CRAWFORD, CHASE WILLIAM
A PLANNING SYSTEM FOR PRODUCING USEFUL
INFORMATION FOR POLICYMAKERS TO JUDGE
ALTERNATIVES ABOUT A STATE EDUCATIONAL
FINANCE SYSTEM.

THE OHIO STATE UNIVERSITY, PH.D., 1979

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A PLANNING SYSTEM FOR PRODUCING USEFUL INFORMATION
FOR POLICYMAKERS TO JUDGE ALTERNATIVES ABOUT A
STATE EDUCATIONAL FINANCE SYSTEM

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Chase William Crawford, B.A., M.A.T.

* * * * *

The Ohio State University
1979

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And finally, I am indebted to my wife, Marianna, and to my parents, who encouraged, harassed, empathized, and loved me throughout the peaks and the valleys of this period of time.
## VITA

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Only those publications of which at least 100 copies were printed or those which were directly involved with degree-required research are listed below:

Gauss-Legendre Mechanical Quadriture Method of Numerical Integration with SPS and FORTRAN computer programs. Delaware, Ohio: Ohio Wesleyan University, June, 1964. (67 pages)


"Profile of Upper Arlington Schools." Upper Arlington News. Upper Arlington, Ohio, February through June, 1970. (1 or 2 columns weekly, 10,000 copies)


Draft of Florida Public Schools Finance Data Base. Tallahassee: Florida Department of Education, April, 1976. (300 pages, 100 copies)


FIELDS OF STUDY

Major Field: Educational Administration and Educational Development

Studies in Administration.

School Finance, Economics and School Finance, and School Business Administration. Professor Walter G. Hack

Structure and Organization of American Educational Systems and Staff Personnel Administration. Professor Roy A. Larmee

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Other Studies in Administration. Professors Donald P. Anderson, I. Carl Candoli, Hugh D. Laughlin, and Lonnie H. Wagstaff

Studies in Development.


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Studies in Instruction, Curriculum, and Supervision. Professors Kenneth Arisman, James B. Burr, Charles M. Galloway, and John B. Hough
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CHAPTER I

PURPOSE OF STUDY AND METHODOLOGY

A. Antecedents to Problem

We hardly need add that this Court's action today is not to be viewed as placing its judicial imprimatur on the status quo. The need is apparent for reform in tax systems which may well have relied too long and too heavily on the local property tax. And certainly innovative new thinking as to public education, its methods and its funding, is necessary to assure both a higher level of quality and greater uniformity of opportunity. These matters merit the continued attention of the scholars who already have contributed much by their challenges. But the ultimate solutions must come from the lawmakers and from the democratic pressures of those who elect them.  

With these statements the U.S. Supreme Court in 1974 concluded its majority opinion in the San Antonio Independent School District v. Rodriguez decision. Although this landmark educational finance decision was contrary to a number of lower court decisions and although it may have decelerated the educational finance reform movement's momentum, the need for educational finance reform still exists.

Only a year before the San Antonio Independent School District v. Rodriguez decision, the President's Commission on School Finance asserted:
When we focus in on our purview as a Commission, that is, on school finance, one unquestionable fact emerges: this nation cannot continue to finance and distribute education as it has in the past. For many reasons—fiscal, legal, political, and moral—the system will have to change.4

The process by which funds are raised and distributed for public education throughout the United States has, during the past century, evolved into a dense jungle of legislation, formulas, and procedures. More than that, whatever its initial intentions and results, it is no longer effective or equitable by the present criteria we apply to measure public purposes.5

Most recently in 1978, Congress enacted law directing the Department of Health, Education, and Welfare to conduct eleven studies on school finance issues. Among these are analyses of the capacities of educational finance systems, the recent trends in changing formulas for the distribution of funds, the standards to measure equalization and expenditure disparities, and the impact of equalization on the cost and quality of education programs as well as on curricular and extracurricular activities.6

These federal judicial, executive, and congressional actions and many studies of state educational finance have deeply rooted antecedents of various genre. Educational finance literature suggests that fundamental changes in the field have their genesis in basic social forces and other antecedent movements which are national in scope.7

The nature of the American economy and its changes have had marked influences on school finance. Traditional sources of revenue have proven to be inadequate due to
inflationary conditions, both nationally and internationally. Inflation has inflicted blows to both the revenue and allocation dimensions of educational finance. On the revenue side, the inelastic state-local tax systems which provide about 90% of educational revenue have been unable to respond adequately to the increased need for funds. The property tax is the predominant state-local, educational revenue source. Unfortunately, it is the most inelastic.

Being a labor-intensive service with the vast majority of its expenditures going to salaries and related items, education has been forced to seek additional funds from its relatively inelastic revenue base to maintain competitive salaries for existing personnel. Additionally education must compete for funds with other human services such as health and welfare. These services not only compete with education by being predominantly funded by state-local revenue systems, but they also depend upon many of the same political supporters. Thus, adequate funding of all of these human services becomes difficult.

A second significant economic force to affect educational financing during the past decade is related to the condition of state government finances. It is hardly a coincidence that the highwater mark of the educational finance reform movement during the past decade occurred in 1972 and 1973, the first time that the states had experienced a surplus in their general government funds since
1947. More recently states are responding to their lagging revenue collections either by deferring major educational finance reforms or by approving substantial budget reductions.9

The increasing political strength of the educational associations has given visibility to economic issues. At the state level, the political strength has been evidenced by the grass roots lobbying efforts of many different associations for increased salary and fringe benefits, with the teachers' groups bearing much of the load. At the local level, the economic impact of teachers' negotiations has placed a tremendous drain on the school districts' budgets.10

A fourth significant economic force to affect educational funding during the past decade, and perhaps what may prove to be the most significant economic force in the next decade, is the heightened level of dissatisfaction shown by the public on tax issues. At the beginning of this past decade, this was evidenced by the increasing rate of defeat of local school property tax millage elections. More recently the political strength of this "taxpayers' revolt" has been manifested in statewide referenda to reduce taxes. Local school tax levies in many states are the only direct-vote issues upon which the electorate can vent its frustrations with government. These frustrations have been caused by perceived high
taxes along with governmental inefficiency and ineffectiveness. It is all too ironic that the electorate perceives local governmental operations to be the most efficient and effective.\textsuperscript{11}

A closely related economic force affecting educational finance during the past decade has been the unwillingness of the public to pay more taxes for something which it appears does not possess sufficient social value. The marginal return of tax-supported education for the social and individual good to the public has apparently not been as great as the marginal return of other items available in both public and private market places.

However, in looking at the private marketplace, it is interesting to note that many parents appear to value education enough to pay for a number of years of K-12 education for educational, religious, and racial reasons or to pay for up to four years of post-high school education when the payment is in tuition and the return is viewed as individual improvement. Micro-economic educational financing and its return appear to be far more acceptable to the public than macro-economic educational financing and its return.\textsuperscript{12}

Several significant demographic forces have affected educational financing during the past decade. Two of these, which have amalgamated to create a compound effect of need for more educational funding, have been the increased
number of school-age children and the increased number of years of education being completed by these children. Not only was the number of the children receiving education increasing into the early 1970s, but also a greater proportion of them were completing more years of education.13

Then in the early 1970s the number of school-age children began to decrease and educators were faced with the somewhat contrary problem of closing schools.14 However, the decrease was generally not of sufficient magnitude to prevent costs from continuing to rise with the inflationary economy. Taxpayers began to question increases in costs with decreases in numbers of students.

This decrease in the numbers of students created fewer households which obtained direct benefits of education. This problem was compounded by the increasing number of older citizens which resulted in even fewer households receiving direct benefits of education.15

A major sociological dislocation has resulted when public education has failed to adjust to the needs of a rapidly changing dynamic society.16 For example, society has changed from information-poor to information-rich. Schools have been designed to educate an information-poor society while the students attending them live in an information-rich society. A number of existing jobs for which students are now being educated may not even exist a decade from now.17 This situation suggests the need
for the reallocation of existing funds to better meet the
needs of the learners.

In recent times society has become more acutely
aware of the needs of handicapped children. Concurrently,
spokesmen for these children with high cost educational
needs have become increasingly effective in obtaining
state aid for this education.18

Political movements designed to change state edu­
cational financing systems are born in response to basic
forces. These movements cover a broad continuum beginning
with the promotion of interests, continuing through politi­
cal demanding and leading to political action. They can
be official or unofficial, direct or indirect, and advanced
by individuals or groups. They are usually national in
scope although often advanced by state and local actors
and groups.19

Interest promotion is a communication of values
to the policymakers whose decisions will affect these
values. As interests are advanced or furthered, some
achievement of representation is sought by the promoter.
After representation is achieved, the interests, which are
expressed to policymakers indicating that a particular
policy be made, become political demands. When political
demands achieve effective influence, political action
usually comes to pass. Although the existence of interest
promotion, political demands, and the achievement of representation are not sufficient for effective influence, they are necessary.20

B. General Problem and its Significance

As a consequence of these antecedent conditions, a state's policymakers may find themselves confronted with a problem. The multiplicity of both the demands and the outcomes of the various political actions may overburden the policymakers with more alternatives than can be comfortably processed in the established ways. The policymakers will have a strong need to aggregate these alternatives into a limited agenda of options from which policies can be enacted.21

Also, a difference of some magnitude between the proposed funding changes and the existing educational funding methods may in some states exert a great amount of stress on the traditional, incremental way existing statutes are revised, refined, and extended. A rapid escalation of demands from federal, state, and local levels is already being thrust upon state education policymaking systems. The complexity and often incompatibility of these demands, the impossibility that each can be attained through the policymaking process, and the widespread publicity given to the differential benefits of existing allocations--all of these elements coming simultaneously with
the advent of major reform in educational finance have the potential to place stress on any governmental system. The Educational Governance Project staff polled selected leaders in all 50 states. They found that, of the eight policy areas presented, financial support was by far the most critical. When the commissioners of the Education Commission of the States were polled, the financing of schools and colleges was their number one concern.22

The magnitude of the policymakers' problem may be increased because the proposed changes in the established patterns of educational funding might result in a significant redistribution of funds. This redistribution might result in (1) some school districts receiving less state support than at present while others would be receiving more or (2) very few school districts, possibly none, receiving less state support while some, probably most, would be receiving more.23 The former redistribution possibility would be the case where the proposed changes in the state support program would occur with very little net increase in total funds. To decrease a school district's support without justifiable cause is educationally and economically unsound and politically, for a state policymaker, very unpopular with the voters back home. The latter redistribution possibility would lead to a need for significantly increased educational funding by the state. This increase would have to come (1) from the reallocation of existing
state funds, thereby causing other state programs to suffer; (2) from increased revenue, thereby probably causing an increase in taxes; or (3) from federal revenue sharing or federal aid. Only this last source allows the state policymakers the best opportunity to avoid a politically unpopular situation. It is interesting to note that in either of the cases above where funds would be redistributed, those districts which would be in the more disadvantageous positions with respect to the redistribution of state support probably also would be those which have been more advantageously represented in the legislature.

A frequent solution to such a political problem is a study commission, study committee, or task force. State study commissions for education, and more specifically for educational finance, are becoming commonplace. The virtue of study commissions lies both in involving more people in policy formation and in delaying action. The ambiguity lies in the nature of the commission's recommendations which usually must bridge an impasse. Study commissions may be set up as conscious "depressants," or they may be weighted so that strong recommendations for increases in state support will make some progress but also will free the policymakers from assuming complete responsibility.

Special studies should be cooperative rather than competitive; utilize and supplement data and information
already available; dissolve when their objectives are attained; and enhance, strengthen, and coordinate the long-range planning effort in the state. The personnel belonging to a study commission should be selected because of expertise, concern, perspective, and interest in financial education. They should also be as representative of the state as possible.

On the other hand, as a consequence of the aforementioned social movements, a state's policymakers may not find themselves confronted with a situation which they perceive to be a problem serious enough to require a study commission. However, the policymakers may still desire to have a study conducted by a committee, a consultant team, staff members, or some combination of these.

The role of consultants and other experts may vary from contracting to do the study and prepare the report, including recommendations, to working only in association with the group doing the study by helping in the study design, data analysis, and report preparation.

Unfortunately, a number of state studies follow a limited-comparisons approach to planning with much reliance on past experience. Instead, state studies should rely more on a rational-comprehensive approach to planning. This approach utilizes a comprehensive means-ends
analysis where the ends are first isolated, then the means to achieve them are sought.29

The need for a planning study is closely related to environmental circumstances in the setting in which the study will take place. The degree of change foreseen in the state educational finance system as perceived by the policymakers and the degree of understanding about this change will have a great impact on the depth and thoroughness of the planning study. The degrees of formality and internality/externality intended for the planning study will have an impact on the depth and thoroughness of the planning study. In addition the level of agreement between the agenda of all legitimate concerns for the planning study and the agenda being formally considered for the study will have a great impact on the depth and thoroughness of the planning study. The most evident indicator of the impact which these environmental circumstances have on the planning study will be the type of group selected to do the study: a blue-ribbon commission, a committee, a consultant team, a group of staff members, or some combination of these groups.30

In the state educational finance studies which have recently been conducted, the framework for each was largely dependent upon the expertise of the key professional staff members and consultants involved. Many of these professionals have been well-versed in a number of impor-
tant areas such as educational finance, educational law, educational administration, and economics. Noticeably absent have been many professionals well versed in educational planning, educational evaluation, and systems approaches to education. Perhaps good reason exists for their absence—these three fields are just coming to the forefront in the field of education as a means of solving problems on a macro level. When the Educational Governance Project polled some selected leaders in the 50 states, it was found that planning and evaluation was second only to financial support in degree of cruciality as a state policy area.31

In the past, planning in education has not been sufficiently systematic, comprehensive, continuous, or long-range.32 Too many "top of the head", "seat of the pants", and "shoot from the hip" decisions have been made because of inadequate planning.

