being stated in measurable terms as suggested by Barro,[15] with an inclusion of the time frame. Table 4.18 suggests a hierarchical structure for goals and objectives of the music program.

As objectives are attained at the lower levels, accumulation at each higher level will result in overall attainment of the major goals established for the school.

Estimating Costs

To develop a program budget for the school, costs must be estimated at the lowest level, then accumulated to the next level, and finally to a summary budget. Table 4.19 provides a format for estimating costs at the subject level. Table 4.20 summarizes the estimated cost for each subject by program element for each year. The same format is recommended for each program element, to summarize the program budget for each year as was used on Table 4.11. The information then can by summarized by year (for each of the five years) for either the program budget, the traditional budget, or a crosswalk budget, whichever is preferred by the governing board. The format shown on Table 4.19 would also be used for presenting alternative subjects to the administrative decision maker.

Evaluation of Objective Attainment

All programs should be evaluated periodically to determine if the program is operating sufficiently to attain the objective. The California Department of Education stated that:

> A critical part in the development of objectives is the method by which the objective is measured. The assessment of achievement is often very difficult in education.

> Either objective or subjective measures (or both) may be appropriate. In many cases standardized tests or pupils' grades will satisfy the measurement criteria. In other cases such measures as attendance level, attitude scale, drop-out rate, or subjective judgement must be used.[16]

The evaluation of the effectiveness of a program must be left to the discretion of the Evaluating Task Team because, as Margaret B. Carpenter and Sue A. Haggart argued:

> . . . No single measure of program effectiveness will tell the whole story about the worth of the program, because any program promotes several different kinds of change in the student.[17]

Marjorie L. Rapp and Gerald C. Sumner pointed out three basic functions served by the evaluation process:

> . . . to support decisionmaking in program adoption, to support decisionmaking in program improvement, and to support research for a better understanding of the educative process.[18]

Summary

In the first part of this chapter the results of the investigation were presented. The review of administrative policies revealed that the employment practices are restricted to one staff member for every 15.5 students. The By-Laws indicate that tuition rates must be approved by the Parents Association prior to December 31st preceding the school year of enactment. These two factors are not incompatible with PPBES. An analysis of income revealed that student tuition is the primary source of income (98 percent). The actual resource commitments of the American Community Schools of Athens, Inc. were analyzed. After identifying

the program elements, in agreement with the administrative staff, the resources committed for direct instructional costs were reallocated to the program elements to develop a program budget. The average cost per student for each program element was computed and revealed significant differences. However, analyzing the differences was not considered essential for this study. As was expected, the objectives were not stated in measurable terms and a cost-effectiveness analysis could not be administered. The American Community Schools of Athens, Inc. did present a battery of tests to judge the value of the school programs. It was determined that the students generally score higher on the tests than the United States averages for students in comparable grades.

In the second part of this chapter the procedures for developing a program budgeting model for the American Community Schools of Athens, Inc. were presented. It should be emphasized that program budgeting complements rather than replaces the traditional budget. However, it was stressed that objectives must be developed for each program at the lowest level and stated in measurable terms, which in turn allows for determining the effectiveness of the individual programs. An important factor for the American Community Schools of Athens, Inc. is the need to estimate enrollments on a conservative basis and staff the teacher positions accordingly. It was indicated that with a few modifications

the program budgeting model presented could be used by other American-sponsored overseas schools.

In Chapter V the summary, conclusions, and recommendations of the study are presented.

Footnotes--Chapter IV

[1]American Community Schools of Athens, Inc., Board of Education, Minutes of Official Meeting, April 24, 1972, p. 2.

[2]James A. Dei Rossi, "Cost Models and Analysis of Cost," in Program Budgeting for School District Planning, ed. by Sue A. Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972, p. 112.

[3]Constitution and By-Laws of the Parents Association of the American Community Schools of Athens, Inc. (including Amendments to December 13, 1973), Article VII, Section I, p. 3.

[4]Ibid., Article VIII, Section 4, p. 4.

[5]Captain Horace Hensley, U.S.A.F. Budget Officer and Treasurer (1973-74) of the Board of Education, personal interview, Athens, Greece, May 16, 1974.

[6]James A. Dei Rossi, "The Program Budget and the Traditional Budget," in Program Budgeting for School District Planning, ed. by Sue A. Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), p. 53.

[7]Ibid., p. 53.

[8]Ibid., p. 21.

[9]Research Corporation of the Association of School Business Officials, Educational Resources Management Systems (Chicago: Research Corporation, 1971), pp. 120-121.

[10]Stephen M. Barro, "Development of a Program Structure," in Program Budgeting for School District Planning, ed. by Sue A. Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), pp. 20-22.

[11]Dei Rossi, op. cit., pp. 50-52.

[12]Barro, op. cit., p. 25.

[13]John Dorbis, Assistant Superintendent, "A Special Report on 'Curriculum,'" (Athens, Greece: American Community Schools of Athens, Inc., December, 1972), p. 15.

[14]Financial Accounting: Classifications and Standard Terminology for Local and State School Systems, State Educational Records and Reports Series: Handbook II, Revised, 1972 (Washington, D.C.: Government Printing Office, 1973).

[15]Barro, op. cit., p. 27.

[16]California Department of Education, Conceptual Design for a Planning, Programming, Budgeting System (Sacramento, Calif.: California State Department of Education, 1969), p. 32.

[17]Margaret B. Carpenter and Sue A. Haggart, "Cost-Effectiveness Analysis for Educational Planning," in Program Budgeting for School District Planning, ed. by Sue A. Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), p. 279.

[18]Marjorie L. Rapp and Gerald C. Sumner, "Evaluating Innovative Educational Programs," in Program Budgeting for School District Planning, ed. by Sue A. Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), p. 186.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

In Chapter I, the characteristics of an American-sponsored overseas elementary and secondary school were described. It was indicated that the student population is typically multinational. It was also found that student tuition is the major source of income and that fluctuating enrollments at overseas schools create some serious financial problems, especially when enrollments decrease significantly during a school year. Some of the possible causes for fluctuating enrollments at the American Community Schools of Athens, Inc. were presented. The researcher had an opportunity to discuss financial problems with several members of boards of education, superintendents, and other administrators from various overseas schools. Most of the schools prepared traditional budgets, on a short-range basis. None of the schools was preparing a budget at the program level. PPBES was recommended for the overseas schools, which would provide a tool for decision makers to identify and evaluate programs and to plan on a long-range basis. Implicit in PPBES for an overseas school is the

ability to adapt to the changing needs of a multinational student population.

In Chapter II, the current literature covering PPBES was reviewed. Although the literature has expanded the use of PPBES in recent years, the proposals are predictive in nature and lack longitudinal study. The value of PPBES as a management information system for educational institutions was presented, and an emphasis was placed on assisting in the decision-making process. Sue Haggart suggested that an implication of PPBES in policy decisions is "a way of thinking about where you are going, where you want to go, how to get there, at what cost and with what benefit."[1] The components of PPBES were described, including the responsibility matrix for each task force. An emphasis was placed on developing a hierarchical program structure and stating in measurable terms the objectives for each program level. The program structure provides the basis for allocating resources at program levels and for the final development of the program budget. The parameters of PPBES were presented, including the steps for implementation and operation. It was also emphasized that long-range planning and developing cost estimating relationships are an essential part of PPBES. Multiyear planning, generally for five years, requires an examination and provision for future implications of current decisions. The definition of cost-effectiveness analysis and cost-benefits analysis, as

distinguished by Charles L. Schultze,[2] was presented. Generally, the cost-effectiveness analysis reflects measures of whether programs have attained the objectives, and cost-benefit analysis measures the benefits of the program for the student and/or for society.

In Chapter III, the framework and procedures for this study were described. The sources of information were the By-Laws of the Parents Association, the Minutes of the meetings of the Board of Education and the Parents Association, administrative policies, the annual budget documents, student records, faculty personnel files, accounting records, and special reports of the administrative staff. The five objectives that were considered necessary to accomplish the purpose of this study to develop a program budgeting model for the American Community Schools of Athens, Inc. were:

1. To investigate the administrative policies to determine if there are any policies that have an effect on or constrain the implementation of program budgeting;
2. To determine the administrative and instructional areas of responsibility and how resources were traditionally allocated to these areas;
3. To determine the program elements for each of the instructional areas;

4. To perform the function of program budgeting by allocating the educational resources to program elements; and
5. To develop criteria for measuring attainment of the educational objectives.

It was indicated that the study did not involve an experimental research plan and therefore hypotheses were not presented for testing. The program budget model for this study considered only the direct instructional costs for allocating to program elements. It was suggested that long-range budgeting should reflect the financial consequences of both routine annual operating costs and periodic nonrecurring costs. The authors stressed the fact that the objectives must be stated in terms that are measurable. The Research Corporation pointed out that "the evaluation of performance is motivated primarily by our need to assess the effectiveness of a program in achieving objectives."[3] It was also suggested that the end-product of this study, a model for program budgeting, could possibly be used by other overseas schools with modifications based upon the constraints of the particular school.

In Chapter IV, the results of the study were presented in two parts. In the first part, the data derived from the five objectives were compiled and summarized to present a program budget for the direct instructional costs. A crosswalk budget, reconciling the traditional budget with

the program budget, was prepared to facilitate use by those readers not familiar with the program budget. As was expected in a school using traditional procedures, the objectives were not stated in measurable terms. A battery of tests was used to emphasize the value of the programs by comparing the results to the U.S. national averages. However, the effectiveness of a specific program subelement could not be evaluated. The need to estimate student enrollment accurately was stressed as being of major importance for any overseas school where student tuition is the primary source of income. It was recognized that programs at the lowest level of the hierarchical program structure should be coded by an account number. This facilitates the collection of such data as costs and other statistics in a variety of combinations and formats. These data are used to control program expenditures, to evaluate program effectiveness in conjunction with stated objectives, and to analyze the cost effectiveness of alternative programs.[4]

Conclusions From the Study

Several conclusions can be drawn from the study as they apply to the American Community Schools of Athens, Inc.

First, estimates of student enrollments have been based upon historical data and projected on a percentage basis for determining estimated future enrollments. Since tuition is the primary source of income and becomes the

basis for allocating resources to programs, PPBES would require an analysis of future events that might effect a change in enrollment. Consideration should be given to changes in enrollment between instructional areas for the impact on the program structure.

Second, programs in the past have been implemented on a piecemeal basis, without much consideration for the effect on budgets in future years. The long-range planning aspect of PPBES requires a consideration of all programs, the future costs on an incremental basis, and the desirability of analyzing alternative courses of action.