Also conspicuously absent in some recent state educational finance studies has been a determination of the proposed changes in the methods of financing education explicitly based upon the educational goals, needs, and objectives of the state. In some states where the educational goals provided direction for the educational finance study, goals were determined by a small group of people who may not have been adequately representative of the state's citizens. In other states, need was more
closely aligned with political need than with educational need. In almost all states, educational need appears to be more closely associated with the relative costs of programs rather than with deficiencies in the performance of students. Frequently state educational finance studies have been based only upon the merits of generally accepted educational finance criteria without explicit emphasis having been given to the educational goals and needs of the particular state. In some states changes in the educational finance system have been proposed on the basis that other states have considered or made these changes and that therefore these changes would be appropriate for this state. Of course changes in a state's educational finance system have also been proposed which would benefit those groups possessing political power but which doubtless would have led to inequities for a significant part of a state, perhaps a majority of it. With the existing demands of accountability which challenge educators to explain the results which they are achieving, it is difficult to justify changes in a state's educational finance system which are not related to goals or to educational needs.  

C. Purposes of the Study

For a study setting where goals and needs must be delineated and where educational finance alternatives must be formulated which will lead to the resolution of these needs, a planning system is needed. This planning system
must produce useful information for policymakers to judge alternatives for a state educational finance system. First, this planning system must provide the information necessary for planning decisions which allow policymakers to establish educational needs and/or objectives based on educational goals or concerns. Second, the planning system must provide information necessary for structuring decisions in which policymakers determine the existence of alternative educational finance methods and means which might promote the resolution of the educational needs or the achievement of the educational objectives, with one alternative being the existing educational finance system. The structuring decisions should also determine the likelihood that these alternative educational finance methods and means will promote the resolution of the educational needs or the achievement of the educational objectives. The primary purposes of this study are to develop and to test this planning system.

D. Purpose Statement

The primary purposes of this study are to develop and to test a planning system for producing useful information for policymakers to judge alternatives about a state educational finance system. Because this planning system must function in a political environment of policy formation, a system depicting this environment will also be developed as a context for the study.
Operational definitions of the key terms in the purpose statement are:

**System**: a set of interacting units with relationships among them

**Planning System**: a system for producing useful information for policymakers to judge alternatives about a state educational finance system

**Producing**: making useful information available by means of collecting, organizing, analyzing, and reporting

**Useful**: satisfying scientific (internal validity, external validity, reliability, and objectivity); practical (relevance, importance, scope, credibility, and timeliness); and prudential (cost-efficient and cost-benefit/cost-effective)

**Information**: descriptive, comparative, explanatory, and predictive findings about both tangible and intangible entities and about their relationships

**Policymakers**: those state officials with legal or delegated authority and responsibility to make decisions and to establish priorities which are of sufficient significance that they direct subsequent decisions

**To Judge Alternatives**: to choose among several different actions of both a substantive and a procedural nature

**State Educational Finance System**: a collection of interrelated allocation funds which become in their effect an integrated whole to fulfill certain state educational goals or purposes

Because a state educational finance system is composed of many elements, the following eight system characteristics will help in classifying these potential elements:

1. **function**: to distribute funds to fulfill certain state educational goals or purposes.
2. inputs: revenue and the data necessary to transform the revenue into allocations of funds.

3. sequence: collection, organization, storage, retrieval, analysis, and distribution.

4. outputs: allocations, regulations, and policies pertaining to these allocations along with information.

5. environment: all tangible and intangible entities in the educational, social, economic, and political milieux related to the system which may effect change on the system and on which the system may effect change.

6. boundary: the circumscribing characteristics which distinguish the system from its environment.

7. actors: state officials with legal and delegated policymaking and decision-making authority and responsibility.

8. catalysts: the support service used by the actors such as computer, publication, facility and administrative services which do not undergo significant change in the sequence.

E. Systems Logic Used in this Study

The development of the planning system along with the development of its environmental policy formation system and the testing of the planning system follows a problem-solving, systems logic flow advocated by Roger Kaufman. The major components are:

1. Problem identification,
2. Determination of solution alternatives,
3. Selection of solution alternatives,
4. Implementation of solution alternatives, and
The problem was identified earlier. The conceptual alternatives determined to be appropriate to solve the problem were identified from among (1) policy formation models, (2) systems analysis and systems synthesis processes, and (3) general educational planning and evaluation systems. The extent of the search for these conceptual alternatives was determined by the recommendations of authorities at Ohio State University in the three areas identified above, namely: Dr. Roald Campbell, Director of the Educational Governance Project and Fawcett Professor of Educational Administration; Dr. Desmond Cook, Director of the Ohio State University Educational Program Management Center and Professor of Educational Development; and, Dr. Daniel Stufflebeam, Director of the Ohio State University Evaluation Center and Professor of Educational Development.

The principal sources for conceptual alternatives used in the development of the planning system and its environmental policy formation system have been the following:

Context, Input, Process, and Product Evaluation Model
Educational Decision-Making Model
Evaluation Methodology
Planned Change Model
Functional Stages of Policymaking
Policy Formation Process
Management System for Planning and Controlling Educational Projects
Educational System Planning and Educational System Synthesis
From among these principal sources, conceptual alternatives were selected and implemented. The synthesis of the alternatives resulted in the products of the planning system, presented in Chapter IV, and its environmental policy formation system, presented in Chapter III.

Two determinations were made of the effectiveness of the systems. First, each system was critiqued by a panel of experts (see Appendix G) who reviewed drafts of the systems and provided criticisms and suggestions, most of which were incorporated into the systems used and tested. Finally, two applications of the planning system using Florida data are presented and an assessment of the usefulness of the information was made by a second panel of experts (see Appendix H). These applications of the planning system along with recommendations from the panel of experts are presented in Chapter IV.

F. Limitations

Alternative educational program methods and means will not have to be developed as a part of this study to resolve the needs and/or to achieve the objectives.

The evaluation of the planning system is of limited generalizability since it was field tested in a Florida
setting. To determine generalizability, it will be necessary to field test the planning system in various settings.

The testing of the planning system was limited to two applications of the many possible educational issues which could have been used. Thus the test was of limited rather than total scope.

In testing the planning system, the usefulness of the information produced is partially a function of the availability of data. This availability was restricted by Florida Statute, Florida Board of Education Rule, and Florida Department of Education Policy. In essence, these restrictions require that all data collection instruments administered to public school districts by Department of Education staff receive prior approval by the Department. Thus the practice of Department staff collecting data for dissertation purposes other than through their colleges of education has been almost eliminated.58

Since the planning system was tested by means of a panel of experts rather than by state policymakers (legislators and the governor), the study is limited by less than true reality testing.
FOOTNOTES - CHAPTER I


3Although, legally, the above decision of the U.S. Supreme Court was not a reversal to all of the decisions which follow, its principles were generally contrary to those found in these decisions:

Serrano v. Priest: 96 Cal Rptr 601 (August, 1971), 5 Cal. 3d 584


Hollins v. Shofstall: No. C-253 652, Superior Court of the State of Arizona, County of Maricopa (1972)


Callahan and Wilken, p. 1.


Boulding, pp. 14-16.

Callahan and Wilken, p. 9.


Boulding, pp. 20-22.


Ibid., p. 23.

Callahan and Wilken, p. 1.


Ibid.
"Although other possibilities for redistribution of funds exist, these two alternatives possess the greatest likelihood of occurrence.


Morphet, p. 71.

Ibid., pp. 72-73.

Ibid., pp. 77-79.

More detail on the environmental circumstances can be found in Appendix C entitled "Analysis of the Setting for the Planning Study."


Morphet, p. 13.

The accountability definition is modeled after those presented by the Cooperative Accountability Project in an introductory brochure.

For a discussion on the "Resolution of Needs," see the Needs Assessment Component of the Planning System in Chapter IV.


Modeled after a definition for evaluation found in Phi Delta Kappa National Study Committee on Evaluation, Educational Evaluation and Decision-making (Itasca, Ill.: Peacock, 1971), pp. 40-43.
37 Ibid., p. 42.

38 Ibid., p. 42-43.

39 Ibid., pp. 174-175.

40 Modeled after definitions given in discussions with Roald F. Campbell, Ralph B. Kimbrough, and Daniel L. Stufflebeam.

41 Phi Delta Kappa National Study Committee on Evaluation, p. 40, 43.

42 Modeled after a definition found in Gerald Nadler, Work Design: A Systems Concept (Homewood, IL: Irwin, 1970), Chapter 1.

43 Ibid.


45 Phi Delta Kappa National Study Committee on Evaluation, Chapter 7.

46 Ibid., Chapter 3.

47 Ibid., Chapter 6.

48 Ibid., pp. 71-78 and 262-263.


51 Desmond L. Cook, Educational Project Management (Columbus: Merrill, 1971), Chapters 5-10.

52 Kaufman, Chapters 1-7.


55 Kaufman and English, Chapter 3.

56 Nadler, Chapter 1.

57 Morphet, Chapters 2-5, 8.

58 Section 229. 555 (2)(a) 12, Florida Statutes.
CHAPTER II

REVIEW OF LITERATURE

Two fields of knowledge are integrated in this study; namely, educational planning and state educational finance. The purpose of this review of literature is to identify those works in each field which are related to the present study. Literature to be reviewed will provide an overview of the state-of-the-art, identify the relationship of this study to the extant literature, and delineate the contribution which the literature makes to the present study.

The first body of literature reviewed is from the field of educational planning which incorporates educational policy-formation, educational evaluation, and systems approaches to education. In selecting literature from educational policy-formation sources, a key criterion was that it be applicable to state level processes. Any educational evaluation sources selected are compatible both with a planning approach and with policy-formation. The literature on systems approaches to education involves planning concepts or relates to specific component(s) of the planning system as it was conceptualized.
The body of literature on state educational policy-formation is best represented by the works of Campbell and Mazzoni stemming from the Educational Governance Project.1 The purposes of this project were to expand the knowledge of the processes through which states determine policies for public schools and to develop alternative models of state educational governance for consideration by policymakers and others. Of the several reports produced by the project, the one most descriptive of policy determination is State Policy Making for the Public Schools: A Comparative Analysis.

In this report, Campbell and Mazzoni present the conceptual framework and research methodology for the study. They analyze the influence that state boards of education and chief state school officers have on policy-making. The roles played by governors and educational interest groups in state policy making, state educational policy systems, and the politics of school finance reform.

Campbell and Mazzoni developed a conceptual framework for the Educational Governance Project which identifies the functional stages of policy-formation; the participants, preferences, and products involved in policy-making; and the influentials and influences in the policy-making process.2 This conceptual framework can be supplemented by Campbell's earlier work on the policy-formation process which identifies basic forces, antecedent
movements, political action, and formal enactment as the four sequential phases of educational policy development. These studies contribute insight into the development of a systematic construct of state policy formation. In addition they form the basis for the methodology used for analyzing antecedent movements in the planning system.

The concepts of educational policy formation and educational evaluation are integrated by the Phi Delta Kappa National Study Committee on Evaluation. After evaluating traditional evaluation to identify its many problems, the Committee generated a new definition of educational evaluation: the process of delineating, obtaining, and providing useful information for judging decision alternatives. If one accepts the definition of policy making as the process of making decisions and establishing priorities which are of sufficient significance that they direct subsequent decisions, then it can be easily seen how the Committee's treatment of educational decision making can be broadened to incorporate educational policy making.

The Phi Delta Kappa National Study Committee on Evaluation developed an evaluation methodology for delineating, obtaining and providing information. Four types of evaluation were developed to correspond with four types of decisions settings. These evaluation types form the
Context, Input, Process, and Product (CIPP) Evaluation Model. The decision settings are planning, structuring, implementing, and recycling respectively. Because Context and Input evaluations are conducted in a contingency mode rather than a congruence mode, they are therefore, considered to be planning strategies.

This CIPP evaluation model and its associated decision settings provide a conceptual framework for the policy formation system. The evaluation methodology along with the Context and Input evaluations provide a conceptual framework for the planning system.

The body of literature on traditional planning at the state level in education might be characterized by the work of Morphet, Jesser, and Ludka on the Improving State Leadership in Education Project. The purpose of the project was to encourage and assist the citizens of each state to seek and to utilize the most appropriate and effective ways to improve all levels and aspects of education throughout the state. The project report analyzes forces and factors that affect planning and influence educational change. Alternative policies and procedures for planning and alternative change strategies at the state level are also analyzed.

This work contributed only in a minor way to the development of the planning system because of its traditional approach to planning. However, a review of such studies
reveals the paucity of planning system methodologies in state educational policy making. A systems view of educational planning is presented in Kaufman's Educational System Planning.\textsuperscript{10} Emphasis is placed on planning what to do rather than how to do it. Kaufman identifies needs assessment as the fundamental step in planning. He contends that a blueprint of action based on accurate measurements eliminates premature conclusions, choice of a solution before a problem has been properly identified, and jumping to conclusions that overlook important aspects deeply affecting the outcome.

The essence of this early work by Kaufman is repeated in Needs Assessment: Concept and Application, which he co-authored with English.\textsuperscript{11} In this recent work they identify different types of needs assessment models and procedures. Applications of the various approaches are then shown in education, government, business, industry, and the military.

Kaufman's treatment of systems planning and needs assessment contributes an essential part of the planning system developed in this study.

A work that offers a simple introductory translation of the essential components of general and information system theories, methodologies, and technologies is Granger's Educational Leadership: An Interdisciplinary Perspective.\textsuperscript{12} The philosophical and theoretical foundations
of general system, information, communications, and inquiry concepts and their historical and disciplinary antecedents are presented. However, the practical or managerial functions of system analysis, gaming and simulation, scheduling, programmed budgeting, and operations research are not overlooked. It is these aspects, primarily a Model Analysis and Redesign System, system planning, simulation, and operations management, which this study utilizes.

Nadler's work from industrial engineering presents an Ideal Design of Effective and Logical Systems (IDEALS). This concept is both a design strategy and organized program applicable to contemplated and present systems. General models of systems are presented for statistics, operations, control, decision-making, and data collection. Design philosophies and design strategies are discussed.

Of related significance to this study are the elements comprising a system: namely, function, inputs, outputs, sequence, environment, physical catalysts, and human agents. Also of related significance to this study are the design strategies of function determination, ideal systems development, information gathering, alternative suggestions, selection of a workable system, formulation of the details of the system, review of system design, testing of the system, installation of the system, and the establishment of performance measurements.
The second body of literature reviewed was taken from the many state educational finance studies conducted between 1965 and 1975. Studies reviewed are those which attained national prominence from the scholars of educational finance and have a significant likelihood for utilizing considerations of educational planning, educational evaluation, and systems approaches to education. In addition selected recent studies of Florida educational finance were included, since the planning system would be tested in that setting.