Third, programs are not altered once the school year has started. PPBES suggests a continual review of programs, a determination of the effectiveness, and alternatives for improvement.

Fourth, there appears to be an element of inflexibility to reduce costs in proportion to declining enrollments. In developing costs by program element and subelement, PPBES provides essential information for deciding which programs to delete, i.e., which programs are least effective and most costly.

Fifth, teacher contracts generally are committed on a two-year basis. Some criteria should be developed for using local (American, Greek, and/or third-country nationals), qualified teachers on a semester basis. Although teacher contracts are not an important part of PPBES, this would

supplement the process of adding or deleting programs in a time of increasing or decreasing enrollments. Two-year teacher contracts should be committed so that 50 percent would terminate in alternate years.

Sixth, curriculum appears to be similar to curriculum in U.S. schools, except for electives and courses for the nonacademically inclined students. PPBES requires the assessment of the needs of the students, and provision should be made in the program structure for both the academically and nonacademically inclined students. A goal of a certain segment of the student population would dictate offering courses that would allow an opportunity for employment upon graduation. Programs at the lowest level of the hierarchical structure, when properly structured to accomplish such a goal, would provide for that opportunity.

Seventh, objectives for program elements were stated in general terms or in the terms of a "goal." PPBES requires that objectives be stated in measurable terms at each program level. Tests are an acceptable tool for measuring the effectiveness of a program, provided the objectives are stated in terms that take this into consideration.

Recommendations as a Result of This Study

Implementing the PPBES process in the American Community Schools of Athens, Inc. is highly recommended. PPBES provides a systematic and rational approach to effective

planning. The needs for and benefits from PPBES have been presented throughout this study. Certain recommendations can be made from the study and the above conclusions that would be beneficial and supplement the implementation of PPBES:

1. Better methods for projecting estimated enrollments should be developed. It is recommended that a questionnaire be developed and presented to the parents for completion each year at the winter registration. The questionnaire would request information, such as mission of the parent, expected length of stay in Greece, ages of all children including preschoolers, and other pertinent information as needed on a year-to-year basis. In addition to a questionnaire for the parents, a survey questionnaire should be developed and submitted to major businesses, the various commanders of military installations, key personnel in the American Embassy, and other sources of potential students. The questionnaire should include a request for information regarding an intended or foreseeable change in purpose for being in Greece, a change in personnel employment practices or unusual turnover of personnel, a change in nature of employment requirements (single vs. married with families) and any other pertinent information that would affect enrollments. The questionnaire should stress the importance of developing accurate enrollment data for planning and developing effective instructional programs.

2. Conduct a pilot study at the American Community Schools of Athens, Inc. to collect information necessary for full implementation of PPBES. Staff orientation and involvement would be a major consideration. Kiser and Edwards stated that a major problem "was the difficulty in getting staff members interested in PPBES. This may be related to inadequate plans that fail to include realistic explanations to every employee of the benefits he can derive from using PPBES."[5] The pilot study would also include, as described as a first step[6] in PPBES, assessing the needs of the students.

3. Assign account numbers to programs at all levels, as recommended by the Financial Accounting Handbook II, Revised. The account numbering system would be an important instrument for controlling expenditures at the lowest program level. The teachers would be made cognizant of the account number for their programs and would be required to use that account number on all purchase requisitions, purchase orders, requests for service, repairs and equipment rentals, and on all payroll time cards where applicable. The account number would facilitate determining the actual costs of each program subelement and for accumulating costs to reflect program costs at any level for information purposes as desired by the administrative staff or governing board.

4. Develop a comprehensive philosophy in employment practices that should be reviewed by the administrative staff at least annually. Consideration should be given to hiring teachers qualified to teach in more than one instructional area, such as elementary, middle, and/or high school teaching certificates. This would facilitate the shifting of teachers when the turnover of students results in an imbalance in student population between grade levels or when decreasing enrollments dictate deleting certain programs. PPBES would require preplanning to establish priorities about which programs would be deleted and at what level.

5. Continue to prepare the traditional budget along with the program budget until the differences are adequately understood by the parents, board members, administrative staff, and teachers. The differences between the program budget and the traditional budget should be explained, such as that the program budget reflects a complete description of the physical resources needed to implement the budget plan.

6. The costs allocated to programs should include only the direct instructional costs. In evaluating alternative programs, the indirect costs would not be considered unless implementation of a particular program would result in an increase in costs of supporting services. The increased costs of supporting services would not be charged

to the program, but the decision maker must be aware of these costs when selecting alternative programs.

Implications for Further Study

This study resulted in developing a program budgeting model for the American Community Schools of Athens, Inc. However, it appears that a management information system to assist in the decision-making processes through PPBES would be equally applicable to other overseas schools. Therefore, it is suggested that this study be replicated at other overseas schools. Implementation of PPBES in other overseas schools could result in developing a uniform system and facilitate the exchange of information and data similar to the projects performed by the Western Interstate Commission for Higher Education "to help universities and colleges improve both their programs and their management."[7]

Further studies should include developing basic definitions to provide for consistency in application of data and statistics. This could also result in developing an operational philosophy for all American-sponsored overseas schools and a basis for performing longitudinal studies on behavior patterns of students educated in an overseas environment.

It is suggested that the Office of Overseas Schools of the U.S. Department of State take the initial step,

through a newsletter, to stress the importance of a uniform system through PPBES for all overseas schools. The need for a uniform system could be emphasized through the various Associations--Near East, South East Asia, European Council for International Schools, and/or the American Association for International Education--at their meetings.

Major academic and financial improvements could be realized through a uniform system. By-products could be an improved procedure for purchasing books, supplies and equipment, or better employment methods for hiring U.S. teachers through a central statewide agency jointly financed by the overseas schools. The benefits from an improvement in exchange of information and ideas, joint effort in resolving mutual problems, and other joint studies appear to be infinite.

Overview

In summary, PPBES provides an effective framework for planning and a process for carrying out major program decisions in an informed and orderly fashion. It can also lead to a major qualitative improvement in the programs and relevance of resource allocation to pre-established priorities. The idea of open and explicit analysis, involvement, and expression of opinions by all interested parties is firmly established.

Although this study involved only one overseas school, it is anticipated that the model presented could be used by other overseas schools and could possibly result, through further studies, in a uniform system for all such schools.

Footnotes--Chapter V

[1]Sue A. Haggart, "Program Budgeting for Improved School District Planning," in Program Budgeting for School District Planning, ed. by Sue A. Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), pp. 18-19.

[2]Charles L. Schultze, The Politics and Economics of Public Spending (Washington, D.C.: The Brooking Institution, 1968), p. 2.

[3]Research Corporation of the Association of School Business Officials, Educational Resources Management Systems (Chicago, Illinois: Research Corporation, 1971), p. 216.

[4]California State Department of Education, Conceptual Design for a Planning, Programming, Budgeting System (Sacramento, Calif.: California State Department of Education, 1969), p. 12.

[5]Chester Kiser and John P. Edwards, "PPBES: Logic, Rationality Applied to Education," School Business Affairs, ASBO's Journal/Newsmagazine, October, 1973, p. 241.

[6]Research Corporation, op. cit., p. 30.

[7]National Center for Higher Education Management Systems at Western Interstate Commission for Higher Education, Introduction to the Resource Requirements Prediction Model 1.6 (Boulder, Colorado: WICHE, 1973), p. II.

GLOSSARY

GLOSSARY

ACTIVITIES: Educational procedures designed to accomplish the specific goal or objective that has been established for a specific program.

ALTERNATIVES: Different courses of action or different approaches to accomplish goals and/or objectives. The word implies a comparison of two or more differing mixes of input for a proposed program plan or for a plan already in process.

ALLOCATION: Distribution of resources among individual programs as required to achieve stated goals and/or objectives.

ANALYSIS: Systematic separation of an activity, procedure, or organization into component parts for the purpose of determining how the necessary operations may be accomplished.

BUDGETING: The process that includes, in addition to final reconciliation of programs and available resources according to established priorities, the preparation of the budget document, the approval by a board of education, and the execution of the budgetary plans.

COST BENEFIT ANALYSIS: Systematic examination of determining the economic value of a specific program by

establishing a ratio of costs to the results likely to be obtained. An analytical approach to solving problems of choice. Both costs and benefits are measured and analyzed in monetary terms.

COST EFFECTIVENESS ANALYSIS: Systematic examination of assessing feasible alternatives to a specific program by relating the cost of a particular alternative to the achievement of a goal and/or an objective. The purpose is to provide a means of comparing possible alternatives on the basis of least cost and greatest effectiveness.

COST, INCREMENTAL: The incremental cost is the cost of adding the next unit. The actions can be viewed as a series of alternatives that differ in quantity but not kind.

CRITERIA: Statements of preferred outcomes that are used to test the relative degrees of desirability among alternatives; standards by which a course of action is evaluated. Statements of criteria include time, conditions, and specific results expected.

CROSSWALK: The expression of the relationship between the program structure and the appropriation/budget structure. It may be viewed as a table with the rows of the table listing the program categories and the columns showing the appropriations and budget activities.

EFFECTIVENESS: The degree to which a given program achieves the stated objectives of the program. Ideally, it is measured in quantitative terms in relation to criteria.

EVALUATING: The process of assessing the attainment of objectives and the worth of programs.

GOAL: A broad statement of purpose to be achieved by society but to which the educational system will contribute by attaining related objectives.

INPUT: Resources employed to achieve objectives.

MATRIX: A rectangular array of mathematical quantities by rows and columns; used to facilitate the study of problems in which the relation between the contrasting terms is fundamental.

MODEL: An abstract representation of reality that describes, reflects, or simulates an actual system or situation.

MULTIYEAR PROGRAM AND FINANCIAL PLAN: A plan that serves as a pattern for the future operation of the educational programs of the school district. The plan reflects the future implications of current decisions.

OBJECTIVE: A statement of an outcome of a program that will contribute to the societal goal to which it is related.

OUTCOME: The result obtained from the input of resources in the educational process in the form of growth of the learner, e.g., knowledge, skills, and attitudes.

PLANNING: The process of guiding internal change so that the school adapts effectively to the dynamic society of which it is a part.

PPBES: Abbreviation for the planning-programming-budgeting-evaluating system.

PROGRAM: A series of interdependent, closely related services and/or activities progressing toward or contributing to a common objective or set of allied objectives.

PROGRAM BUDGETING: The preparation of a budget which emphasizes classifications by programs and reflects consideration of present and future costs of various programs designed to realize objectives.

PROGRAM ELEMENT: Each part of the operating program identified by a discrete program classification. The purpose for identifying a program element is to facilitate the process of quantifying the several characteristics (properties) of the element.

PROGRAMMING: The process of developing program plans.

PROGRAM STRUCTURE: An array for showing the priority for learning outcomes through the organization of program emphases; the format for the program budget.

RESOURCES: Inputs available to the school system for use in attaining its objectives.

SUBJECTIVE MEASURES: Impressionistic observations of the comparison of outputs with the criteria of related objectives for which those outputs were produced.

SUPPORT SERVICES: Those services which provide administrative, technical, and logistical support to facilitate and enhance learning objectives. Support services exist as adjuncts for the fulfillment of objectives.

SYSTEMS ANALYSIS: The analytical activity that allows for the organization and the examination of information on a regular basis so as to clarify objectives and the utility of different ways of achieving them. Analysis is used to identify controllable variables and noncontrollable environmental factors that affect the relationship of inputs and outputs.

SYSTEM, MANAGEMENT INFORMATION: A communications process in which data are recorded and processed for operational purposes.

Source: Research Corporation of the Association of School Business Officials, Educational Resources Management System (Chicago, Illinois: Research Corporation, 1971), pp. 337-342.

APPENDIX

TABLES

Table 1.1.--Statistics concerning American-sponsored overseas schools: School year 1973-74.

Area	No. of Countries	No. of Schools	Enrollment						Professional Staff			
			U.S. Gov't.	Bus. & Found.	U.S. Other	Host Country	Third Country	Total	U.S.	Host Country	Third Country	Total
Africa	17	20	958	369	510	784	2,414	5,035	228	44	140	412
Central & South America	19	47	2,043	3,786	3,386	19,138	3,572	31,925	1,012	1,313	183	2,508
Europe	16	29	1,254	3,761	1,253	1,310	2,605	10,183	583	172	202	957
Near East & South Asia	16	23	3,141	2,386	1,476	916	2,337	10,256	646	162	142	950
East Asia	10	15	4,570	3,672	1,427	810	2,609	13,088	602	258	91	951
Total	78	134	11,966	13,974	8,052	22,958	13,537	70,487	3,071	1,949	758	5,778

Source: U.S. Department of State, Office of Overseas Schools, Fact Sheet 1973-74 (Washington, D.C.: U.S. Department of State, Office of Overseas Schools, 1974). Statistics as of September 15, 1973.

Table 1.2.--Student representation by country, American Community Schools of Athens, Inc.

Country	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
Argentina	2	1	1	1	1	1
Armenia	1	1	-	1	-	-
Australia	11	20	28	33	39	52
Austria	-	-	-	-	-	2
Brazil	5	9	6	6	8	6
Canada	29	45	47	63	82	87
Chile	-	-	-	-	5	-
China	-	1	1	2	-	-
Denmark	3	3	2	-	4	-
Egypt	1	1	-	-	-	-
Ethiopia	-	1	-	-	-	-
Finland	1	2	2	-	-	-
France	-	2	2	2	2	2
Germany	2	1	-	-	-	2
Great Britain	33	36	32	30	35	27
Greece	37	24	31	41	38	46
Holland	4	3	2	2	1	3
India	-	-	2	2	2	2
Iran	-	-	1	-	1	-
Ireland	1	1	-	1	-	-
Israel	16	10	19	19	25	25
Italy	2	2	2	2	3	4
Japan	9	10	13	10	15	30
Jordan	-	-	-	1	2	4
Korea	-	-	-	-	-	1
Lebanon	1	2	2	4	5	5
Libya	-	2	-	1	2	1
Malawii	-	-	2	3	2	2
Mexico	2	-	-	-	-	1

Table 1.2.--Continued.

Country	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
New Zealand	-	-	-	3	7	9
Norway	2	2	1	5	1	3
Pakistan	-	-	-	-	-	3
Panama	-	1	-	-	-	-
Philippines	3	1	1	1	2	2
Rhodesia	-	-	-	-	-	2
South Africa	7	9	8	6	8	11
Spain	2	1	-	-	-	-
Sudan	1	1	-	-	-	-
Sweden	5	6	5	2	3	4
Turkey	9	4	-	1	5	3
U.A.R.	-	-	2	2	2	2
Venezuela	1	-	3	7	4	3
Yugoslavia	10	16	21	11	14	10
U.S.A.	1,563	1,523	1,428	1,728	2,088	1,880
Totals	1,763	1,741	1,664	1,983	2,406	2,240

Source: Accounting Records, Office of Assistant Superintendent for Business Affairs, American Community Schools of Athens, Inc.

Table 1.3.--Summary of fees, American Community Schools of Athens, Inc., 1967-1974.

Year	Transportation	1-5	6-8	9-12
1967-68	$ 85	$ 585	$ 635	$ 635[a]
1968-69	100	585	635	635
1969-70	100	585	635	635
TUITION PERCENTAGE INCREASE		53.8%	48.8%	55.9%
1970-71	100	900	945	990[b]
1971-72	100	900	945	990
1972-73	125	900	945	990
TUITION PERCENTAGE INCREASE		5.5%	5.8%	6.0%
1973-74	152	950	1,000	1,050[c]
TUITION PERCENTAGE INCREASE		23.5%	27.5%	30.9%
1974-75	175	1,175	1,275	1,375[d]

Note: 1967-68 to 1969-70, fees were charged on the basis of grades 1-6 and 7-12.

Source: Minutes of Meetings of the Parents Association in [a]December, 1966; [b]December, 1969; [c]December, 1972; and [d]December, 1973.

Table 2.1.--Planning responsibilities matrix.

Selected Major Activities in the Planning Process	Board	Superintendent	Task Force (Planning)	Task Force Staff	Resource Personnel	District Professional Staff (Teachers and Administrators)	Citizens	Students
Establishing the task force	D	R_{1-2}				I	I	I
Specifying the responsibilities of the task force	D	R_{1-2}						
Organizing the task force	T	I	D		I			
Identifying problems, needs and resources			D	I	I	I	I	I
Identifying goals			D	I	I	I	I	I
Developing potential general objectives			D	R_2	R_1			
Selecting and recommending goals, general objectives and related programs to the board		C	D	R_1	R_1			
Adopting goals, general objectives and related programs as planning agency	D	R_2						
Recycling the planning process	T	D				I	I	I

Legend: D Principal decision-maker
R_1 Initiates recommendations
R_2 Reviews, amends and transmits recommendations
C Concurs in or approves decisions
T Technical responsibility
I Provides relevant information

Source: Research Corporation of the Association of School Business Officials, Educational Resource Management Systems (Chicago: Association of School Business Officials, 1971), p. 54.

Table 2.2.--Programming responsibilities matrix.

Selected Major Activities in the Programming Process	Board	Superintendent	Planning Team(s)	Programming Team(s) Staff	Resource Personnel	District Professional Staff (Teachers and Administrators)
Creating professional team(s) for programming	T	D				R_1
Specifying roles and responsibilities of the programming team(s)		D			I	I
Translating general objectives into appropriate performance objectives			D	R_2	R_1	I
Developing alternative program plans			D	R_1	R_1	I
Allocating resources to program plans		C	D	R_1	I	I
Selecting "best" program plans	T	C	D	R_1	R_1	I
Organizing plans for implementation and operation		C	D	R_2	R_1	
Communicating accumulated data		C	D			
Recycling the program process	T	D				I

Legend: D Principal decision-maker
R_1 Initiates recommendations
R_2 Reviews, amends and transmits recommendations
C Concurs or approves decisions
T Technical responsibility
I Provides relevant information

Source: Research Corporation of the Association of School Business Officials, Educational Resource Management Systems (Chicago: Association of School Business Officials, 1971), p. 55.

Table 2.3.--Budgeting responsibilities matrix.

Selected Major Activities in the Budgeting Process	External Authority	Board	Superintendent	Professional Administrative Staff	Teaching Staff	Citizens
Defining capabilities and required organizational relationships			D_1	R_1		
Specifying roles and responsibilities for accomplishing budgeting tasks		T	D_1	R_1		
Casting programming data into program budget format			C	D_1		I
Reconciling of program requirements and resources availability			T	D_1		
Making visible the planned use of resources			D_1	R_1		
Preparing the proposed budget documents			T	D_1		
Transmitting proposed budget documents to board of education			D_1			
Decision-making regarding budget adoption	D*	D_1	R_1	I	I	D*
Procuring resources		T	D*			
Applying resources according to plans (initiation of program plans)		T	D_1	D_2	D_2	
Converting resources into outcomes			T	C	D_1	
Accounting and reporting on use of resources			T	D_1		
Recycling the budgeting process		T	D_1	R_{1-2}	R_1	R

Legend:
- D* Placement of prime responsibility varies from state to state
- D_1 Principal decision-maker
- D_2 Makes subordinate-level decisions
- R_1 Initiates recommendations
- R_2 Reviews, amends and transmits recommendations
- C Concurs or approves of decisions
- T Technical responsibility
- I Provides relevant information

Source: Research Corporation of the Association of School Business Officials, Educational Resource Management Systems (Chicago: Association of School Business Officials, 1971), p. 56.