The California study had three major purposes. The initial purpose was to suggest a means to eliminate the discrimination which existed as a result of the school finance system which permits the quality of a child's education to depend upon the wealth of his school district. A second purpose was to suggest a means by which schools shall focus resources on the types of children who are in the greatest need and then to suggest specific types of educational services from which the children will benefit most. The third major purpose was to suggest a means by which the present system of raising revenues for schools in California will cease to place an unfair burden upon the low income homeowners and tenants.
The only identification of need was that of "needy students," that is, socioeconomically disadvantaged students. The alternative means presented were developed from conventional state school financial models: district power equalizing, full state assumption, and several categorical aid programs. Contrasts between and among these alternatives are identified along with the advantages of each. Effectiveness and efficiency estimates are also given of these alternative means. Economic and social feasibilities are assessed. A computer simulation illustrates the impact of the alternative programs on the several California school districts, but few or no relationships between elements of a planning system and alternative program outcomes are described.


The Delaware State Board of Education appointed a blue ribbon study committee to recommend fundamental changes in Delaware's educational finance system. A list of seventeen areas for study specified by the Delaware State Board of Education provided the structure for the study. Included in this list was an assessment of the current funding system with associated advantages and disadvantages and with comparisons from neighboring states. Methods were to be suggested for provisions of state support
for innovation, evaluation, and identification of instructional programs. The researchers were charged with the responsibility to identify and to justify a level of support commensurate with the relative financial ability of the state. The proposed finance system was to encourage efficient educational organizations, substantially equalize educational opportunity throughout the state, and be based upon a productive, diversified, and equitable tax system. It should include provisions for current expenditures, capital outlay, and debt service. It should recognize the inherent variations in per pupil program costs for different classes of students. It should recognize such factors as sparcity and density of population, cost of living, and other causes of differences in per pupil costs.

The Delaware study addressed educational need primarily as programmatic cost differentials, although some need was mentioned in an analysis of school district productivity. Data existed to identify the present status of variables in the areas of personnel, construction, transportation, food service, nonschool factors, and the programs for which cost differentials were to be proposed. However only the first three of these areas had any data to project a desirable future status. Alternative recommendations were not made, only singular ones. It appeared that these recommendations were assessed for their
validity; their congruence with known practices, valid research studies, and generally accepted theories and principles; their potential for cost-efficiency, cost-benefit, and/or cost-effectiveness as appropriate; and their educational, economic, social, and political feasibility. The appropriate recommendations were simulated on a computer.

Educational Finance and Management Institute (Dr. R.L. Johns, President). An Index of Extra Costs of Education Due to Sparsity of Population. Gainesville: The Institute, April, 1975.

The extra costs per student of educational programs due to the sparsity of pupil population were analyzed in this study. The Florida Education Finance Program has a stated legislative intent "to guarantee to each student in the Florida public school system the availability of programs and services appropriate to his educational needs which are substantially equal to those available to any similar student notwithstanding geographic differences and varying local economic factors." The key phrase in this intent is "notwithstanding geographic differences." It was this phrase which stimulated the desire for this study.

Educational need is derived from concerns. Need for any given school district is defined both as the amount of extra funds required because of sparsity and as the number of full-time equivalent students divided by the
number of approved high schools. Three alternative measures for educational sparsity are presented. These alternatives were assessed for their validity; for their congruence with known practices, valid research studies, and generally accepted theories and principles; and for economic and political feasibility. Sample funding calculations were made for all districts.


The Citizens' Committee on Education was charged with the responsibility of studying all levels of education and making recommendations to the people of Florida on ways to improve the schools. Such a study was deemed necessary by the newly elected pro-educational governor and legislature in the aftermath of a statewide teachers' strike which seriously divided the state. The scope of the study covered all of education including its governance structure--and the state's responsibility for it.

The scope of this Florida study included many educational issues. However, only four of thirteen finance study findings and six of thirteen finance study recommendations involved nonfinancial issues from the state educational system. The finance study dealt with issues such as the school centered organization of instruction,
compensatory education, education of migrant children, and statewide kindergarten. Concerns were identified from numerous survey and interview sources, but need was at best only implied in many passages. Many recommendations were stated so that some determination of implementation could be made, although most of these would be value laden and subjective.

Recommendations were assessed for their validity; for their congruence with known practices, valid research studies, and generally accepted theories and principles; and for economic, social, and political feasibility. A computer simulation was utilized to analyze funding alternatives.


The purpose of the study was to determine information on the cost factors used during the first year of the Florida Education Finance Program based upon the previous year's costs and practices. Programmatic cost factor information was compiled from a review of the literature and from research on measurement of educational needs and on the development of cost factors.

This study addressed need primarily as programmatic cost differentials, although several other general references to educational need were made. Differences
between program cost relationships based upon actual expenditures prior to implementation of the Florida Education Finance Program and the program cost factors used in the FEFP were one of the primary products from this study. It was not the purpose of this study to draw evaluative conclusions or to recommend alternative changes in program cost factors, but rather to produce only findings about program cost relationships.


The Florida Department of Education found it desirable to have its own study conducted while the Governor's Citizens' Committee on Education was conducting a comprehensive study of Florida educational finance. The Department's study included a brief description of the status of the existing funding program, an evaluation of it, and recommendations for improvement. Special attention was given to dimensions of educational need, program cost differentials, school district productivity, instructional personnel, school construction, pupil transportation, and food service.

This Florida study addressed educational need primarily as weighted pupil instructional units, although need was mentioned in analyses of school district productivity and school instructional personnel. Alternative recommen-
dations were not made, only singular ones. It appeared that these were assessed for their validity; their congruence with known practices, valid research studies, and generally accepted theories and principles; their potential for cost-efficiency, cost-benefit, and/or cost-effectiveness as appropriate; their educational, economic, social, and political feasibility. The appropriate recommendations were simulated on a computer.


Two major proposals were studied by the staff. The first was a state constitutional amendment requiring equality in school finance by greatly reducing and placing a limit on the amount of property tax permitted for school finance. The second mandated the legislature to provide equal and quality educational opportunity for all children.

This Michigan study investigated only financial variables. All needs identified were therefore financial. The two alternatives discussed were assessed for their congruence with known practices, valid research studies, and generally accepted theories and principles. Assessments for educational, economic, social, and political feasibilities were made, a computer simulation was conducted.

The major focus of this study was based on the interrelationship between finance and provisions for educational opportunity. Detailed analyses were made of educational opportunity in Michigan, the ways in which it is distributed, and the major resources which contribute to providing educational opportunity—notably teachers and school buildings. Also examined were the costs of educational services, the present revenue structure, nonpublic education, and the problems in organizing and planning educational programs.

This 1968 study addressed educational needs as solutions to problems in the areas of educational opportunity, educational systems, teachers, school buildings, nonpublic schools, and organization and planning. The status of educational opportunity and school population variables could be identified. Revenue and state aid alternatives were proposed. These alternatives were assessed for their validity; their congruence with known practices, valid research studies, and generally accepted theories and principles; and their educational, economic, and social feasibility.
The Commission was charged with studying the quality, cost, financing, governance, and organization of education. The study dealt with the entire spectrum of elementary and secondary education including federal aid, nonpublic aid, and racial and ethnic integration.

The study presented no consensus regarding goals or objectives of education. Need was addressed as a solution to a problem in the many facets of the study. Data was presented to identify the status of education, equality, low achieving students, and children with special needs. Full state funding and district power equalizing were the two alternatives presented. These alternatives were assessed for their validity, for their congruence with known practices, valid research studies, and generally accepted theories and principles. An analysis was made of the efficient allocation of educational investment.

Revenue projections were assessed for their economic feasibility. Equality and solutions to societal problems were assessed for their social feasibility. Local control and governance alternatives were assessed for their political feasibility. A computer simulation was utilized numerous times with many tables and diagrams to illustrate the results.
The summary which follows describes these educational finance studies as a group with respect to the methods of educational planning, educational evaluation, and systems approaches to education used in the planning system developed herein. Following each paragraph of the summary is/are the number(s) of the question(s) in Appendix A from which that paragraph is summarized.

The studies which involved relevant variables from the state educational system identified their present status. For some of these variables the values and/or expectations held for them were delineated. Any discrepancies existing between the present status of and the values and/or the expectations held for these variables were at best only implied ones. Thus educational need as used by methods of planning and evaluation was not used in these studies. Need was frequently associated with the cost of educating a student in a given program compared with the cost for some basic program. Need was too frequently expressed as a solution to a problem such as the need for more money, the need for tax reform, or the need for a different funding formula. (#1)

The degree to which the studies involved variables of the state educational system appeared to vary directly with the degree of breadth and depth accorded the study by its sponsors and the level of funding available. Studies associated with state commissions and committees appointed
by policymakers usually had ample funding and probed many program areas in addition to financial issues. Some studies involved educational system variables to the extent that regression analyses were conducted. Some studies investigated only variables of the finance system. (#2)

Although needs were expressed in varying ways in studies, most of the needs involved only financially related variables. Whether an objective determination could have been made of need resolution was debatable in most studies. The few studies which targeted on changes in funding cost factors possessed the greatest potential for objective determination of need resolution. (#3)

Most of the studies presented alternative educational finance methods and means while a few made only singular recommendations. However alternative educational finance methods and means were proposed for resolving the same need in only a few cases. (#4)

The studies usually assessed the alternative educational finance methods and means for their validity and for their congruence with known practices, valid research studies, and generally accepted theories and principles. Only some studies assessed the alternative educational finance methods and means for their potential efficiency and effectiveness or for their educational, economic, social, and political feasibility. (#5-#8).
Computer simulations were usually used when appropriate to determine the impact of the various alternative educational finance methods and means on the state's school districts. Pilot-tests or field-tests were seldom used. (#9)

The evaluations made by almost all studies consisted of a product evaluation in which a draft of the report was submitted to the study sponsor for review prior to final publication. (#10)
1Roald F. Campbell and Tim L. Mazzoni, Editors, State Policy Making for the Public Schools: A Comparative Analysis (Columbus: Ohio State University Educational Governance Project, 1974); and Roald F. Campbell and Tim L. Mazzoni, State Governance Models for the Public Schools (Columbus: Ohio State University Educational Governance Project, 1974).


5Ibid., p. 40.

6Policy-making definition is modeled after definitions given in discussions with Roald F. Campbell, Ralph B. Kimbrough, and Daniel L. Stufflebeam.

7Phi Delta Kappa National Study Committee on Evaluation, Chapter 7.

8Ibid., pp. 79-84.


CHAPTER III

POLICY FORMATION SYSTEM

The primary purposes of the present study as stated in Chapter I are to develop and to test a planning system for producing useful information for policymakers to judge alternatives about a state educational finance system. Because this planning system must function in a political environment of policy formation, a system depicting this environment is also developed as a context for the study. In this chapter the policy formation system is presented. The conceptualization of this system is presented in Figures 1 and 2 on the succeeding pages and described throughout the remainder of the chapter.

In Chapter I the logic flow used in developing both the planning system and its environmental policy formation system is described. This logic flow has been categorized as the "design process mode" by Kaufman.¹

A second mode of systems approach, identified as "descriptive" by Kaufman, focuses on describing either how a system actually functions or how it should function. This mode portrays the functions to be performed, the order in which they are to be performed, and their interrelationships. The descriptive mode permits a total system
FIGURE 1
A FLOW REPRESENTATION OF THE POLICY FORMATION SYSTEM
The flow representation below shows the relationships among the six types of decisions in a policy formation system. The planning system, which might be referred to by educational administrators as alternative formulation, produces information for planning decisions and structuring decisions. The policy-making system, which might also be referred to as the policy formalization phase, produces information for policy and recycling decisions. The evaluation system, which might also be referred to as the accountability phase, produces information for implementing and attaining decisions. Those decisions which are involved primarily with the state educational system are called ends. The planning decisions deal with intended ends or objectives, while the attaining decisions deal with actual ends or accomplishments. Those decisions which are involved primarily with the state educational finance system are called means. The structuring decisions deal with intended means or objectives, while the implementing decisions deal with actual means or accomplishments. The planning, policy-making, and evaluation systems might also be referred to respectively as inputs, processes, and outputs.

**PLAN N IN G  DECISIONS**
To allow policymakers to establish educational needs and/or objectives based on educational goals and/or concerns.

**STRUCTURING DECISIONS**
To determine the existence of alternative educational finance methods and means which might promote the resolution of the educational needs and/or the achievement of the educational objectives, with one alternative being the existing educational finance system and to determine the likelihood that these alternative educational finance methods and means will promote the resolution of the educational needs and/or the achievement of the educational objectives.

**RECYC LIN G  DECISIONS**
To determine the revisions, refinements, and extensions which might be made in the educational finance methods and means as well as in the educational needs and/or objectives.

**POLICY DECISIONS**
To make decisions about alternative educational finance methods and means for the purpose of establishing priorities which are of sufficient significance that they direct subsequent decisions.

**ATTAIN IN G  DECISIONS**
To determine the extent to which the educational needs have been resolved and/or the educational objectives have been achieved for the resources being invested.

**IMPLEMENTING DECISIONS**
To determine the extent to which alternative educational finance methods and means and related policies and regulation have been implemented.

**ENDS**
**MEANS**

**FIGURE 2**
A FLOW REPRESENTATION OF THE POLICY FORMATION SYSTEM
to be seen at one time. The strength of this mode is in the graphic presentation. This mode is the one which is used to portray the policy formation system, and the graphic presentations of it appear near the end of this chapter.2

More than a dozen principal sources for conceptual alternatives in the development of the planning system and its environmental policy formation system, were identified in Chapter I. Of these, the ones which were principally used in developing the policy formation system are:


These conceptualizations are selected for several reasons. The first represents the contemporary thinking of seven recognized authorities on educational evaluation, planning, and decision-making. It utilizes a systems approach. The last two conceptualizations represent early as well as contemporary thinking on educational planning and policy formation. They also utilize a systems approach. The greatest potential for integration from among all of the principal sources listed in Chapter I existed with these three.

Another reason for the selection of these three conceptualizations was that the principal author of the first, Dr. Daniel Stufflebeam, and the principal author of the last two, Dr. Roald Campbell, were eminent scholars
in their respective fields and worked together. However the policy formation system presented in this chapter represents an original merger of their ideas.