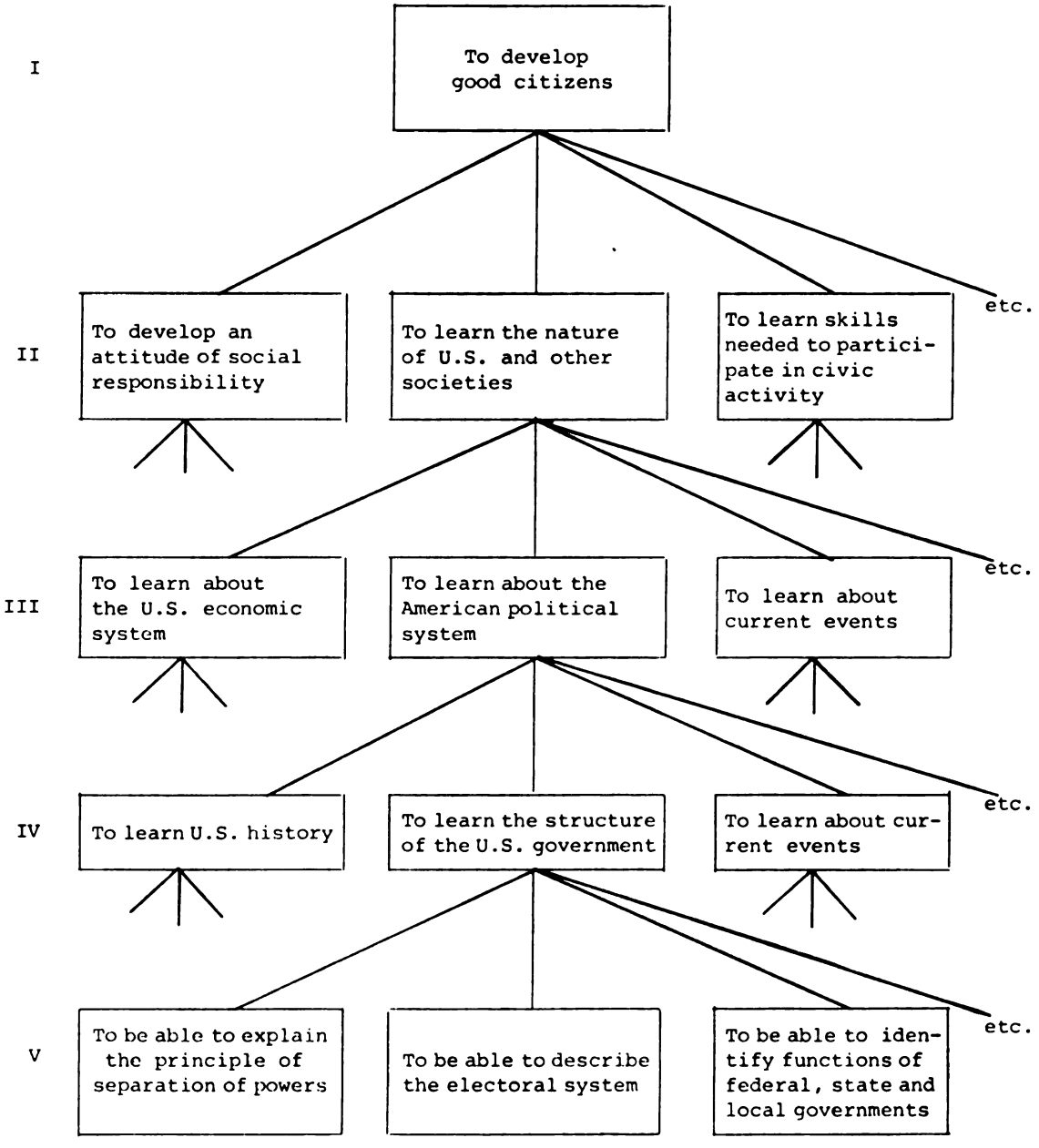
Table 2.4.--Evaluating responsibilities matrix.

Selected Major Activities in the Evaluating Process	Board	Superintendent	Professional Administrative Staff	Teaching Staff	Resource Personnel	Students	Noncertificated Staff
Defining required internal and external capabilities and relationships		D_1	R_1	R_1	T		
Specifying roles and responsibilities for accomplishing evaluating tasks	T	D_1	D_2	D_2	I	I	
Administering basic evaluation plan (prepared in programming process)		T	D_1	D_2	R_1	I	I
Developing plans for ancillary evaluation		C	D_1	I	R_1	I	I
Approving plans for ancillary evaluation	T	D_1	D_2	R_1	I		
Administering ancillary evaluation plans		T	D_1	D_2	I	I	I
Analyzing evaluation data		T	D_1	R_1	I		
Communicating evaluation data	T	D_1	D_2	D_2			
Making appropriate modification within the school system	T	D_1	D_2	R_1			R_1
Recycling the evaluating process	T	D_1	D_2	R	R_1		

Legend: D_1 Principal decision-maker
D_2 Makes subordinate-level decisions
R_1 Initiates recommendations
R_2 Reviews, amends and transmits recommendations
C Concurs in or approves of decisions
T Technical responsibility
I Provides relevant information

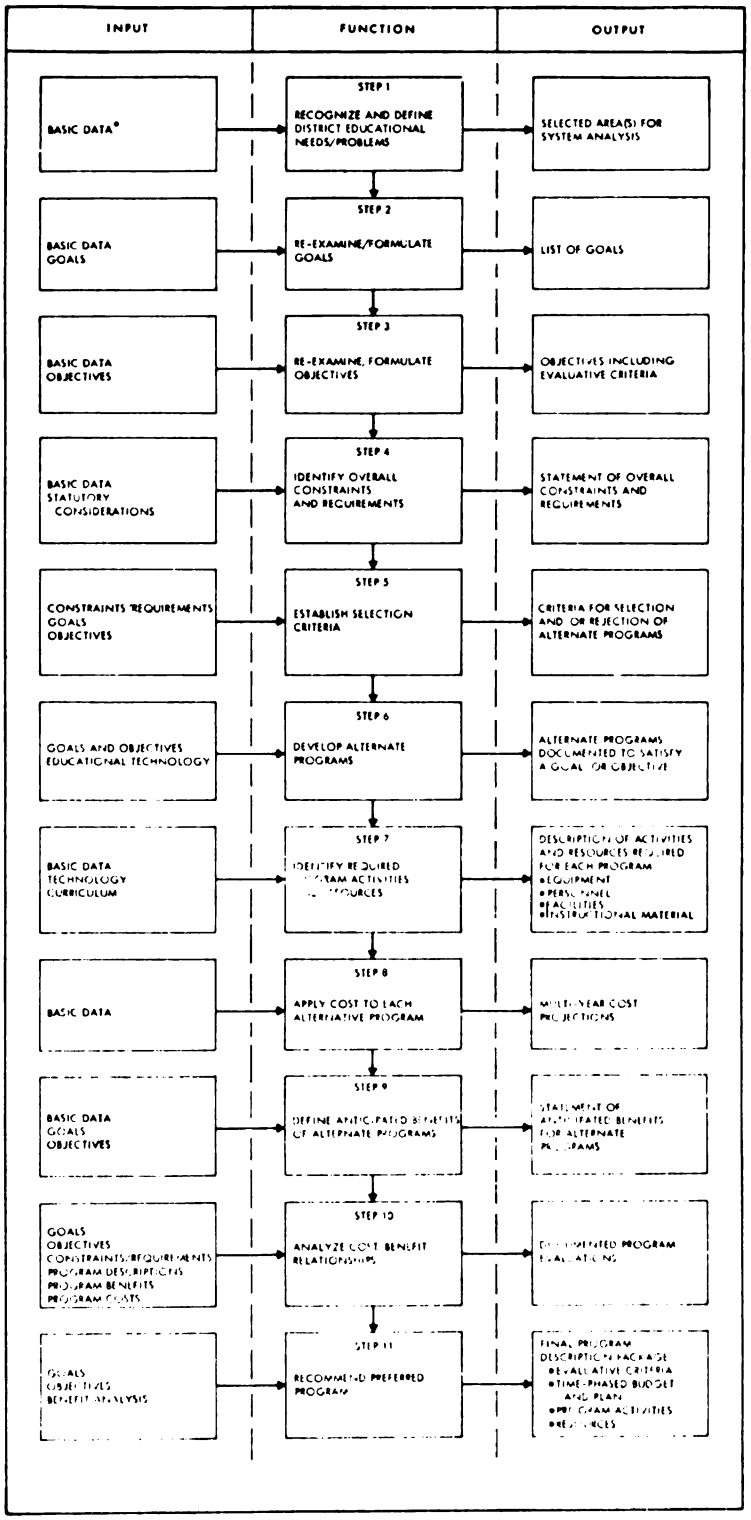
Source: Research Corporation of the Association of School Business Officials, Educational Resource Management Systems (Chicago: Association of School Business Officials, 1971), p. 57.

Table 2.5.--A segment of one hierarchy of educational objective.



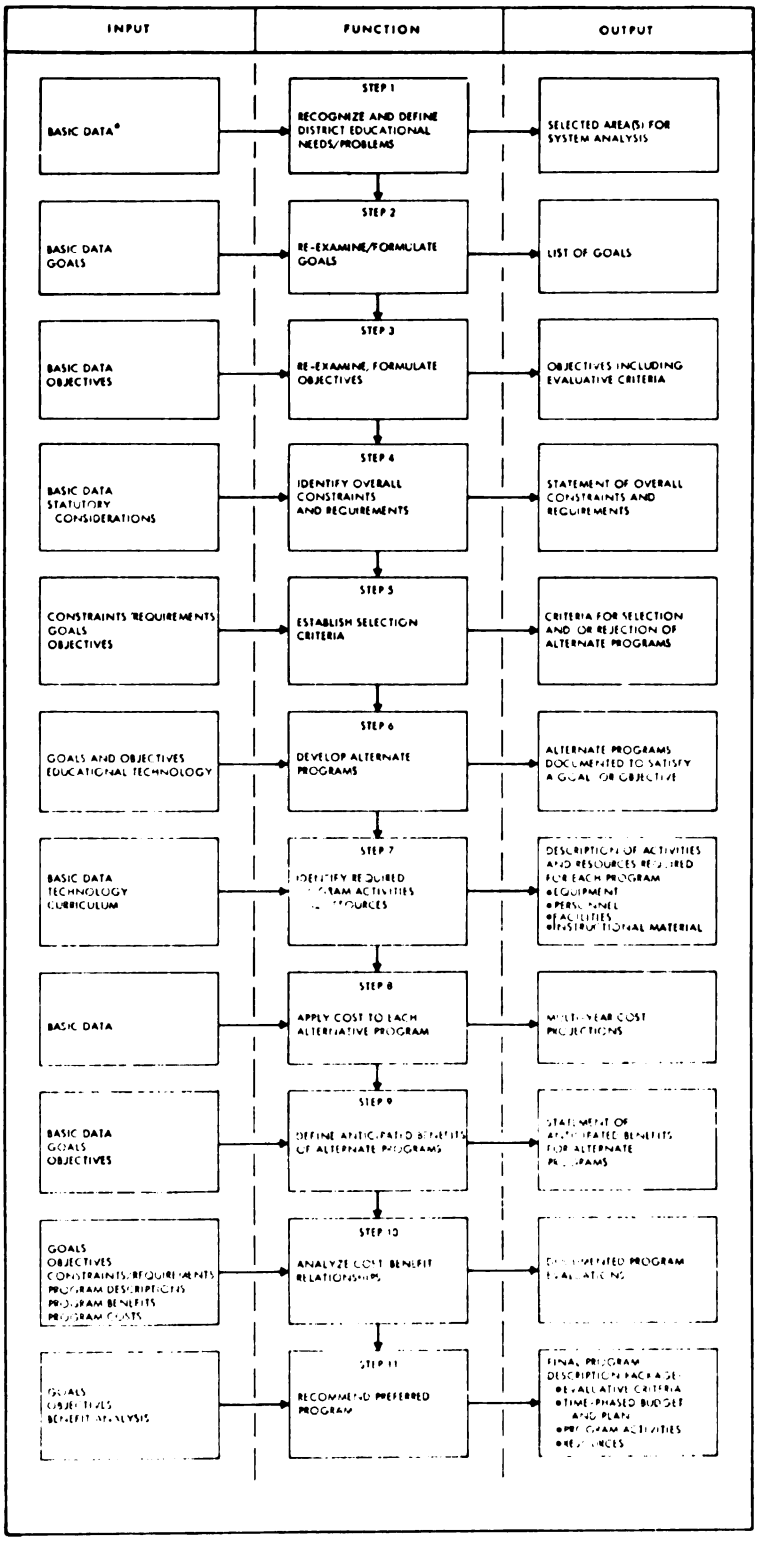
Source: Stephen Barro, "Development of a Program Structure," in Program Budgeting for School District Planning, ed. by Sue A. Haggart (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), p. 27.

Table 2.6.--System analysis process.



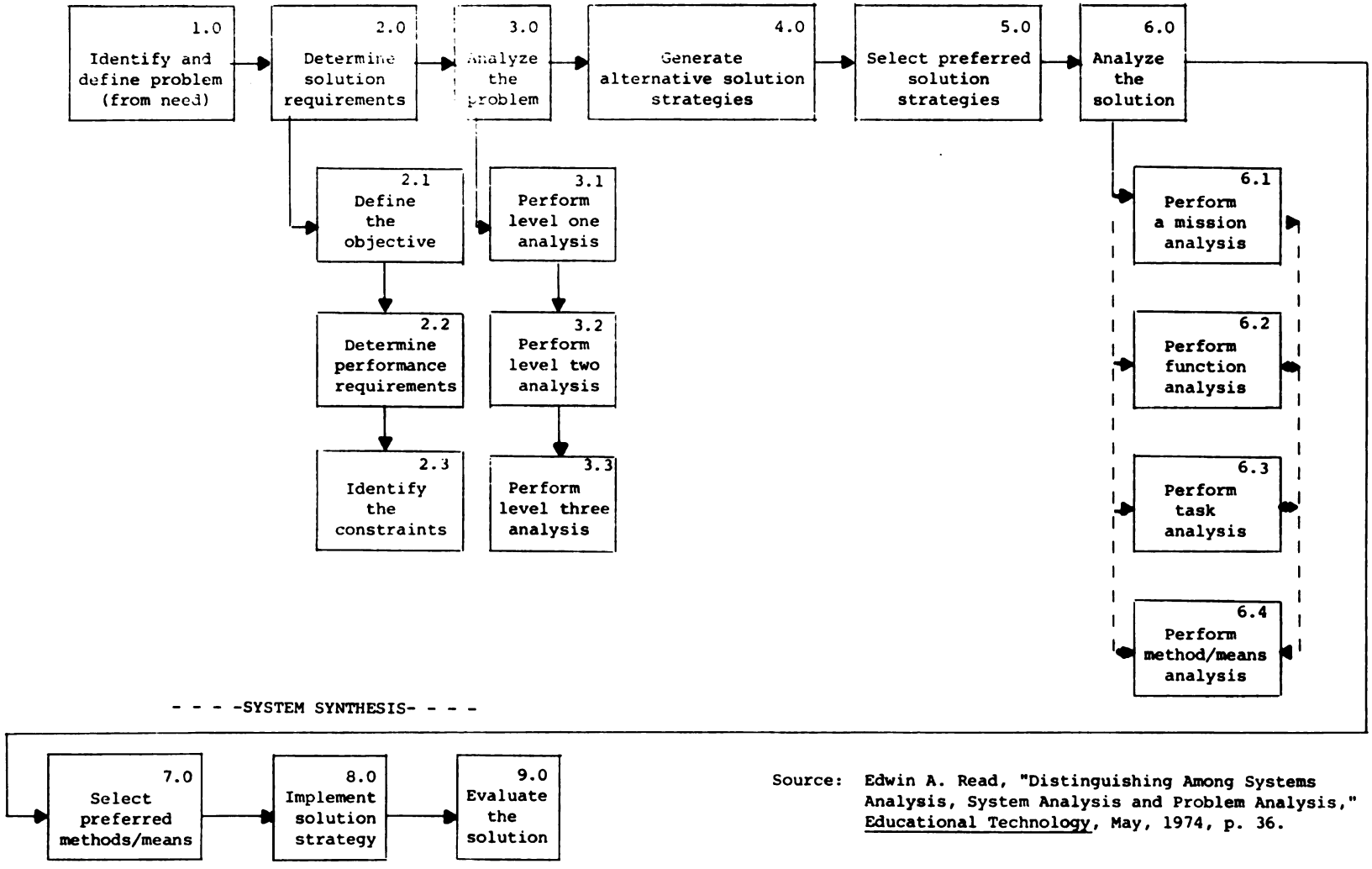
Source: California State Department of Education, Conceptual Design for a Planning, Programming, Budgeting System (Sacramento, Calif.: California State Department of Education, 1969), p. 19.

Table 2.6.--System analysis process.



Source: California State Department of Education, Conceptual Design for a Planning, Programming, Budgeting System (Sacramento, Calif.: California State Department of Education, 1969), p. 19.

Table 2.7.--System approach to educational planning and problem-solving.



Source: Edwin A. Read, "Distinguishing Among Systems Analysis, System Analysis and Problem Analysis," Educational Technology, May, 1974, p. 36.

Table 2.8.--Federal institutions with PPB systems.

Section 1
- Department of Agriculture
- Department of Commerce
- Department of Defense--separate submission for: Military functions (including Civil Defense) Corps of Engineers, Civil functions
- Department of Health, Education, and Welfare
- Department of Housing and Urban Development
- Department of the Interior
- Department of Justice
- Department of Labor
- Post Office Department
- Department of State (Excl. A.I.D.)
- Department of the Treasury
- Agency for International Development
- Atomic Energy Commission
- Central Intelligence Agency
- General Services Administration
- National Aeronautics and Space Administration
- National Science Foundation
- Office of Economic Opportunity
- Peace Corps
- United States Information Agency
- Veterans' Administration

Section 2
- Civil Service Commission
- Federal Communications Commission
- Federal Power Commission
- Federal Trade Commission
- Interstate Commerce Commission
- Securities and Exchange Commission
- Small Business Administration
- Tennessee Valley Authority

Section 3
- Export-Import Bank of Washington
- Federal Home Loan Bank Board
- Federal Mediation and Conciliation Service
- National Labor Relations Board
- Railroad Retirement Board
- Selective Service Board

Source: Fremont J. Lyden and Ernest G. Miller, Planning, Programming, Budgeting: A Systems Approach to Management (Chicago: Markham Publishing Company, May, 1971), pp. 442-443.

Table 2.9.--Institutions of higher education in Michigan employing PPBES.

Central Michigan University	Henry Ford Community College
Eastern Michigan University	Highland Park College
Ferris State College	Jackson Community College
Grand Valley State College	Kalamazoo Valley Community College
Lake Superior State College	Kellogg Community College
Michigan State University	Kirtland Community College
Michigan State Computer Network--MERIT	Lake Michigan College
	Lansing Community College
Michigan State University Agricultural Extension	Macomb County Community College
	Mid-Michigan Community College
Michigan Technological University	Monroe County Community College
Northern Michigan University	Oakland University
Montcalm Community College	Grand Rapids Junior College
University of Michigan	Muskegon Community College
University of Michigan--Dearborn	North Central Michigan College
University of Michigan--Flint	Northwestern Michigan College
University of Michigan--Gerontology	Gogebic Community College
	Glen Oaks Community College
Wayne State University	Genesee Community College
Western Michigan University	West Shore Community College
Alpena Community College	Oakland Community College
Bay deNoc Community College	St. Clair Community College
Delta College	Schoolcraft College
Wayne County Community College	Southwestern Michigan College
Washtenaw Community College	

Source: State of Michigan, "Program Budget Evaluation System for Higher Education," Instructions, February, 1972.

Table 3.1.--Crosswalk example (in $ thousands).

Account Number	Account	Total	Instructional Programs[a]					Noninstructional Programs							
			1	2	3	4	5	Assessment, Guidance, and Counseling 6	Development and Evaluation 7	Instructional Resources and Media 8	Auxiliary Services 9	Community Service 10	Operation and Maintenance 11	Capital Outlay 12	Administration 13
100	Administration	580	---	---	---	---	---	---	---	---	---	---	---	---	530
200	Instruction	15,945	4,410	4,210	2,560	760	630	915	355	215	---	---	---	---	1,890
300	Health	290	---	---	---	---	---	---	---	---	290	---	---	---	---
500	Transportation	280	---	---	---	---	---	---	---	---	280	---	---	---	---
600	Operation	1,760	---	---	---	---	---	---	---	---	---	---	1,760	---	---
700	Maintenance	915	---	---	---	---	---	---	---	---	---	---	915	---	---
800	Fixed Charges	1,100	245	235	140	45	35	50	20	10	15	---	165	---	140
	Subtotal	20,870													
900	Food Service	500	---	---	---	---	---	---	---	---	500	---	---	---	---
1100	Community Service	700	---	---	---	---	---	---	---	---	---	700	---	---	---
	Total Current Expense	22,070	4,655	4,455	2,700	805	665	965	425	225	1,085	700	2,840	---	2,560
1200	Capital Outlay[b]	500	---	---	---	---	---	25	---	25	---	---	---	450	---
	Total Current Expense and Capital Outlay	22,570	4,655	4,455	2,700	805	665	990	425	250	1,085	700	2,840	450	2,560
% of Current Expense[c]		100.0	21.1	20.1	12.2	3.6	3.0	4.5	1.9	1.1	4.9	3.1	12.9		11.6

[a]Instructional Programs: 1. Learning Fundamental Intellectual Skills
2. Learning About the World
3. Development of the Individual Physically, Socially, and Emotionally
4. Learning Knowledge and Skills in Preparation for Future Employment or Occupational Training
5. Learning Academic Subjects to Prepare for Higher Education

[b]Provision of physical plant and equipment.