The Antecedent Movements are derived from the Policy Formation Process. The Alternative Formulation and Policy Formalization concepts stem from the Functional Stages of Policymaking. The planning, structuring, implementing, and attaining decisions come respectively from the Context, Input, Process, and Product Methodologies for evaluation. The Planning and Evaluation Systems were also derived from the Context, Input, Process, and Product Evaluation Model. All other elements of the policy formation system, as well as, the integration of all of the above, were provided by the writer.

A. Antecedent Movements

In Chapter I antecedent movements are identified which have created the need for a state educational finance study. These antecedent movements cover a broad continuum beginning with the promotion of interests, continuing through political demanding, and leading to political action. These can be official or unofficial, direct or indirect, and advanced by individuals or groups. The movements are usually national in scope although often advanced by state and local actors and groups.
Six groups of actors can be identified in the arena of the politics of state educational finance. First come the partisan, political policymakers and their staffs at the state level; for example, the governor, his aides, and cabinet along with the legislators, their aides, and staff. Of special importance at the state level are the governor's education aide, budget or finance director, educational finance specialist, and the legislative education and appropriations committees and their staffs. Nationally this group includes the President, his cabinet, the many executive departments and agencies involved with education. These agencies include the Secretary of Health, Education, and Welfare; the Assistant Secretary for Education; the Commissioner of Education along with his deputies, associates, and assistants; and the National Institute for Education. Also in this group are the Congress, its education and appropriations committees, especially the Senate Select Committee on Equal Educational Opportunity, and the congressional staff. Two national associations are included in this group: the Education Finance Center of the Education Commission of the States and the Legislators' Education Action Project of the National Conference of State Legislatures. Many commissions and committees could also be considered a part of this group;
for example the Advisory Commission on Intergovernmental Relations, the President's Commission on School Finance, and all of the state educational finance study commissions and committees appointed by governors and legislators.

A second group of actors is the nonpartisan policy-makers and the policy-interpreters at the state level; for example, the state Supreme Court and its hierarchy of lower courts along with the state boards of education, the chief state school officers, and the departments of education in most states. Nationally this group includes the U.S. Supreme Court and the federal court system along with many of the staff of the U.S. Office of Education. Two national associations belong to this group: The National Association of State Boards of Education and the Council of Chief State School Officers. Some state educational finance study commissions and committees could be considered a part of this group if they were appointed by members of this nonpartisan policy-making group.

Among the groups of actors are the scholars of educational finance who fashion plans for educational support and form the intellectual core of these six groups of actors. In each state at least one professor of educational administration who specializes in educational finance can probably be identified. Nationally the scholars of educational finance are led by the staffs of the National Educational Finance Project, the Institute for Educational
Finance, the Center for the Study of Educational Finance, the Syracuse University Research Corporation Policy Institute, the National Committee for Support of the Public Schools, the Ford Foundation, the Spencer Foundation, the Urban Institute, the National Organization on Legal Problems in Education, the School Finance Project of the Lawyers' Committee for Civil Rights Under Law, the U.S. Office of Education Division of State Agency Cooperation Task Force on School Finance, the National Education Association Research Division, and others.

The educational professionals such as the National Education Association and the American Federation of Teachers along with their state and local affiliates constitute a fourth group. Many special interest groups exist, such as the American Association of School Administration and its state affiliates along with the Association of Classroom Teachers and its state and local affiliates.

A fifth group is composed of the educational lay-groups such as the National School Boards Association and its state affiliates, the National Congress of Parents and Teachers and its state and local affiliates, student groups, and others.

Sixth among the actor groups are the noneducational lay-groups at national, state, and local levels. These include the educational finance reform project of The League of Women Voters of the United States, the American
Association of University Women, the Public Affairs Council, the National Urban Coalition, the National Urban League, the American Civil Liberties Union, the Tax Reform Research Group, taxpayer's associations, chambers of commerce, merchants' and manufacturers' associations, testing companies, publishers, and other related actors.

It is obvious that some participants can assume roles that will place them appropriately in more than one group, either because of the varying nature of their activities or because of the varying organizational structures among the fifty states. The distinctions among the groups have been made principally for the purpose of organizing the actors in some relevant and meaningful way.

The combined, complex, and mutual interactions of the actors in these groups create the arena in which the antecedent movements of interest promotion, political demanding, and political action can be found. Some of the more significant exemplifications of these antecedent movements are summarized in the following paragraphs.

During the decade of the sixties the militant, professional educator came into being and teacher negotiations began. Specifically, in 1961 collective bargaining for teachers began in Utah for the N.E.A. and in New York City for the A.F.T. At first salaries were the principal issue, later fringe benefits were included, and now participation in policy formation has been added. Each of
these issues has created a demand for increased funding; but the first one, salaries, has had the greatest impact on educational funding.

The emergence of interlevel conflicts for funds became more prominent as funds for education became more scarce. The principal contestants were public elementary and secondary education and public higher education, while vocational-technical and other post-high school institutions played lesser roles.\(^7\)

Early in the sixties a school levy or bond issue was quite certain to gain passage at the polls—educational issues were almost "sacred cows." Toward the end of that decade in some states, fewer than half of the school issues on the ballot passed; even repeated failures of the same issue were not uncommon. The taxpayers were revolting. As a consequence a surprising number of school systems were forced into closing their doors for varying periods of time to avoid collapse.

Almost in direct proportion to the occurrence of the taxpayers' revolt came the demands for accountability, demands for educators to explain the results which they were achieving for the resources being invested. First, at the local level and later at the state level, the evidence of the taxpayers' desires became more obvious. The list of states with enacted accountability legislation grows longer each year, with most of those having been added to
the list in the decade of the seventies. Since 1972, the number of students in public elementary and secondary schools has declined by about 2 million while the amount of money spent on public education has jumped more than 50%. During this same period, the median scores on scholastic aptitude tests have declined, a decline that even goes back a decade earlier to its beginning. The public sees test scores declining, does not feel children are working hard at school, and is alarmed by popular research showing that increased educational funding will do little to improve achievement.  

Educational policy-making activities at the state level has been becoming more intense in recent years. The increased importance given to membership on legislative education committees; the frequency with which education enters into major pieces of legislation; the numbers, importance, and frequency of special commissions and committees appointed by governors, legislators, and state boards of education to study educational finance issues; school district consolidation; urbanization; and teacher militancy are all causing this shift in the policy-making base from local to state levels.  

The increase in attention given to state educational finance by the previously mentioned groups of actors serves to exemplify the antecedent movements: the growth in the number of publications and articles on the topic; the
increased occurrence of high level conferences devoted to educational finance and of scheduled educational finance presentations at many other meetings; the development of special commissions, committees, sub-committees, and study groups with missions involving educational finance; the many legislative proposals aimed at changing the existing methods of allocating educational funds; and the many court cases involving fundamental principles of educational finance.10

B. Alternative Formulation
(Planning System)

As stated in Chapter I a state's policymakers may find themselves confronted with a problem as a consequence of antecedent movements. The most viable and immediate solution to this problem may be a planning study. Such a study could be implemented by utilizing the planning system presented in Chapter IV. This planning system is one of three systems belonging to the environmental policy formation system. The other two systems are described in the remainder of this chapter.

C. Policy Formalization (Policy-making System)

The end product of such a planning system will be the development of educational finance alternatives which have been formulated, analyzed, assessed, and tested in order that the policymakers can enact a policy from a limited agenda of well-documented options. The policymaking system in this context can be defined as: the collection of
state officials with legal or delegated authority and responsibility who react independently and in interaction to make decisions for the purpose of establishing priorities which are of sufficient significance that they direct subsequent decisions.\textsuperscript{11}

The policy-making system has two basic components: one is associated with initial policy decisions, the other with recycling policy decisions. Traditionally, policy formation has been just these two types of decisions. This process has been very iterative and incremental in nature. Make a policy. Consider revisions, refinements, and extensions. Remake the policy. Consider revisions, refinements and extensions. Remake the policy.

This type of iterative, incremental policy formation has created the many "band-aided" state educational finance systems of antiquated methods and questionable constitutionality in existence today, "the dense jungle of legislation, formulas, and procedures."\textsuperscript{12} This type of policy formation is unable to utilize effectively any of the contemporary planning and evaluation approaches. As pressures from antecedent movements began to increase, changes in traditional policy formation have become necessary. Planning studies for alternative formulation and evaluation studies for accountability have now become widespread.

No attempt has been made here to develop the policy-making system as has been made with the planning
system. However, a general but brief review of highlights of the activities of this policy-making system will follow. History discloses that educators have kept education disjoint from politics for many years. Many educators debated the wisdom of such action in the past, but it is nonetheless fact. One notable reason is that educators attempted to protect public education from the naked ruthlessness and corruption of much local and state politics in past generations. Another logical reason is that the American culture sees "politics" and "self-seeking" as frequent synonyms, while "self-seeking" and "high principle" are frequent antonyms. Since educators have been attempting to "professionalize" and "professionals" are believed to be of "high principle", educators have therefore desired to disassociate from politics.\textsuperscript{13}

Education has become the largest single expenditure item for most state general fund budgets. In terms of dollars spent, no aspect of state support to local school districts is more significant than general state aid or foundation programs as they are generally known. A strong commitment to the position that education is essentially a public responsibility, coupled with the fact that education is a costly and complicated operation, has placed considerable burden upon state policymakers who must decide how to allocate scarce resources. In contrast to almost all other areas of public policy, no open anti-school lobby exists. A major problem is the existence of many other public interests, not the least of which is lower
taxes, that compete politically for public funds. Education cannot successfully compete with the many other public interests for public funds if educational leaders, both lay and professional, stay removed from politics.  

If educational programs are to resolve their needs and/or achieve their objectives, public policymakers must understand the needs. Although some educators find it hard to believe, need alone is not always enough justification in the political forum. The fulfillment of these objectives is dependent upon educational leaders, both lay and professional, who are able and willing to use political influence to transform need into public policy. The goodness of educational finance reform does not by itself usually generate the support necessary to achieve enactment.

The public policymakers who most directly determine the future of education are in the state capitols. The power of a state legislature over public education is plenary, except as limited by federal or state constitutions or as limited by court decisions interpreting these constitutions. Some experienced leaders in state politics contend that the action of the governor constitutes at least half the control over legislation. Others have concluded that in recent educational finance reform efforts, the legislature has been pre-eminent. The state boards of education and their professional staffs have been created
by state legislatures; even a local school district, its board members, administrators, teachers, and others are legally agents of the state legislature. But the amount that a state spends on education is ultimately determined by the political decisions taken at the level of the governor and the state legislature.16

Thus it is imperative that educational leaders, both lay and professional, be able to communicate effectively with state legislators and relevant members of the administration about educational needs. State legislators can be responsive to and fully understand educational problems only if educational leaders keep them informed, preferably by means of continuous patterns of communication.17

If state support to education is to be maintained or to expand, it will be because politically active educators have the knowledge and the skill to marshall effective political power. The future of public education will not be determined by need alone. It will be determined by those who can translate need into policy. Since the quality of society rests in large measure upon the quality of public education, a widespread recognition that educators must be not only aware of politics, but influential in politics, may be the key to survival as a free and civilized nation. Many of the best laid plans for a state educational program are dependent upon how much power
educators possess in the political system and how expertly this power is used to attain their goals.\textsuperscript{18}

It is considered important by some that a state's power system be conceptualized. State power structures can be identified and associated with general typologies. However, the shapes and the dynamics of these structures differ among the states, and the political strategies appropriate to pass educational legislation vary from state to state.\textsuperscript{19}

The level of state funding for education may be in direct proportion to the quality and effectiveness of the top educational leadership group. If the top leaders fail to work together in such a way as to envision a defensible general policy for state improvement, the entire state, including its educational program, is likely to remain at a standstill. Unfortunately, empirical data supports the conclusion that numerous educational leaders and other professionals occupy a rather low position in the structure of power. Conant offers the solution that what is needed are strong state boards of education, a first-class chief state school officer, a well-organized state staff, good support from the legislature, and an integration of the views of the state teachers' association, the professors of education, the academic professors, and the laymen. Campbell, Sroufe, and Layton offer many specific recommendations for strengthening state departments of education.\textsuperscript{20}
Unfortunately, in too many states the visibility of state boards of education and their departments as bodies politic is generally low. For the most part they act as sounding boards for educational ideas and programs rather than as active participants in the political processes. Educators are continuously reacting on the defensive and are not initiating enough offensive action. Even when on the defensive, a number of state departments have had problems coping with significant proposals for educational finance reform. Although many members of state boards want to expand their board's authority in the area of setting standards for schools, many are willing neither to develop legislation nor to depict the educational needs of the state to members of their legislature. State boards and departments of education should examine their present relationships with their respective legislators and seek to become more effective as a voice in the educational policy-making process. They should invest resources in developing political strategies and in establishing a formalized strategy team to operate on a continuous basis.21

Teachers have been sorely in need of further professionalization and the development of political solidarity. Perhaps the lack of solidarity and political know-how among teachers has made them innocent dupes of informal power structures. As one governor said to his state superintendent who was outlining educational budget
needs:

There is no need to continue telling me what teachers demand because teachers do not demand anything. What a governor recommends for education is what he feels deep in his heart is good for public education, not because of what teachers may demand. Teachers will not stick together. It is easy to get them talking against each other.22

Frequently, educators themselves have made their own programs easy to oppose. Far and away one of the most common handicaps to increasing school subsidies in a state has been the inability of educators to work and speak as one. There exist literally dozens of groups of professional educators, some of whom may essentially have the same goal, working for their own pet concerns. Perhaps for categorical aid programs this is understandable, but general aid and state support imply that educators can and should stand or fall together in legislative campaigns. But still, the groups divide to stir up a vast buzzing in the lawmakers' ears. The wily lawmakers find it easy to ignore educators who are disunited or to play one educational group against another. If educators could just decide what it is they want, in many cases they could achieve it politically. Studies have provided clear evidence that when educators and their friends reach consensus on goals and stand united for action in state decision-making situations, they are successful in achieving significant results.23
With increasingly effective organization at the state level, teachers are becoming an important influence on the shaping of educational policy in most state legislatures. Teacher organization strength is known and respected in most state capitals, as gauged by size of the constituency, economic resources for political activity (including campaign contributions), research staff and quality of research, the yearly legislative program, and vigorous lobbying efforts backed by a good public relations program.24

School boards' associations form the most organized of the educational lay-groups. These associations often see themselves as the only major education interest group that is not on the public payroll and so have no immediate and direct interest in the outcome of public schools' legislation. Their strength springs from the elected status of their memberships, which politicians see as not only making them representative of the true desires of the electorate back home, but also coming from a political-social position similar to their own.25

The preceding discussion of the activities in the policy-making system highlighted their association with initial policy decisions and recycling policy decisions. These decisions result in the formal enactment of policy.
D. Accountability (Evaluation System)

At the conclusion of the policy-making system's activities, alternative educational finance methods and means will have been enacted. Both the implementation of these alternative educational finance methods and means and the effects which they have on the state educational system should be evaluated.

In the past, there have been three generally accepted definitions of educational evaluation which have gained general acceptance. It has been equated with (1) measurement, (2) the determination of the congruence between performance and objectives, and (3) professional judgment. All of these definitions have the major fault of lacking a methodology for relating evaluation to decision-making and policy-making in general and to different types of decisions and policies in particular.\(^{26}\)

In the context of this study the evaluation system can be defined as a system for producing useful information for policymakers to judge alternatives about a state educational finance system. The reader may observe that the definitions for both the planning system and the evaluation system are identical. The essential difference then between these two systems is that the planning system produces useful information in the contingency mode while the evaluation system does so in the congruence mode.

First the policymakers will want useful information for the purpose of determining the extent to which the
alternative educational finance methods and means and related policies and regulations have been implemented. Before making a determination regarding the resolution of needs and/or the attainment of the objectives, it would be important to know the degree to which one or more of the alternative educational finance methods and means were actually implemented.

Second, the policymakers will want useful information for the purpose of determining the extent to which the educational needs have been resolved and/or the educational objectives have been achieved for the resources being invested. The needs and/or objectives and their accompanying criteria will have been established by means of the planning system. Those that pertain primarily to the state educational finance system can be evaluated relatively soon after implementation. Those that pertain primarily to the larger state educational system may not be amenable to being evaluated as quickly. However, in all likelihood, intermediate level attainments will occur which will be useful in making an ultimate determination regarding the resolution of the needs or the attainment of these objectives.

In an accountability setting, demands are made upon educators to explain the results which they are achieving for the resources being invested. Too frequently needs and/or objectives have never been stated definitively
enough by educators to permit an easy explanation of the
results which were achieved as being those that should have
been achieved. In other words, it would be much easier for
educators to determine when they got somewhere, if they had
known where it was they were going when they started. In
this planning system, the components involving objectives
have been made optional. This action is the result of
recommendations from educators who have reviewed parts of
this planning system and stated that many policymakers are
not yet ready to deal with objectives at the state level.

E. Policy Formalization
(Policy-Making System)

At the conclusion of the evaluation, useful informa-
tion will have been produced about the implementation of
alternative educational finance methods and means in the
state educational finance system and the effects these had
on the state educational system. The policymakers will
in all probability now wish to consider revisions, refine-
ments, and extensions not only in the educational finance
system methods and means, but also in the educational
system needs and/or objectives. The policy-making system
is now in the second of its two occurrences.

The degree to which a planning system need be
implemented is based upon the same considerations stated
previously. Perhaps recycling decisions can be input
directly into the policy-making system as has been tradi-
tionally done. Perhaps if not here, into only that part
of the planning system which pertains to the decisions necessary to structure a state educational finance system. Thus it is not necessary to recycle through planning and structuring decisions to revise, refine or extend policies.

F. Summary

The policy formation system is now complete. It begins with the antecedent movements of basic forces, interest promotion, political demanding, and political action. These movements will in all probability lead to the initiation of a planning study of some magnitude for the purpose of producing useful information for policymakers to judge alternatives about a state educational finance system. The alternatives formulated from the planning study will lead to the formalization of policies. The implementation of these policies will require evaluation because of demands for accountability. With the information produced by the evaluation, recycling decisions can be made about revisions, refinements, and extensions in the state educational finance system.

This flow of policy formation consists of a reducing process: that is, possibilities for consideration are continually being aggregated or eliminated. Continuous feedback among the components exists, with the principal flow of feedback going from the recycling decisions back to the planning decisions. Figure 1 is a conceptualization of this flow.27 Within this principal flow of feedback,
six types of decisions exist. Two each belong to alternative formulation, policy formalization, and accountability. Three each belong to the means and the ends. Figure 2 is an illustration of this flow.
FOOTNOTES - CHAPTER III


2 Ibid.


6 The formulation of these six groups of actors is a refinement, a revision, and an extension of four groups of actors formulated by Stephan K. Bailey et al., Schoolmen and Politics: A Study of State Aid to Education in the Northeast (Syracuse: Syracuse University Press, 1962), p. 32.


This definition is a combination of definitions for policy making and system found in Chapter I.


Campbell, Cunningham, McPhee, and Nystrand, The Organization and Control of American Schools, pp. 365 and 526; and Joel Berke, "Politics of Resource Allocation"...


Kimbrough, Political Power..., p. 273.


Ibid., pp. 4-11.

Roald F. Campbell, Gerald E. Sroufe, and Donald H. Layton, Strengthening State Departments of Education (Chicago: Midwest Administration Center, 1967); Conant, p. 31; and Kimbrough, Political Power..., pp. 21, 262.

22 Kimbrough, Political Power..., pp. 270, 280, and 281.


25 Bailey et al., pp. 34, 35; and Masters, Salisbury, and Eliot, pp. 196-198.

26 Phi Delta Kappa National Study Committee on Evaluation, pp. 9-16.

27 This flow representation is a revision and an extension of a conceptual base found in Campbell and Mazzoni, Investigating State Education Policy Systems..., pp. 9-17.

28 A revision and an extension of a conceptual base found in Phi Delta Kappa National Study Committee on Evaluation, p. 80.
CHAPTER IV

PLANNING SYSTEM

The primary purposes of the present study as stated in Chapter I are to develop and to test a planning system for producing useful information for policymakers to judge alternatives about a state educational finance system. In this chapter the relationship of the planning system to its environmental policy formation system is delineated first. Then the planning system is presented as it was developed for use in a Florida setting. Included in this presentation are changes suggested by those members of the panel of experts listed in Appendix G who were asked to critique the planning system. Finally two tests of the planning system using data from a Florida setting are presented. These tests of the planning system are to determine if it can produce "useful information for policymakers to judge alternatives about a state educational finance system."

In the sequence of planning system components designed to produce useful information for planning decisions, the desired outputs are needs and/or objectives for the state educational system. Hopefully the sequence
of components designed to produce useful information for structuring decisions will produce the educational finance methods and means which will lead to the resolution of the needs and/or the achievement of these objectives. The planning decisions along with the needs and/or the objectives belong to the state educational system which forms the environment of the state educational finance system being planned. The structuring decisions and the educational finance methods and means belong to the state educational finance system.

Admittedly the state of the art in educational finance is such that it would be difficult to deal with state educational system objectives which are not amenable to estimate by finance methods and means. For example, the objective to increase by a certain amount as determined by specified methods and means in a certain number of years the proportion of school-age children who possess specified reading skills might be desirable but realistically unattainable using state educational finance methods and means alone. A set of program structuring decisions would then be required to derive program methods and means prior to the derivation of finance methods and means resulting from a set of finance structuring decisions.

Although the planning system presented here could be expanded to handle program structuring decisions, it is
the intent of this planning system that such decisions will be made external to it. In other words, this planning system has been designed to handle instrumental objectives which are amenable to being estimated by finance methods and means alone.

As educators become more able to deal with consequential objectives pertaining to the state educational system, the sequence of components in the planning system could be altered to permit the derivation of the program methods and means necessary to provide for the transition between consequential needs and/or objectives and finance structuring decisions. This new sequence of components could be similar in function to those presented here for producing useful information about finance methods and means.

The sequence of components designed to produce information for the planning decisions together with each component's purpose is summarized as follows:

1. Goal Identification (optional)—to provide general direction for the state educational system,
2. Concerns Analysis—to analyze why the state educational system should go in that direction,
3. Status Analysis—to analyze where the state educational system is now,
4. Antecedent Analysis—to analyze where the state educational system has been,
5. Needs Assessment—to assess where the state educational system should go,
6. Long-range Objectives Determination (optional)—to specify what the state educational system should achieve ultimately, and

7. Objectives Determination (optional)—to specify what the state educational system should achieve in the near future.

The sequence of components designed to produce information for the structuring decisions together with each component's purpose is summarized as follows:

8. Methods/Means Analysis—to produce alternative state educational finance methods and means,

9. Initial Methods/Means Assessment—to assess the advantages and disadvantages of the alternative state educational finance methods and means,

10. Priority Alternative Methods/Means Selection—to select the alternative state educational finance methods and means which should receive a refined methods/means assessment,

11. Refined Methods/Means Assessment—to assess the advantages and disadvantages of the priority alternative state educational finance methods and means,

12. Methods/Means Selection—to select the alternative state educational finance methods and means which possess the greatest likelihood of resolving the need(s) and/or achieving the objective(s), and

13. Field-test—to find and correct inadequacies, incompletenesses, and deficiencies in the proposed set of state educational finance methods and means.

In Appendix B lists of questions corresponding to each planning system component appear. These questions may be helpful during the planning study.
A. GOAL IDENTIFICATION (OPTIONAL)

What direction should the state educational system take?

A goal is a general, philosophical statement describing at least one idealistic outcome. It provides direction for the state educational system and is characterized by relative timelessness and unmeasurability. Goals are measurable only by nominal or ordinal scales of measurement, if at all.

Goal statements are one form of a first, broad, general attempt at deriving some objectives and criteria for the state educational system. The needs and objectives for the state educational system will be derived through a sequence of general-to-specific components.

A potentially helpful supplement to broad general goal statements would be concerns' statements. If the identification of goal statements will require many person-hours of consensus building, then perhaps the Goal Identification component should be merged with Concerns Analysis. Needless to say, if goals presently exist which are relevant to the scope of the planning study mission, they should be used and supplemented by the concerns analysis. However, if it becomes evident that existing goals are inconsistent with the results of the concerns analysis, then perhaps more emphasis should be placed on the concerns'
statements. The mere stating of goals neither endows them with validity nor mandates a change in the planning study mission.

If the planning study mission is broad in scope, then some thought should be given to a taxonomy into which the goals will be placed. The most important criterion in selecting a taxonomy is that it should serve the planning study mission.

There should be an awareness of existing conditions in the state educational finance system so that the taxonomy selected does not impose unnecessary constraints on the planning study. For example, the existing finance program may group students as pre-kindergarten, kindergarten through grade 6, grades 7 through 9, and grades 10 through 12. The goal taxonomy should not follow this classification system just for the reason that it exists in the present finance program. Perhaps a different taxonomy of grade groups would better serve the planning study mission and avoid restricting it unnecessarily.

A number of grade level organization taxonomies are possible alternatives for consideration. These should be supplemented for students with special needs, such as the culturally disadvantaged, the exceptional or handicapped, the vocational, and other students.

The Cardinal Principles of Education could serve as an initial framework for a goal taxonomy. These should be
supplemented by one of a number of alternative program structures.

Goals could also be divided into those which are student oriented and those which are institution oriented. The former group would become the performance or product goals while the latter would become the process or program goals.

One last consideration for a taxonomy of goals might be to group them according to (1) those relating to the scope of present educational endeavors and the determination of new needs viewed feasible within the existing educational decision; (2) those primarily concerned with an assessment of present effort and the contemplation or projection of new, more effective approaches; (3) those which may possibly seriously challenge present assumptions regarding program, organization, contemporary outputs and, indeed, the efficacy—both present and future—of endeavors based on prior assumptions; and (4) those which are concerned primarily with helping the state to establish basic priorities in its efforts to improve the educational system.3

If the planning study mission is narrow in scope, then a goal taxonomy would probably not be necessary. In this situation simple goal statements would probably be adequate.
The goals for the educational system should be derived by the state's policymakers. In the taxonomy of actors presented in the introduction, these would be the partisan and nonpartisan policymakers identified in the first and second groups of actors. It may well happen that some members of these groups may waive their policy-making rights to another group; for example, the legislature and governor may enact a law directing the state department of education to draft goals for the state, or the governor may appoint a commission to do the same. In these situations, of course, the policymakers with delegated authority and responsibility have the right to draft goals; however only in these situations does any group other than the official policymakers of the state have the legal right to draft goals for the state.

Beginning with Goal Identification and going through Needs Assessment, a format has been proposed to use in recording the results of each operation. The Needs Assessment Table exemplifying this format is presented in the Needs Assessment component.

The three components which relate closely to Goal Identification and occur later in this component of the evaluation are Needs Assessment, Long-range Objectives Determination, and Objectives Determination. These four components compose a general-to-specific sequence to yield objectives for the state educational system which should
become more specific, operational, realistic, time-bound, and measurable as the planners move from one component to the next. Because some policymakers may be apprehensive about their inability to achieve the objectives they derive with the educational finance methods and means they generate, objectives will be optional in the planning system. However because planners can write statements of need with varying degrees of specificity, little of the deterministic nature which can be created with objectives need be sacrificed.
<table>
<thead>
<tr>
<th>Goals</th>
<th>Needs</th>
<th>Long-range Objectives</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>general</td>
<td>general</td>
<td>general</td>
<td>specific</td>
</tr>
<tr>
<td>philosophical</td>
<td>philosophical</td>
<td>operational</td>
<td>operational</td>
</tr>
<tr>
<td>idealistic</td>
<td>realistic</td>
<td>realistic</td>
<td>realistic</td>
</tr>
<tr>
<td>timeless</td>
<td>timeless</td>
<td>range of time-boundedness</td>
<td>time-bounded</td>
</tr>
<tr>
<td>measurable</td>
<td>measurable</td>
<td>measurable</td>
<td>measurable</td>
</tr>
<tr>
<td>(nominal or ordinal)</td>
<td>(interval or ratio)</td>
<td>(interval or ratio)</td>
<td>(interval or ratio)</td>
</tr>
<tr>
<td>used to derive needs</td>
<td>used to derive long-range objectives (note: could be revised to derive alternative state educational methods and means)</td>
<td>used to derive objectives</td>
<td>used to derive alternative state educational finance methods and means</td>
</tr>
</tbody>
</table>

Source: Derived from text.
B. CONCERNS ANALYSIS

Why should the state educational system go in the direction determined by the goals?