[c]These are percentages of "Current Expense" excluding "Capital Outlay." This conforms to current practice.

Source: Sue A. Haggart, ed., Program Budgeting for School District Planning (Englewood Cliffs, New Jersey: Educational Technology Publications, 1972), p. 51.

Table 4.1.--Comparative income and expenditure statements, American Community Schools of Athens, Inc.; school years ended June 30, 1969, 1970, 1971, 1972, 1973, 1974.

	1969	1970	1971	1972	1973	1974
INCOME						
Tuition Fees	$1,097,343	$1,079,981	$1,551,181	$1,850,751	$2,233,724	$2,208,926
Miscellaneous	19,607	22,352	20,826	25,368	27,387	31,807
U.S. Gov't. Grants	96,278	91,033	29,500	28,408	12,592	14,000
Total Income	$1,213,228	$1,193,366	$1,601,507	$1,904,527	$2,273,703	$2,254,733
EXPENDITURES						
Operating Instructional						
Salaries	$ 628,333	$ 707,591	$ 897,758	$ 982,522	$1,227,600	$1,491,391
Other Staff Costs	74,951	73,040	129,616	148,729	223,314	217,731
Materials	64,692	70,260	80,871	97,156	118,428	133,672
Other	9,770	13,416	9,139	10,841	16,074	22,700
Total Instructional	$ 777,746	$ 864,307	$1,117,384	$1,239,248	$1,585,416	$1,865,494
Other Operating						
Salaries--Supporting	$ 111,044	$ 121,201	$ 134,132	$ 128,669	$ 160,096	$ 197,457
Other Staff Costs	15,546	16,969	17,254	16,026	19,846	25,925
Operation--Plant	23,051	28,221	31,471	36,116	44,485	57,858
Maintenance--Plant	26,111	28,627	17,472	21,887	21,583	24,579
Administrative	12,045	13,593	11,067	26,875	18,427	23,791
Services to Pupils	15,319	18,600	12,826	18,616	31,951	44,100
Fixed Charges	17,463	16,452	18,593	13,912	12,702	11,351
Contractual Service	1,583	2,091	6,548	10,932	10,236	9,460
Community Relations	51,180	66,801	8,583	8,672	12,892	10,436
Total Other Operating	$ 273,342	$ 312,555	$ 257,946	$ 281,705	$ 332,218	$ 404,957
Total Operating	$1,051,088	$1,176,862	$1,375,330	$1,520,953	$1,917,634	$2,270,451
CAPITAL	124,466	222,676	86,825	317,180	206,152	120,025
DEBT SERVICE	20,613	23,750	114,285	15,586	36,562	-0-
Total Expenditures	$1,196,167	$1,423,288	$1,576,440	$1,853,719	$2,160,348	$2,390,476
CONTINGENCY RESERVE	17,061	(229,922)	25,067	50,808	113,355	(135,743)
Total Expenditures & Reserve	$1,213,228	$1,193,366	$1,601,507	$1,904,527	$2,273,703	$2,254,733
Number of Students--FTE	1,763	1,741	1,664	1,983	2,406	2,240
Average Expenditure Per Student	$ 678	$ 818	$ 947	$ 935	$ 898	$ 1,067

Source: Accounting Records, Office of Assistant Superintendent for Business Affairs, American Community Schools of Athens, Inc.

Table 4.2.--Teachers salary schedule 1973-74, American Community Schools of Athens, Inc.

Years Experience	BA Index-$	BA + 15 Index-$	MA Index-$	MA + 15 Index-$	MA + 30 Index-$	Ph.D. Index-$
0	1.00 - 6670	1.04 - 6940	1.15 - 7670	1.23 - 8200	1.32 - 8800	1.42 - 9470
1	1.02 - 6800	1.06 - 7070	1.19 - 7940	1.27 - 8470	1.37 - 9140	1.48 - 9870
2	1.04 - 6940	1.09 - 7270	1.23 - 8200	1.32 - 8800	1.42 - 9470	1.54 -10270
3	1.06 - 7070	1.12 - 7470	1.27 - 8470	1.37 - 9140	1.48 - 9870	1.60 -10670
4	1.08 - 7200	1.15 - 7670	1.32 - 8800	1.42 - 9470	1.54 -10270	1.66 -11070
5	1.10 - 7340	1.19 - 7940	1.37 - 9140	1.48 - 9870	1.60 -10670	1.72 -11470
6	- - - - - -	1.23 - 8200	1.42 - 9470	1.54 -10270	1.66 -11070	1.78 -11870
7	- - - - - -	- - - - - -	1.48 - 9870	1.60 -10670	1.72 -11470	1.84 -12270
8	- - - - - -	- - - - - -	- - - - - -	1.66 -11070	1.78 -11870	1.90 -12670
9	- - - - - -	- - - - - -	- - - - - -	- - - - - -	1.84 -11270	1.96 -13070
10	- - - - - -	- - - - - -	- - - - - -	- - - - - -	- - - - - -	2.02 -13470

Source: Accounting Records, Office of Assistant Superintendent for Business Affairs, American Community Schools of Athens, Inc., Athens, Greece, May, 1974.

Table 4.3.--Comparison of budgets 1973-74, American Community Schools of Athens, Inc.

	Parent Approved Dec., 1972	Actual Budget	Actual (Over) Under Parent Approved
	2,500 Students	2,240 Students	
INCOME			
Tuition	$2,499,350	$2,208,926	$ 290,424
Miscellaneous	21,400	31,807	(10,407)
U.S. Government Grants	14,000	14,000	-0-
	$2,534,750	$2,254,733	$ 280,017
EXPENDITURES			
Instructional:			
Salaries	$1,454,188	$1,491,391	$ (37,203)
Other Staff Costs	280,000	217,731	62,269
Materials	154,819	133,672	21,147
Other	21,000	22,700	(1,700)
	$1,910,007	$1,865,494	$ 44,513
Other Operating:			
Salaries	$ 192,711	$ 197,457	$ (4,746)
Other Staff Costs	31,300	25,925	5,375
Operation of Plant	58,100	57,858	242
Maintenance of Plant	31,600	24,579	7,021
Administrative	26,500	23,791	2,709
Services to Pupils	39,500	44,100	(4,600)
Fixed Charges	13,000	11,351	1,649
Contractual Services	15,100	9,460	5,640
Community Relations	15,100	10,436	4,664
	$ 422,911	$ 404,957	$ 17,954
Capital	151,832	120,025	31,807
Contingency (Deficit)	50,000	(135,743)	185,743
	$2,534,750	$2,254,733	$ 280,017

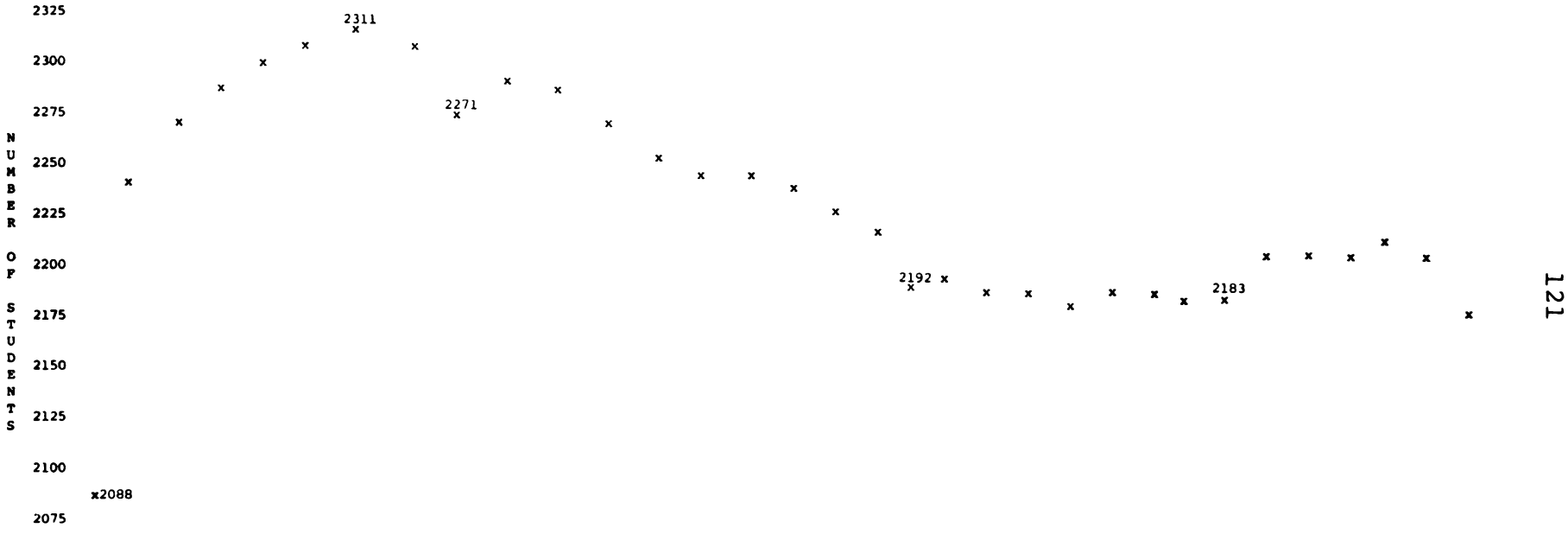
Source: Accounting Records, Office of Assistant Superintendent for Business Affairs, American Community Schools of Athens, Inc., Athens, Greece, August, 1974.

Table 4.4.--Enrollment by grade level (FTE) 1968-69 to 1973-74, American Community Schools of Athens, Inc.

Year	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
1968-69	0	162	164	178	167	168	167	166	113	146	126	111	95	1,763
1969-70	0	166	144	150	156	156	155	154	145	152	140	113	110	1,741
1970-71	27	135	146	132	132	129	174	156	129	142	131	116	115	1,664
1971-72	25	151	165	178	163	172	168	204	175	173	158	120	131	1,983
1972-73	29	200	193	202	201	238	207	185	214	253	210	151	123	2,406
1973-74	22	183	188	203	211	201	128	166	159	220	237	190	132	2,240
% change 1968-69 to 1973-74		12.9	14.6	14.0	26.3	19.6	(30.5)	0	40.7	50.7	88.1	71.2	38.9	27.1

Source: Accounting Records, Office of Assistant Superintendent for Business Affairs, American Community Schools of Athens, Inc., Athens, Greece, June, 1974.

Table 4.5.--Student enrollment by date (FTE) 1973-74, American Community Schools of Athens, Inc.