A concerns analysis is the process of identifying and analyzing the educational, economic, political, and social concerns, values, and expectations which are relevant to the planning study mission and the goals. Concerns are unrefined, unevaluated expressions that emanate from individuals or groups in their attempts to identify needs. Values are expressions of belief or conviction about what should exist rather than what does. If these expressions about what should exist rather than what does are more quantitative in nature, they are then called expectations. Because a concerns analysis will usually generate both concerns statements and value or expectation statements, they are both included in this component.

The identification of concerns, values, and expectations can be completed using surveys of opinions and/or concerns conferences. Where surveys systematically solicit responses to a given set of questions on an individual basis in a closed-ended means, concerns conferences do not confine responses to a given set of questions. They are open-ended and solicit concerns from group processes. Of course neither method should be used to the exclusion of
the other, for each can serve to validate the results from the other.

The methods used to identify concerns, values, and expectations will be largely predicated on the planning study setting. A state-wide opinion survey might be appropriate for a planning study of significant impact. Where the planning study is small in scale, informal consensus building might serve the purposes well.
C. STATUS ANALYSIS

Where is the state educational system now?

After the concerns, values, and expectations have been appropriately aggregated and recorded, planners should analyze the status or current situation of the educational, economic, political, and social variables which can be relevantly associated with these concerns, values, and expectations. Essentially what the planners should derive here are facts and indicators.

A fact is a piece of information presented as having objective reality; that is, a piece of information that can be derived empirically in such a way that two or more objective investigators can reach essentially the same conclusion about its characteristics after independent investigations. The reader should note that by using this definition some opinions can be considered as facts. 4

An indicator is a descriptor, preferably in quantifiable terms, of the status at a specified point in time of a significant condition or variable which provides information useful for an analysis of progress toward an expectation and/or value associated with a concern. Indicators can be classified as input, context, performance, and societal.
An input indicator describes a condition or variable over which the education system has some control and which affects the system's ability to achieve an objective or resolve a need. Examples are the methods used to distribute resources to educational programs, the goods and services acquired with available financial resources, staffing patterns, and compensation methods.

A context indicator describes a condition or variable over which the education system has little or no control and which affects the system's ability to achieve an objective or resolve a need. Examples are the availability of human and economic resources, socioeconomic background of the students, and attitude of taxpayers toward supporting education.

A performance indicator describes a measurable or observable variable used to determine program effectiveness or efficiency. Examples are student assessment results, observable conditions or variables, and status and product assessment measures.

A societal indicator describes a measurable aspect of a social or cultural condition over which the education system has some effect or which affects the education system. Examples are employment market conditions, employment rate of recent graduates, median number of years of school completed for the adult population, aspirations of citizens
for children's education, and demographic characteristics of population.\footnote{5}

Because the planners may have difficulty distinguishing between facts and historical trends, these are studied later in Antecedent Analysis. If the definition for "fact" given above is followed and if it is remembered that the present rather than the past is being analyzed, then this difficulty distinguishing between facts and historical trends may be diminished.

In deriving these facts, the planners will have several means with which to work. Some facts will already have been introduced in the Concerns Analysis. Undoubtedly in an opinion survey some facts, perhaps more accurately described as aggregated opinions, will result. Other facts will have been introduced as concerns were expressed.

Pupil assessment may serve as a major source of facts. However the assessment of an educational system should be comprehensive in scope, should demonstrate a balanced emphasis—not concentrating on the easily measurables—and should give due consideration to the fact that some planning study instruments must necessarily be applied even though they lack refinement. Caution should be exercised in comparing the measurable educational attainment of districts that differ widely in their socioeconomic levels.
Other sources for facts are the many reports published by various agencies of the federal and state governments, as well as studies completed by those actors referred to in Chapter III as the scholars of educational finance.
D. ANTECEDENT ANALYSIS

Where has the state educational system been?

An antecedent analysis is the process of analyzing the more significant of the educational, economic, political, and social trends and movements which belong to the state educational system. A brief antecedent analysis which analyzes the movements leading up to the recent state educational finance reform was presented in Chapter III. In the components of Goal Identification, Concerns Analysis, and Status Analysis many variables and parameters were introduced. During the analysis of antecedents, the trends established by these variables and parameters and the movements associated with these trends can be analyzed.

The analysis of the antecedent movements associated with the trends in the educational, economic, political, and social variables and parameters is more complex than the analysis of the trends. However a careful analysis should reveal important considerations which would allow for a greater likelihood of success in the formulation of needs and/or objectives later and should lead to a better product from the planning study.

The identification of the antecedent trends established by the previously identified educational, economic, political, and social variables and parameters should be
relatively easy to establish. With each variable and parameter, the planners have only to specify their status periodically over a period of time; for example, one, three, five, and ten years ago; or perhaps every year for the last decade. An antecedent trend is a tendency or pattern over a period of at least several years in one of the variables identified in the components of Goal Identification, Concerns Analysis, and Status Analysis.

Some of these trends will be translatable into basic forces; for example, the inflationary economy, the taxpayers revolt, the increased number of school-age children, the increased number of years of education being completed by these school-age children, the change in society from information-poor to information-rich, and others.

Antecedent movements designed to change state educational financing systems are born in response to these basic socioeconomic forces. These antecedent movements cover a broad continuum beginning with the promotion of interests, continuing through political demanding, and leading to political action. They can be official or nonofficial, direct or indirect, and advanced by individuals or groups. They are usually national in scope although often advanced by state and local actors and groups.

Interest promotion is no less than a communication of interests to the policymakers whose decisions will affect
these interests. As interests are advanced or furthered, some achievement of representation is sought by the promoter. After representation is achieved, the interests, which are expressed to policymakers indicating that a particular policy be made, become political demands. When political demands achieve effective influence, political action usually occurs. Although the existence of both interest promotion and political demands as well as the achievement of representation are not sufficient conditions for effective influence, they are necessary ones.

It is quite likely that the results of the antecedent analysis will not be presented in any final report. Rather they will be utilized in the derivation of the needs and/or objectives and in developing the alternative educational finance methods later.
E. NEEDS ASSESSMENT

Where should the state educational system go?

Beginning with Goal Identification and going through Needs Assessment, the sequence of planning system components has been designed to derive educational needs. Some planners might find it convenient to organize the information from these components and to display it on a needs assessment table such as the one shown at the end of this component. First a concern can be stated in the indicated place. Just above this in the table, the relevant goal(s) which will provide direction for this concern should be stated; a single goal may be associated with more than one concern. Next the values for this concern which were expressed in the Concerns Analysis should be listed in the indicated area of the table. The related status statement(s) should be itemized in the indicated area aligned to the left of each corresponding value statement. Finally the relevant antecedents related to each value should be itemized and aligned to the left of the corresponding status statements. For each value, fact, or antecedent, at least one corresponding statement should exist for each of the other two in this triad, although one-to-one relationships are not necessary or even desirable. The planners can now derive the needs statements and criteria
for need resolution for each concern by assessing the antecedents, the present facts, and the future values for each. It is not necessary that planners use a needs assessment table, but it may prove quite useful to those who are unaccustomed to deriving needs.

A needs assessment is an investigation which identifies needs and their priorities. A need statement is general, philosophical, and timeless. It is expressed in terms of outcomes or results describing a measurable discrepancy in interval or ratio terms between "where we are now" and "where we should be," and is based upon the perspective introduced by "where we have been." A need is the measurable discrepancy between current results (status indicators) and desired results (values and/or expectations). A need statement is a measurable, more realistic form of a goal or concerns statement.

A need statement should:

1. address the overall problem to be solved;

2. be framed in the context of the state educational system, not just that of the state educational finance system, for educational finance may be only one means to solve a problem in the educational system;

3. not include references to solutions in it ("Need" should be used as a noun and not as a verb.);

4. focus on consequential needs (performance or product) in preference to instrumental needs (process or program);

5. be assigned a priority; and
6. include criteria for determining need resolution.

The determination of priorities among needs may well become a political process. Education is becoming more political, particularly as costs and accountability become matters of public concern.  

Included in a needs assessment might be a forecast and projection of the future status of the variables identified previously. The concerns analysis will have identified some variables both directly and indirectly. The status analysis will have furthered the delineation of the variables relevant to the concerns as well as have determined their current situation. The antecedent analysis will have traced the recent history and trends of these variables including the antecedent movements associated with them. With this thorough framework having been established for the variables, the basis will exist for as valid and reliable forecasting and projecting as can be done. 

Because some educators may feel threatened with stated objectives for future attainment, the planners should consider terminating the planning decision sequence of components with the assessment of needs. If objectives are determined and stated in the study, the policymakers may be very embarrassed at whatever time in the future the objectives are to be attained. At that time it may well be that the objectives are far from being reached. For many years educators have become accustomed to obtaining more
funds for education without having to commit themselves on what educational improvements would be bought. Since need statements can be given varying degrees of definitiveness, the planners have flexibility and may pose little threat to the policymakers in developing statements of need.

The needs assessment described above is classified by Kaufman as a Beta needs assessment in that it is goal based. This type of needs assessment fits the Florida setting in which the planning system is to be tested. If the component on Goal Identification is omitted from the planning process, then Kaufman's Alpha needs assessment would be more appropriate. Kaufman's Gamma needs assessment would be analogous to the planning system process, beginning with the component entitled Methods/Means Analysis.9

The reader has perhaps noticed that the verb "resolve" has been associated with the noun "need." Kaufman expressed his preference to the writer that verbs such as "resolve" or "eliminate" be used, because they imply that a discrepancy between "where we are now" and "where we should be" is to be lessened. Kaufman's next preference for a verb was "resolve"; his last preference was "meet." He disliked the verb "meet" because it had been used traditionally in referring to "meeting needs" where the concept of need was not always consistent with his contemporary definition of it. Since the writer has
chosen to compromise Kaufman's definition of need somewhat in order to achieve a need statement having some of the characteristics of objective statements, the writer has selected the verb "resolve" to be associated with need.
**GOAL:**

**CONCERN:**

<table>
<thead>
<tr>
<th>ANTECEDENTS:</th>
<th>STATUS FACTS:</th>
<th>VALUES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1</td>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
<td>2</td>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
<td>3</td>
<td>3.</td>
</tr>
</tbody>
</table>

**NEED STATEMENT:**

**CRITERIA FOR NEED RESOLUTION:**

**PRIORITY:**

Fig. 3. Needs Assessment Table (Optional)
F. LONG-RANGE OBJECTIVES DETERMINATION (Optional)

What should the state educational system ultimately achieve?

A long-range objective is a general, operational statement describing at least one realistic outcome which might be attainable some years in the future. Long-range objectives are characterized by a range of time-boundedness, some degree of measurability, and a priority. A long-range objective is an operational form of a needs statement with a range of time-boundedness. The criteria for need resolution should be included in the long-range objective as the criteria of measurability. Need statements and long-range objectives do not necessarily have to be related on a one-to-one basis.
G. OBJECTIVES DETERMINATION (Optional)

What should the state educational system achieve in the near future?

An objective is a specific, operational statement describing at least one attainable, realistic outcome for the system that, if achieved, will substantially resolve identified needs of high priority and will approach the achievement of the long-range objectives.$^{10}$

The objectives are characterized by their interval or ratio measurability, the priorities, and the realism of the needs statements and their criteria for need resolution.$^{11}$ The objectives possess the operationalism and the time-boundedness introduced with the long-range objectives. The objectives improve upon the long-range objectives by being more specific and having a definite time-boundedness rather than just a range of time-boundedness. Long-range objectives and objectives should exist in a one-to-one relationship. Specifying criteria is a very important component of an objective. Using these criteria the achievement of the objectives can be determined by means of an evaluation at the completion of policy formation.

Objectives which pertain to the state educational finance system can be referred to as instrumental
objectives; those which pertain to the larger state education system can be referred to as consequential objectives. The present state of the art in planning educational finance systems is such that instrumental objectives will be the predominant type.
H. METHODS/MEANS ANALYSIS

What are the alternative state educational finance methods and means?

The Methods/Means Analysis is the component for formulating (1) alternative, state educational finance strategies for resolving the needs and/or achieving the objectives of the state educational system and (2) processes through which these strategies might be implemented. The analysis should also result in a specification of some of the advantages and disadvantages of the methods and the means produced. The methods are the alternative, educational finance strategies for resolving the needs and/or achieving the objectives of the state educational system. The means are the processes through which the methods might be implemented.12

Many sources exist for generating alternative state educational finance means. They can be grouped into the following taxonomy, based upon a continuum from theoretical to actual:

1. theoretical models developed by the scholars of educational finance and public finance as well as economists,

2. recommendations from the many recent state educational finance studies,

3. recent legislative proposals for state educational finance reform, and
4. existing state educational finance programs.

Each level of this taxonomy can be factored into geographical groups, such as, within the state in question, within the region of the nation, and all other states in the nation. It is implied by this taxonomy that the existing educational finance system in the state in which the planning study is being conducted will be one of the alternative methods and means.

Up to this point in the planning system, the thinking done by the planners has been vertical; that is, the thinking has been logically deductive (from general to specific) and linked in a stepwise convergent sequence. In this component the planners thought processes should become lateral; that is, the thinking should become inductive and divergent. This lateral thinking is similar to brainstorming, a form of group dynamics designed to encourage creative and imaginative thinking about solutions to a problem by means of an uninhibited exchange of ideas. Following this component of the planning system, the planners will return to vertical thinking.  

Lateral thinking can be enhanced by deliberately increasing the production of good ideas for methods and means. The best way to generate a good idea is to have lots of ideas. In short, all other things being equal, the greater the number of ideas, the greater the likelihood of generating good ones.
Lateral thinking can be enhanced further by deferring judgment on the alternative methods and means as they are being generated. This deliberate deferment of judgment during the generation of alternative methods and means prevents premature judgment from hampering the imaginations of the planners. Also, allowing the generated alternative methods and means some time to incubate in the planners' minds will usually result in a less rigid but more creative set of alternatives.\textsuperscript{15}

After the alternative state educational finance methods and means have been generated, they may be modified, combined, simplified, expanded, rearranged, and generally analyzed for the purpose of improving them. During this analysis the planners should attempt to see grand strategies and overall designs for producing information for structuring decisions. In other words the detailed and specific methods and means should be viewed to reveal the larger, over-arching strategies inherent in these methods and means.

As the alternative state educational finance methods and means are being analyzed, some of the advantages and the disadvantages associated with each should be derived and listed.
I. INITIAL METHODS/MEANS ASSESSMENT

What are the advantages and disadvantages of the alternative state educational finance methods and means?

The initial methods/means assessment will be for the purpose of assessing all alternative state educational finance methods and means to determine the advantages and disadvantages possessed by them. The methods of assessment should include but not be limited to:

1. a face validity assessment;

2. a congruence assessment with legal constraints, known practices, valid research studies, and generally accepted theories and principles;

3. a cost-efficiency and a cost-benefit/cost-effectiveness assessment; and

4. an educational, economic, social, and political feasibility assessment.

A face validity assessment is a subjective judgment by the planners as to the extent to which each specific method and means will resolve the need(s) and/or achieve the desired objective(s). The method used to arrive at this judgment should be determined by the specific nature of the need(s) and/or objective(s) and the methods and means being assessed. Because the resolution of need(s) and/or achievement of the objective(s) is of utmost importance, this assessment should be conducted with great care.
Each of the alternative state educational finance methods and means should be assessed for congruence with legal constraints, known practices, valid research studies, and generally accepted theories and principles. Congruence with legal constraints should be checked with whatever legal counsel is available to the policymakers.

The best sources for assessing congruence with similar known practices, valid research studies, and generally accepted theories and principles will largely be dependent upon the nature of the state educational finance methods and means which have been generated. However, most of these sources will probably be associated with the group of actors referred to in Chapter III as the scholars of educational finance. Consultation with them will reveal the best sources for the methods and means which have been generated as well as for each of the types of information desired.

Each of the alternative state educational finance methods and means should be analyzed for cost-efficiency and for cost-benefit/cost-effectiveness. Cost-efficiency is an assessment of the processes involved in the alternative methods and means based upon their respective estimated costs.\textsuperscript{16}

Cost-benefit/cost-effectiveness, depending upon the degree to which the results can be quantified monetarily, is a measure of the projected results expected from the
alternative methods and means based upon their respective estimated costs. This cost-benefit/cost-effectiveness assessment may be approached from either of two bases. If the total dollars available is strictly constrained, then the planners should assess the alternative methods and means from the basis of attempting to resolve the need(s) and/or to achieve the objective(s) with the greatest benefit or effectiveness possible within the dollar constraint. In the event that a significant lack of need resolution and/or attainment of the objectives is probable, the planners should consider recycling through some of the components used to derive them. If the total dollars available is not strictly constrained, then the planners should assess the alternative methods and means from the basis of attempting to resolve the need(s) and/or to achieve the objective(s) for the least cost.¹⁷

Four feasibility assessments should be made of the alternative state educational finance methods and means. These assessments are educational, economic, social, and political. The educational assessment should supplement the face validity assessment by investigating the potential impact and effect which the alternatives might have on those parts of the state's educational system not within the scope of the needs or objectives. The economic assessment should investigate the potential impact and effect which the alternatives might have on the state's economy;
for example, the existing tax structure, the manpower/labor force, the employment rate, the business/industrial sector, the gross state product, and others. The social and demographic factors in the state might be affected also, although probably to a lesser degree than the economic or the political ones; for example, certain ethnic groups' reactions, the emphasis on the different types of education available to meet the social demands, and others.

The political structure will undoubtedly be affected by changes in educational finance; thus a careful assessment should be made of the potential political constraints which may be affected by these changes. The groundwork for much of the assessment needed here will have been laid in Antecedent Analysis. The planners must now assess the alternative educational finance methods/means in this same context.
J. PRIORITY ALTERNATIVE METHODS/MEANS SELECTION

Which alternative state educational finance methods and means should receive a refined methods/means assessment?

In this component of the planning system the planners should eliminate all but a manageable number of the alternative methods and means for resolving the need(s) and/or achieving each objective or combination of objectives. Since this number may even be dependent upon the characteristics of the methods and means which are selected, no recommendation is made here with respect to it other than that there should be at least two.

No easy method exists to choose the best alternative(s) from among many. Some methods do exist which rely on the quantification of the alternatives, sometimes in a tabular format, with the result being a ranking of the alternatives. These methods will probably possess more objectivity than others, but objectivity does not necessarily result in validity. In other words, in selecting the best alternative(s) it is better to be roughly right than exactly wrong.

On the other hand the planners could utilize a subjective approach to choosing from among alternatives. Consensus building or a form of the delphi technique are examples of methods of gathering subjective judgments.
which yield a convergence of opinion. The writer prefers the use of the more subjective approaches because of the number of and the frequent complexity of the variables involved in the alternatives and because of the political context in which the planning study may be conducted.

Regardless of the method used to select the priority alternative methods and means, the existing state educational finance system should be included in the Refined Methods/Means Assessment. Although the planners may be able to assess at this time that the system is not qualified to be considered as one of the priority alternative methods/means, the policymakers will undoubtedly want to see for themselves how it compares with the priority alternative methods/means.

In this component of the planning system a sensitivity analysis may be quite useful. A sensitivity analysis is a process for increasing the perception of differences among alternative methods and means in complex decision settings. If the setting is not perceived by the planners to be complex, then of course a sensitivity analysis might not be necessary. 18

In contingency analysis, one method of sensitivity analysis, planners would attempt to determine the best alternative methods and means within the probable range of contingencies for them. Probable variations would be predicted in the variables introduced into the planning study
as having an effect on the state educational finance system. The alternative methods and means can then be analyzed, based upon these contingencies.

Another method of sensitivity analysis is a fortiori analysis, where planners attempt to control the human bias existing in the planning study by de-emphasizing identified advantages for the methods and the means which they prefer while emphasizing their disadvantages. Simultaneously, the planners would de-emphasize identified disadvantages for the methods and the means which they dislike while emphasizing the advantages. If the alternatives which appeared to be good before are still preferred, then perhaps they are the priority ones.

A third method of sensitivity analysis is a break-even analysis. Here the planners would alter their preferences of alternative methods and means to make them appear even. Then the differences among the assumptions used to determine the original preferences as well as their break-even alterations would be considered. The result might be the revelation of prior biases which may have been overly optimistic or overly pessimistic.
K. Refined Methods/MMeans Assessment

What are the advantages and disadvantages of the priority alternative state educational finance methods and means?

The refined methods/means assessment is used to assess a manageable number of alternative state educational finance methods and means in order to determine further the advantages and disadvantages possessed by them. The methods of assessment should include but not be limited to:

1. face validity re-assessment,
2. simulation analysis, and
3. pilot-test.

In the "Initial Methods/Means Assessment," a face validity assessment was conducted. This initial face validity assessment was to be a subjective judgment by the planners as to the extent to which each specific method and means would achieve the desired objective(s). Because of the importance given to resolving the need(s) and/or attaining the objective(s), at this time the previous face validity assessment should be refined, revised, and extended for the priority alternative state educational finance methods and means.

The priority alternative state educational finance methods and means should be analyzed by simulation. For most applicable situations, a computer is almost a necessity.
A simulation program can be written, or an existing simulation program can be modified, which will allow comparisons to be made among the priority alternatives. Preferably the program can be operated in an interactive mode which will simultaneously allow comparisons among all priority alternative methods and means, including the existing state educational finance system. The interactive mode not only will provide immediate responses for questions from the policymakers but also will allow the planners to analyze the alternatives much more efficiently.

A computer simulation allows the alternatives to be compared district-by-district and/or school-by-school with a reasonably large number of different combinations of inputs in a small amount of time. The computer should also allow a linear programming design to be used which will "float" all variables involved in the calculation between assigned minimum and maximum values while maintaining a constant total funding level for the proposed formulas.

Linear programming can be characterized by a linear equation expressing the relationship between an approximate quantity such as cost and the basic parameters of the system or by a set of linear equations or inequalities expressing the constraints on the system. The method of solution is to solve for the best solution from among what is an infinite set of possibilities. It is this characteristic of solving explicitly for the best solution from
an infinite set of feasible solutions which makes a linear programming approach different from that of simulation.

During the simulation heuristic modifications can be made in the alternative methods and means when and where they are observed to be necessary. In addition to assessing the predetermined validities and functional reliabilities of the alternative methods and means, the planners can study them for unanticipated outputs or side effects.

The most widely known computer simulation is the one developed by the National Educational Finance Project. It is designed to simulate in an interactive mode the consequences of alternative decisions about the financing of public elementary and secondary education. The simulation deals with program, distribution, and revenue decisions. A complete list of these decision alternatives, the necessary input coding sheets to create the data base for the simulation, and sample input and output for a prototype state of 32 school districts are available in the user manual entitled NEFP Decision Process: A Computer Simulation for Planning School Finance Programs.19

A pilot test of the alternative state educational finance methods and means should be used to complement the simulation analysis. The pilot-test should be inversely related to the degree that a thorough computer simulation is conducted. When the alternative methods and means are
inappropriate for or difficult to submit to a simulation analysis, then a pilot-test is appropriate. When the alternative methods and means are thoroughly analyzed by simulation, a pilot-test might not be needed.

As the pilot-test is being conducted, heuristic modifications can be made in the alternative methods and means when and where they are observed to be necessary. A more summative evaluation may be preferred at the conclusion of the pilot-test. In addition to assessing the predetermined validities and functional reliabilities of the alternative methods and means during the pilot-test, the planners can study them for unanticipated outputs or side effects.
L. METHODS/MEANS SELECTION

Which alternative state educational finance methods and means possess the greatest likelihood of resolving the need(s) and/or achieving the objective(s)?

In this component the policymakers and the planners should select from among the priority alternative educational finance methods and means those which possess the greatest likelihood of resolving the need(s) and/or achieving each objective or combination of objectives. As in the Priority Alternative Methods/Means Selection, no easy method exists to choose the best alternatives from among even a manageable number. Again it is recommended that a subjective approach be utilized to make the selection. Sensitivity analysis techniques may be repeated.

A major difference between this component and Priority Alternative Methods/Means Selection is that the policymakers should be the key actors to make the selection. Where the planners were the principal decisionmakers in selecting the priority alternative methods and means, now the policymakers should assume that role.
M. FIELD TEST

What inadequacies, incompletenesses, and deficiencies can be found and corrected in the proposed set of state educational finance methods and means?

Following the simulation and/or pilot-test of the priority alternative educational finance methods and means and the selection of one set of methods and means, the final selection should be field-tested if at all feasible. Admittedly settings exist where a field test might be prohibited because of political limits, but the planners should probe to determine if these limits are real or imagined. Allowing the final selection of alternative methods and means to go from simulation and/or pilot-test directly to full scale implementation could lead to enough serious inadequacies, incompletenesses, and deficiencies in the methods and means that they might be rejected in favor of the existing program. This situation might be prevented by a thorough field test with heuristic adjustments for those inadequacies, incompletenesses, and deficiencies that would be uncovered.

The field test consists of a thorough fine-tuning of the proposed set of state educational finance methods and means as they operate in an environment generally representative of all conditions and contingencies which may be experienced in full scale implementation.
N. TEST OF THE PLANNING SYSTEM

As stated in the purpose of the present study, the most meaningful test of the planning system is to determine if it can produce "useful information for policymakers to judge alternatives about a state educational finance system." The procedures used in testing the planning system have been presented in Chapter I. A panel of experts was formed to judge the usefulness of the information produced by the writer using the planning system. Two applications of the planning system were presented to this panel. The rationale for determining what issues would be presented in these two applications is given in the material which follows. Since these applications differ structurally somewhat from the planning system which generated them as well as from each other, an explanation of these differences is presented. Following this explanation each of the two applications is presented with changes recommended by the panel of experts. Each member of the panel of experts was requested to assess the usefulness of the information produced in one or both applications for state level policymakers to judge the alternative changes proposed for the Florida Education Finance Program.
A number of possible issues of concern and need could have been selected as the focus of a test. Some of these would have involved only needs of an instrumental nature, that is, they would have involved only educational finance related needs. Other issues would have involved needs of a consequential nature, that is, they would have involved needs related to the educational system. Some examples will help to clarify the difference. Two issues of concern and need which the test could have addressed involved only instrumental or educational finance needs and are summarized in the following paragraphs.

The first example of an issue involving only instrumental or educational finance needs is one related to Florida's funding program cost factors. Many educational policymakers at the state, district, and school levels have expressed their concern that the present Florida Educational Finance Program cost factors do not represent the relationships among actual program costs per FTE student. These variances cause problems for almost all districts in meeting the requirement that a specified percentage of the funds earned by a program must be spent on a district aggregate basis for school level expenditures. "Need" here would be defined for each program as the difference
between a program's existing funding cost factor and the relationship produced by dividing that program's cost per FTE student by the cost per FTE student for the basic program of grades four through nine which has a funding cost factor of 1.00.

The Florida Department of Education performs a thorough computer analysis of these relationships with and without operating capital outlay expenditures as well as with and without food service and transportation expenditures. Then for each program and for all districts, this information is displayed with the districts in alphabetical order, with the districts in rank order based upon cost per FTE student, and with the districts in rank order based upon FTE students. A report entitled Analysis of Program Cost Factors identifies the need as defined in the preceding paragraph. The proposed alternatives to resolve these needs are cited as the proposed changes in the funding cost factors necessary to conform them to the relationships among the programs' actual expenditures.22

A second example of an issue of concern and need involving only instrumental or educational finance needs is one related to equilization. Equalization is so much a national concern that Section 842 of the Education Amendments of 197423 provided about $12 million to states to
study and recommend alternatives for further equalizing their state aid programs.

Equalization has been an issue in Florida too. In 1973 when the Florida Educational Finance Program was created the primary intent was to guarantee each public school student in Florida access to an education appropriate to his or her needs regardless of geographic location or local economic condition. But in 1974 the legislature repealed the ad valorem tax equalization provision, a holdover from Minimum Foundation Program days. However even without this equalization feature, Florida meets the Range of Disparity analysis test for equalization promoted by the U.S. Office of Education. The Florida Education Finance Program already provides special cost factors for more than two dozen programs and has a minimum required local effort of 6.4 mills with a cap of 8 mills (39 of Florida school districts [58%] are presently levying 8 mills.) However, not enough political concern exists to validate a need for improvement in equalization in the F.E.F.P.

Obviously either of these preceding issues could have been selected for tests of the system. The first would have been a true field test. The second might have illustrated that without sufficient concern shown by the policymakers and without significant differences to
establish a need, no attempt should be made to assess needs or to generate alternative financial proposals.