Source: Accounting Records, Office of Assistant Superintendent for Business Affairs, American Community Schools of Athens, Inc., Athens, Greece, June, 1974.

Table 4.6.--Summary of enrollment by classification 1973-74, American Community Schools of Athens, Inc.

Date	D.O.D.	Civilians USASG	E.E.S.	U.S. Embassy	Civilians	A.C.S. Staff	Total
9- 7-73	1,072	31	12	111	850	55	2,131
9-14-73	1,087	31	12	114	930	59	2,233
9-21-73	1,086	31	12	112	959	61	2,261
9-28-73	1,088	31	12	112	982	61	2,286
10- 5-73	1,091	31	12	112	994	61	2,301
10-12-73	1,092	31	12	112	1,000	61	2,308
10-19-73	1,092	31	12	112	997	65	2,309
10-29-73	1,094	31	12	112	994	65	2,308
11- 7-73	1,078	31	12	107	978	65	2,271
11- 9-73	1,085	31	12	107	987	65	2,287
11-16-73	1,084	31	12	107	989	65	2,288
11-21-73	1,082	31	12	105	986	65	2,281
12- 1-73	1,073	31	12	105	983	65	2,269
12- 8-73	1,058	31	12	105	987	66	2,259
12-14-73	1,052	31	12	103	978	65	2,241
12-21-73	1,051	31	11	102	964	65	2,224
1-18-74	1,059	28	11	101	950	65	2,214
1-23-74	1,057	28	11	99	941	65	2,201
Percentage	48%	1.3%	.5%	4.5%	42.7%	3%	100%

Source: Accounting Records, Office of Assistant Superintendent for Business Affairs, American Community Schools of Athens, Inc., Athens, Greece, June, 1974.

Table 4.7.--Expenditures by program element 1973-74, Hellenikon Elementary, American Community Schools of Athens, Inc.

Program Element	Number		Teachers	Aides	Other Staff Cost	Supplies	Equipment	Other Direct Costs	Total Instruct. Cost	Average Cost Per Student
	Students	Teachers								
Reading & Language Arts	593	22	$ 71,195	$11,132	$ 7,352	$13,289	$1,140	$ 480	$104,588	$176
Mathematics	593	22	53,483	8,348	5,543	7,323	1,260	260	76,217	129
Science	593	22	26,742	4,175	2,771	4,292	1,900	260	40,140	68
Social Studies	593	22	26,742	4,175	2,771	1,666	2,200	260	37,814	64
Art	593	1	7,850	2,530	971	2,157	500	-	14,008	24
Music	593	2	9,935	-	891	794	250	260	12,130	20
Physical Education	593	2	10,811	2,530	1,196	1,271	530	260	16,598	28
Foreign Languages	346	1	8,200	2,530	962	580	500	260	13,032	38
Special Programs	153	3	21,372	5,060	2,369	420	220	-	29,441	192
Totals			$236,330	$40,480	$24,826	$31,792	$8,500	$2,040	$343,968	

Table 4.8.--Expenditures by program element 1973-74, Halandri Elementary, American Community Schools of Athens, Inc.

Program Element	Number		Teachers	Aides	Other Staff Cost	Supplies	Equipment	Other Direct Costs	Total Instruct. Cost	Average Cost Per Student
	Students	Teachers								
Reading & Language Arts	420	19	$ 63,140	$ 8,258	$ 9,465	$ 7,500	$ 900	$ 570	$ 89,833	$214
Mathematics	420	18	30,745	3,935	4,580	4,600	1,000	290	45,150	108
Science	420	18	30,745	3,183	4,480	2,600	1,500	290	42,798	102
Social Studies	420	19	33,297	3,062	4,800	4,200	1,556	290	47,205	112
Art	420	1	9,000	-	1,190	2,400	400	-	12,990	31
Music	250	3	6,720	-	900	750	200	-	8,570	34
Physical Education	420	1	9,480	4,762	1,880	1,750	500	-	18,372	44
Foreign Languages	350	2	8,450	-	1,120	1,000	500	-	11,070	32
Special Programs	100	2	12,743	-	1,686	600	200	-	15,229	152
Totals			$204,320	$23,200	$30,101	$25,400	$6,756	$1,440	$291,217	

Table 4.9.--Expenditures by program element 1973-74, Middle School, American Community Schools of Athens, Inc.

Program Element	Number		Teachers	Aides	Other Staff Cost	Supplies	Equipment	Other Direct Costs	Total Instruct. Cost	Average Cost Per Student
	Students	Teachers								
Language Arts	321	9	$ 31,597	$ -	$ 4,448	$ 2,950	$ 300	$ 200	$ 39,495	$127
Mathematics	450	8	34,464	7,420	5,782	2,950	400	100	51,116	114
Social Studies	450	8	30,806	-	4,335	3,350	300	200	38,991	87
Science	423	9	30,866	-	4,344	3,450	1,300	200	40,160	95
Foreign Languages	312	7	23,366	-	3,289	1,900	200	340	29,095	93
Music	155	3	11,251	-	1,585	540	300	-	13,676	88
Art	144	2	6,480	-	913	-	-	-	7,393	51
Physical Education	422	4	17,514	1,650	2,714	1,050	500	-	23,428	56
Industrial Arts	90	1	3,946	-	556	1,250	800	-	6,552	73
Home Arts	63	1	6,294	-	888	1,050	300	170	8,702	138
Special Programs	241	8	19,516	4,490	3,010	2,410	800	340	30,566	127
Totals			$216,100	$13,560	$31,864	$20,900	$5,200	$1,550	$289,174	

Table 4.10.--Expenditures by program element 1973-74, High School, American Community Schools of Athens, Inc.

Program Element	Number		Teachers	Aides	Other Staff Cost	Supplies	Equipment	Other Direct Costs	Total Instruct. Cost	Average Cost Per Student
	Students	Teachers								
English	854	11	$ 68,190	$ -	$12,031	$ 8,100	$ -	$1,390	$ 89,711	$105
Mathematics	683	7	68,650	-	12,103	6,200	125	-	87,078	128
Social Studies	802	10	80,677	-	14,198	7,850	400	640	103,765	129
Science	616	6	56,352	-	9,921	6,400	2,830	160	75,663	123
Foreign Languages	627	9	68,578	-	12,080	5,650	200	320	86,828	138
Music	104	2	4,871	-	852	900	1,000	-	7,623	73
Business	324	3	25,063	-	4,419	3,750	14,000	-	47,232	146
Art	133	2	13,890	-	2,444	1,600	2,370	160	20,464	154
Physical Education	479	5	27,658	-	4,873	2,800	645	-	35,976	75
Industrial Arts	178	2	15,818	-	2,787	3,900	3,800	-	26,305	148
Home Economics	67	1	9,392	-	1,656	1,150	80	-	12,278	183
Special Programs	276	2	12,837	2,264	2,393	1,200	-	4,200	22,894	83
Totals			$451,976	$2,264	$79,757	$49,500	$25,450	$6,870	$615,817	

Table 4.11.--Crosswalk budget--program budget to traditional budget 1973-74, American Community Schools of Athens, Inc.

Program Budget	Total Program Budget	Salaries	Other Staff Costs	Materials	Other Direct Costs	Capital
INSTRUCTIONAL:						
Reading & Language Arts	$ 233,916	$ 185,322	$ 21,265	$ 23,739	$ 1,250	$ 2,340
Mathematics	259,561	207,045	28,008	21,073	650	2,785
Science	198,761	152,063	21,516	16,742	910	7,530
Social Studies	227,775	178,759	26,104	17,066	1,390	4,456
Art	54,855	39,750	5,518	6,157	160	3,270
Music	41,999	32,777	4,228	2,984	260	1,750
Physical Education	94,374	74,405	10,663	6,871	260	2,175
Foreign Languages	140,025	111,124	17,451	9,130	920	1,400
Special Programs	98,130	78,282	9,458	4,630	4,540	1,220
Industrial Arts	32,857	19,764	3,343	5,150	-	4,600
Home Art	20,980	15,686	2,544	2,200	170	380
English	89,711	68,190	12,031	8,100	1,390	-
Business	47,232	25,063	4,419	3,750	-	14,000
Subtotal	$1,540,176	$1,188,230	$166,548	$127,592	$11,900	$45,906
NON-INSTRUCTIONAL:						
Administrative & Other	445,343	303,161	51,183	6,080	10,800	74,119
TOTAL TRADITIONAL BUDGET	$1,985,519	$1,491,391	$217,731	$133,672	$22,700	$120,025

Table 4.12.--Instructional objectives (on a selective basis), American Community Schools of Athens, Inc.

HIGH SCHOOL--ENGLISH

1. To provide each student further opportunity to develop and apply his skills in reading, writing, speaking and listening.
2. To develop in each student an awareness of the importance of the English language and to emphasize the necessity of using it with accuracy and conscience.

HIGH SCHOOL--GEOMETRY

1. To develop the student's powers of logical deductive reasoning, including critical analysis.
2. To extend the student's geometric awareness beyond the intuitive level.
3. To further develop the student's algebraic ability.

MIDDLE SCHOOL--LANGUAGE ARTS

1. To learn to enjoy and understand literature in short story form by varied authors.
2. To learn the structure of the English language.
3. To increase vocabulary.

HELLENIKON ELEMENTARY SCHOOL--MATHEMATICS

1. To provide an effective learning setting, enrichment materials and concrete reinforcement work to help the child master specific math skills.
8. To instill in the child that math is exciting and through logical sequence a solution is always forthcoming.

HALANDRI ELEMENTRY SCHOOL--READING AND LANGUAGE ARTS

1. To read orally and silently with comprehension and skill.
10. To choose reading as a leisure-time activity.
14. To use reference materials and library resources skillfully.

Source: "Two-Year Master Plan," Athens, Greece: American Community Schools of Athens, Inc., May, 1973.

Table 4.13.--Testing program for 1973-1974, American Community Schools of Athens, Inc.

Fall

Metropolitan Readiness Test (Grade 1)

Preliminary Scholastic Aptitude Test/(PSAT)[1]/
National Merit Scholarship Qualifying Test--(NSMQT)

Scholastic Aptitude Test--(SAT)[2]

American College Testing--(ACT)[3]

Spring

California Achievement Test (CAT-70-A) (Grades 3-9)

Metropolitan Achievement Test--Form A (Grade 1)

Differential Aptitude Test (Grade 8)

Scholastic Aptitude Test--(SAT)[2]

American College Testing--(ACT)[3]

Advanced Placement Tests[4]

[1]PSAT of the College Entrance Examination Board.

[2]SAT of the College Entrance Examination Board.

[3]ACT of the American College Testing Service.

[4]Advanced Placement Tests of the Collete Entrance Examination Board.

Source: Testing Records, Office of Assistant Superintendent for Personnel, American Community Schools of Athens, Inc., Athens, Greece, May, 1974.

Table 4.14.--Result of tests (on a selective basis) 1973-74, American Community Schools of Athens, Inc.

California Achievement Tests--1970 Edition

School & Grade Level	Reading	Mathematics	Language	A.C.S. Battery Average	U.S. Average
Hellenikon Elem.:					
3.6	4.1	3.6	4.3	3.9	3.6
4.6	5.0	4.5	5.3	4.9	4.6
5.6	6.1	5.4	7.1	6.0	5.6
Halandri Elem.:					
3.6	3.6	3.9	4.0	3.9	3.6
4.6	4.7	4.5	4.7	4.6	4.6
5.6	5.3	5.5	6.1	5.6	5.6
Middle:					
6.6	6.8	6.7	7.8	7.1	6.6
7.6	7.9	8.0	9.0	8.2	7.6
8.6	9.1	9.0	9.6	9.2	8.6
High:					
9.6	10.3	9.5	10.1	10.0	9.6

Metropolitan Achievement Test

School and Grade Level	Word Knowledge	Word Discrimination	Reading	Spelling	Arithmetic	Total Average
Hellenikon Elem.:						
1.0	2.1	2.4	2.1	-	2.4	2.2
2.0	3.4	3.8	3.2	3.7	3.3	3.5
Halandri Elem.:						
1.0	2.1	2.4	2.2	-	2.3	2.3
2.0	3.1	3.7	3.1	3.2	3.2	3.3

Source: Testing Records, Office of Assistant Superintendent for Personnel, American Community Schools of Athens, Inc., Athens, Greece, June, 1974.

Table 4.15.--Graduates of 1970, 1971 and 1972 enrolled in institutions of higher learning, American Community Schools of Athens, Inc.

1. In the United States

S.U.N.Y.
San Diego State
Lowell Tech
University of Tennessee
University of Oregon
Henderson State
University of Texas, El Paso
V.P.I.
Colorado State
Northern Arizona
West Virginia
San Francisco State
California State
College of Steubenville
North Texas State
Trenton State
Georgia State
University of New Mexico
Northern Michigan
Stout State
University of South Carolina
Mississippi State
Miami, Ohio
Illinois State University
San Jose State
University of Connecticut
University of Arizona, Tucson
Eastern Tennessee State
Texas A & M
Ohio State
Adams State
Arizona State
Memphis State
Marymount
Southwest College
Temple Buell
University of the Pacific
Old Dominion
College of Design
Mary Washington
University of South Florida
Urbana College
University of Redlands
Amarillo, Texas
Coast Guard Academy
Alma, Michigan
University of Miami
Duke
Johns Hopkins
Northwestern
Hood
Boston University
Jackson
Northeastern
Regis
University of Pennsylvania
Temple
Gonzaga
Southern California
University of Rochester
University of Pittsburgh
Ripon
University of California
Rice
Stanford
Loyola
University of Virginia
University of Wisconsin
Rochester Institute of Technology
Union
Bard
Springfield
Georgetown
Bucknell
Carnegie-Mellon
Hofstra
Pennsylvania State
Ohio University
Beloit
University of North Carolina
University of Michigan
University of Florida
University of Maryland
University of San Francisco
University of Massachusetts
University of Rhode Island
LaSalle, Philadelphia

Table 4.15.--Continued.

2. In Countries Other Than the United States

Pierce College, Athens, Greece	York University, Canada
English Universities	American College in Paris
University of Maryland, Munich	University of Maryland, Athens
Sir George Williams, Canada	Schiller College, Germany
American University of Beirut	University of Sacred Heart, Japan
Athens Polytechnic Institute	University of Witwatersrand, South Africa

Source: Dr. John Dorbis, Assistant Superintendent for Personnel, American Community Schools of Athens, Inc., "A Special Report on 'Curriculum'" (Athens, Greece: American Community Schools of Athens, Inc., December, 1972), pp. 15-16.

Table 4.16.--Estimated enrollment, American Community Schools of Athens, Inc.

School	Year 1	Year 2	Year 3	Year 4	Year 5
Hellenikon Elementary					
1	x	x	x	x	x
2	x	x	x	x	x
3	x	x	x	x	x
4	x	x	x	x	x
5	x	x	x	x	x
Total	xx	xx	xx	xx	xx
Halandri Elementary					
K	x	x	x	x	x
1	x	x	x	x	x
2	x	x	x	x	x
3	x	x	x	x	x
4	x	x	x	x	x
5	x	x	x	x	x
Total	xx	xx	xx	xx	xx
Middle					
6	x	x	x	x	x
7	x	x	x	x	x
8	x	x	x	x	x
Total	xx	xx	xx	xx	xx
High					
9	x	x	x	x	x
10	x	x	x	x	x
11	x	x	x	x	x
12	x	x	x	x	x
Total	xx	xx	xx	xx	xx
Grand Total	xxx	xxx	xxx	xxx	xxx

Table 4.17.--Program structure--instructional areas, American Community Schools of Athens, Inc.

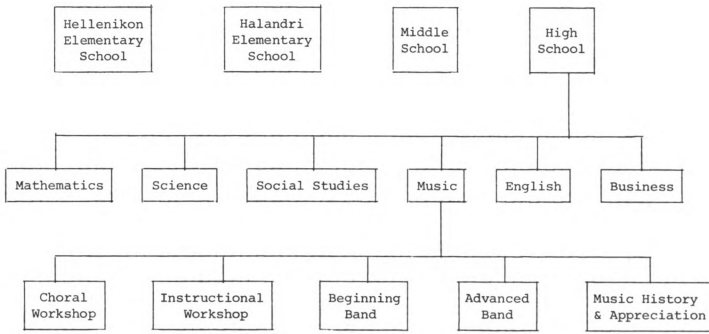
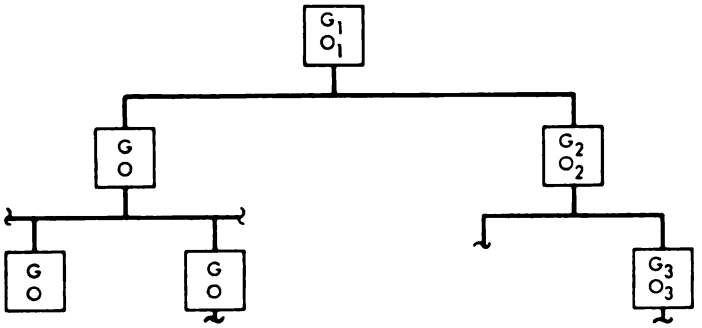


Table 4.18.--Hierarchy of goals and objectives with measurements of achievement.



G_1	TO PROVIDE ALL STUDENTS THE OPPORTUNITY TO DEVELOP AN APPRECIATION OF MUSIC.
O_1	90 PERCENT OF ALL GRADUATING SENIORS WILL HAVE EITHER PARTICIPATED IN BAND, VOCAL MUSIC, OR COMPLETED A COURSE IN MUSIC APPRECIATION WITHIN THREE YEARS OF HIGH SCHOOL.
G_2	TO PROVIDE ALL STUDENTS THE OPPORTUNITY TO DEVELOP AN UNDERSTANDING AND APPRECIATION OF MUSIC HISTORY, MUSIC THEORIES, AND MUSIC LISTENING.
O_2	90 PERCENT OF THE STUDENTS COMPLETING THE COURSE IN MUSIC APPRECIATION UNDERSTAND THE HISTORY OF MUSIC AND DIFFERENCES AMONG PROGRAM MUSIC, ABSOLUTE MUSIC, OPERA, ORATIONS, ART SONGS, AND OVERTURES AS MEASURED BY LISTENING AND OTHER CLASSROOM TESTS.
G_3	TO PROVIDE ALL STUDENTS THE OPPORTUNITY TO DEVELOP AN APPRECIATION FOR MUSIC LISTENING.
O_3	UPON COURSE COMPLETION, 90 PERCENT OF THE STUDENTS WILL EXPRESS VERBALLY THAT THEY APPRECIATE LISTENING TO MUSIC.

Source: California Department of Education, Conceptual Design for a Planning, Programming, Budgeting System (Sacramento, Calif.: California State Department of Education, 1969), p. 9.

Table 4.19.--Estimating costs at subject level, American Community Schools of Athens, Inc.

Program Element MUSIC

Subject Name CHORAL WORKSHOP

	Year 1	Year 2	Year 3	Year 4	Year 5
SALARIES:					
Professional	x	x	x	x	x
Paraprofessional	x	x	x	x	x
Other	x	x	x	x	x
Total Salaries	xx	xx	xx	xx	xx
OTHER STAFF COSTS:					
Payroll Taxes	x	x	x	x	x
Travel	x	x	x	x	x
Relocation Allowance	x	x	x	x	x
Retirement	x	x	x	x	x
Other	x	x	x	x	x
Total	xx	xx	xx	xx	xx
MATERIAL:					
Textbooks	x	x	x	x	x
Audio-Visual Supplies	x	x	x	x	x
Teaching Supplies	x	x	x	x	x
Other	x	x	x	x	x
Total	xx	xx	xx	xx	xx
OTHER DIRECT COSTS:					
Workshops	x	x	x	x	x
Conferences	x	x	x	x	x
Other	x	x	x	x	x
Total	xx	xx	xx	xx	xx
EQUIPMENT:					
Describe Each Major Item:					
_____	x	x	x	x	x
_____	x	x	x	x	x
Total	xx	xx	xx	xx	xx
TOTAL DIRECT INSTRUCTIONAL COSTS	xxx	xxx	xxx	xxx	xxx

Table 4.20.--Summary of estimated costs for program element, American Community Schools of Athens, Inc.

Year 1

Program Element MUSIC

	Subject					
	Choral Workshop	Instruct. Workshop	Beginning Band	Advanced Band	Music History & Appreciation	TOTAL COST
Salaries	x	x	x	x	x	x
Other Staff Costs	x	x	x	x	x	x
Material	x	x	x	x	x	x
Other Direct Costs	x	x	x	x	x	x
Equipment	x	x	x	x	x	x
Total	xx	xx	xx	xx	xx	xx

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