However these tests would have involved only instrumental or educational finance needs. The planning system was developed to accommodate this type of need, and it is this type of need which so many finance studies presently address. One of the purposes of the planning system was to develop a methodology which would permit needs involving educational variables of a nonfinancial nature to be identified. Needs of this type are consequential in nature; they involve measures of outcomes of the educational system.

The planning system was tested twice in a consequential setting. The purposes of the first application were to assess consequential needs in the basic skills area based upon state assessment test results and to determine the most likely educational finance methods and means to resolve these needs. These needs involved educational deficiencies of students who are unable to achieve at a minimally acceptable level of performance in grades three, five, eight, and eleven. The purposes of the second application were to assess consequential needs involving the ability of vocational education to meet occupational demands with occupational supply and to determine the most likely educational finance methods and means to resolve these needs.
The Florida Education Finance Program was the state educational finance system with which these tests were involved. The F.E.F.P. includes all sources of state funding to public school districts. The state educational system includes all of the processes within the scope of the seven goals for education in Florida and is defined in statute. That part of the system within the scope of the first, second, and third goals was the focus for these tests. This part of the system includes all pre-kindergarten through grade 12 education and some adult education. 27
P. EXPLANATION OF STRUCTURAL DIFFERENCES
BETWEEN THE PLANNING SYSTEM AND
EACH APPLICATION OF IT

The applications of the planning system are designed to present useful information to policymakers to judge alternatives about the Florida Education Finance Program. Some components are optional and need not be used at all; for example, Goal Identification, Long-range Objectives Determination, Objectives Determination, and Field Test. Some components are process rather than product oriented with respect to the production of useful information for policymakers; these components produce strategies which are utilized in performing the tasks of other components; for example, Antecedent Analysis and Appendicies C, D, E, and F. Some useful information that is produced by several components in sequence needs to be reorganized for greater coherency and better communication. Therefore not all of the components or tasks which might have been performed to produce useful information are presented in the same sequence in the applications as they appeared in the planning system; for example, Concerns Analysis, Status Analysis, Initial Methods/Means Assessment, Priority Alternative Methods/Means Selection, and Refined Methods/Means Assessment. In addition some components and tasks which are performed for more than one application
might be presented differently because of different conditions associated with each application; for example, Concerns Analysis, Status Analysis, Needs Assessment, and Refined Methods/Means Assessment.

Also because the planning system was developed to be used in any state, for any level of education, and for many different types of applications, not all of the components or tasks occurring in it were used in the separate applications.

Thus, the presentations of the two applications testing the planning system will not only differ in their format, but they will also differ from each other. The general principles of planning embodied in the planning system will of course occur in both of these applications. The discussion which follows will explain where and why each application differs significantly from the format of the planning system and where and why each application's format differs from the other.

Most of the discussion in the optional component of the planning system on Goal Identification relates to methods which might be used to derive goals. In Florida seven goals were derived by procedure prescribed in statute and were approved by the State Board of Education. Therefore the presentations for each application only briefly identify the relevant goals and some related information.
The titles for Concerns Analysis and Status Analysis have been slightly reworded for better understanding by policymakers. Because those concerns which have been identified are principally statutory or regulatory in nature, they need not be as thoroughly analyzed as would concerns which might be only antecedents to proposed law or regulation. In this latter case much of the material presented in the Antecedent Analysis component would be utilized in an analysis of concerns also. Since the values used in the vocational application can ultimately be quantified, that analysis includes expectations also.

In the analysis of the present status of variables which have been identified in the concerns analysis, the attempt is to determine "where-we-are-now" indicators which will match with the "where-we-should-be" variables. The basic skills application involves performance indicators in both of these analyses, while the vocational application uses societal indicators in the analysis of concerns, values, and expectations and performance indicators in the status analysis.

The component of Antecedent Analysis does not appear as a written section in either application. The analysis of antecedents produces strategies and information that are used throughout each application. This analysis affects what variables are selected in the analysis of concerns and values, what corresponding variables are
used in the status analysis, how all of these concerns and variables are presented, what needs are identified later, what alternative educational finance methods and means are generated later, and so forth. The antecedent analysis is a process component in that it produces strategies by means of which the analyses in the other components are determined.

Each application's assessment of needs possesses some constraining statements. The constraints in the basic skills application are not as formidable as those in the vocational application, which essentially prevent a thorough analysis of educational finance alternatives later. The statement of needs in the basic skills application is more conventional, whereas in the vocational application this statement could be the aggregate of the approximately 150 arithmetic differences determined from two columns of a six page table.

Neither of the components for Long-Range Objectives or Objectives Determination was utilized in either application. Florida Department of Education administrators have expressed their concern about the use of objectives as being too structured and too accountability oriented.

In analyzing the methods and means to formulate alternative strategies to resolve needs, a taxonomy of strategies was developed and presented in each application. This taxonomy was developed using the approach described
in the Methods/Means Analysis component. Although the taxonomy happened to be acceptable to both of these applications, it is not judged to be general enough to be included in that component of the planning system. Following this taxonomy the alternative strategies to resolve the needs were derived by the writer.

Some non-financial strategies were considered and included in the taxonomy, even though they were beyond the scope of the planning system. Their inclusion provided a more comprehensive set of alternatives for the panel of experts to consider.

In assessing the alternative educational finance methods and means, the presentation format is based upon assessing each of the alternatives one at a time rather than assessing all alternatives for each of the planning system components one at a time. Rather than presenting each component in its entirety for all alternatives, the order of presentation is to take each alternative and pass it through the tasks for each of the components Initial Methods/Means Assessment, Priority Alternative Methods/Means Selection, and Refined Methods/Means Assessment.

All alternative methods/means were subjected to the four initial methods of assessment. Of the methods of assessment in the Refined Methods/Means Assessment, a re-assessment of face validity was utilized for alternative D of the first application and alternatives A and C of the
second application. A simulation analysis would be appropriate for alternatives A and C of the second application when they can be further developed. Alternative D of the first application was field tested during the 1977-78 school year, although the results were not available at the time of this writing. The field test would suffice for either a pilot-test or a simulation analysis.

The Methods/Means Selection component was designed to have the policymakers make a selection from among a limited choice of alternatives. Because the arrangements for testing the planning system precluded the participation of policymakers, the writer made selections from among the alternatives to bring closure to each application. These selections are presented at the end of each application under Findings and Conclusions.

The last issue presented in each application's Findings and Conclusions section is that an accountability determination can be made of the results being achieved for the resources being invested for each of the viable alternatives. This accountability determination relates to the policy formation system presented in Chapter III. It is beyond the scope of the present study.

The Field Test component was utilized for the first application only. Obviously the second application has not developed far enough for a field test to be considered.
Q. BASIC SKILLS APPLICATION

The first application of the planning system assesses needs in basic skills education and determines the most likely educational finance methods and means to resolve these needs. The needs are derived from educational deficiencies of students who are unable to achieve at a minimally acceptable level of performance in grades three, five, eight, and eleven as determined by state assessment tests.

1. Goal Identification

Florida has identified seven goals for education. The scope of the state's commitment to public education and priorities of effort with respect to these goals are presented in Education Policy for the State of Florida. A status analysis of enrollments and expenditures with respect to these goals, along with projections into the future, is presented in Analysis of Projected Enrollments and Expenditures by Goal for Public Education in Florida in 1974-75, 1980-81, and 1985-86. In other work being done by the state and its 67 school districts involving the mission of comprehensive planning, additional issues have been delineated with respect to these goals.28

Three of these goals; namely, Basic Skills, General Education, and Vocational Competencies, encompass most of
the scope of the K-12 public school programs. The order of presentation indicates the priority among the goals. More than $2 billion was expended during 1976-77 for these three goals in K-12 public schools. Since such a large amount of money would appear to justify careful consideration in its allocation, it is within the boundaries established by these three goals and K-12 public school programs that this study will be principally concerned.

These three goals are:

GOAL 1. Basic Skills. All Floridians must have the opportunity to master the basic skills for communication and computation (listening, speaking, reading, writing and arithmetic). Basic skills are fundamental to success.

GOAL 2. General Education. All Floridians shall have the opportunity to acquire the general education fundamental to career and personal development and necessary for participation in a democratic society. This includes skills, attitudes and knowledge for general problem-solving and survival, human relations and citizenship, moral and ethical conduct, mental and physical health, aesthetic, scientific and cultural appreciation, and environmental and economic understanding.

GOAL 3. Vocational Competencies. All Floridians shall have the opportunity to master vocational competencies necessary for entry level employment by the time they leave full time education. For persons who continue formal education through advanced or professional programs, vocational competencies will be in areas of professional employment. Vocational education shall be continuously reviewed to assure that Florida's needs for workers are met and that individuals can secure further training needed for career advancement.
To narrow the scope of this study to the most important issues, only those relating to the highest priority goal, basic skills, will be considered further.

2. Analysis of Concerns and Values

The Legislature stated its intent to have the Department of Education identify concerns and needs in 1976 when it said that

The commissioner shall be responsible for all planning functions for the department, including . . . indicators that are used to . . . identify areas of concern and need . . . (Sect. 229.555 (1) (a), F.S.)

A limited analysis can be made of the educational, political, and social concerns and values within the scope of the basic skills goal. Concerns are defined to be unrefined, unevaluated expressions that emanate from individuals or groups in their attempts to identify needs. Values are defined to be expressions of belief or conviction about what should exist rather than what does. As concerns become more refined and more evaluated expressions, they evolve into values and ultimately statements of need. Therefore value statements rather than concern statements will predominate in this analysis.

It has been the result of concerns and values expressed by many, educator and non-educator alike, which has elevated the Basic Skills Goal to the number one priority among all goals at the state level. With respect to district level priorities, an assessment made of district
comprehensive plans in 1975 revealed that the highest priorities were being given to the basic skills areas.

The basic skills area was the first one addressed by the Governor's Citizen's Committee on Education in 1973 when attention was focused on the school program. The Legislature went on record with its initial position on educational accountability in 1971. The Legislature's latest position is:

The Legislature recognizes that the early years of a pupil's education are crucial to his future and that mastery of the basic skills of communication and computation is essential to the future educational and personal success of an individual. The first priority of the public schools of Florida shall be to assure that all Floridians, to the extent their individual physical, mental, and emotional capacities permit, shall achieve mastery of the basic skills. The term "basic skills," for the purposes of this section, means reading, writing, and arithmetic. Early childhood and basic skills development programs shall be made available by the school districts to all school-age children, especially those enrolled in kindergarten and grades 1 through 3, and shall provide effective, meaningful, and relevant educational experiences designed to give students at least the minimum skills necessary to function and survive in today's society. (Sect. 230.2311. F.S.)

With the creation of the Florida Education Finance Program in 1973, the Legislature funded 20% more for students in grades K through 3 than for students in grades 4 through 10. Two years later this amount was increased to 23.4% more than the amount allocated to students in grades 4 through 9. These actions indicate both monetary and
moral support from the Legislature for basic skills in the early grades.

As further evidence of the Legislature's concern for basic skills is its directive to the State Board of Education in 1976 to establish minimum student performance standards:

The State Board of Education shall approve minimum student performance standards in the various program categories and chronological grade levels, especially in reading, writing, and mathematics, which the Commissioner of Education determines shall best indicate the status of the state system of public education. (Sect. 229.565 (1), F.S.)

With the creation of the Basic Skills and Functional Literacy Compensatory Supplement in 1977, the Legislature funded $10,000,000 for 1977-78 and $26,500,000 for 1978-79 to be allocated proportionately based on the number of students below the first quartile on the statewide assessment tests for the purpose of providing:

Supplemental funds to each school district to be used for the sole purpose of providing direct remedial instruction to those students enrolled in the K-12 program who have need of special educational assistance in order that their level of educational attainment may be raised to that appropriate for their age. It is the intent of the Legislature that each school district shall utilize the instructional programs which in the professional opinion of the teacher will be most effective and that the effectiveness of this program shall be evaluated in terms of the increase in student achievement in the basic skills of reading, mathematics, and writing as measured by pretest and post-test of each student receiving special educational assistance from the funds provided by this act. (Sect. 236.088 (2), F.S.)
During the development of the preceding legislative acts, many expressions of value regarding the appropriate levels of competency in the basic skills goal area were made. These expressions were made by the Commissioner and department staff, Legislators and legislative staff, school board members and district staff, and others.

Only one set of values has official status however. These values are expressed as the Minimum Student Performance Standards authorized by the Legislature in 1976, approved by the State Board of Education in 1977, and published in two companion documents entitled Minimum Student Performance Standards for Florida Schools, 1977-78, 1978-79, and 1979-80. One document contained standards for grades 3 and 5; the other, for grades 8 and 11. These standards identify the minimum competencies in reading, writing, and mathematics expected of students not impaired by a mental or physical handicap. Those aspects of the competencies which should be acquired by the beginning of grades 3, 5, 8, and 11 are translated into basic skills.  

These standards are, by definition, minimum. No doubt some would challenge the appropriateness of using minimum standards for values. However few would disagree that the inability to meet these standards is a need which definitely should be resolved. Although higher values could be selected, their appropriateness would become much more debatable.
Another set of values which should be generally accepted are national averages in reading, writing, and mathematics. The difficulty is obtaining a valid and reliable comparison basis of state competencies with national ones. One recent attempt of this task was the 1974-75 National Assessment Replication (NAR) in reading and mathematics for students ages 9, 13, and 17. Another was the 1975-76 Anchor Study involving grade 5 normed reference reading assessment data. More on each of these sets of values will be presented later.

All three of the preceding sets of values will provide a measure of "where Florida should be" in basic skills. Needs can be identified to the extent that determinations can be made on comparable bases for basic skills of where Florida should be and where Florida is now.

3. Analysis of Present Status

To determine where Florida is now a limited analysis can identify the present status of the educational, political, and social variables which can be relevantly associated with the concerns and values identified previously. This status analysis should produce indicators.

An indicator is defined to be a descriptor, preferably in quantifiable terms, of the status at a specified point in time of a significant condition or variable which provides information useful for an analysis of progress.
toward a value associated with a concern. Although indicators can be classified as input, context, performance, and societal, the ones of principal concern in this study are performance.

The Legislature intended for the results of statewide assessment to be used (1) as a measure of success with respect to state goals and minimum performance standards and (2) as a means to identify state educational needs when it enacted in 1976 the following:

The primary purpose of the statewide testing program is to provide information needed for state-level decisions. The program shall be designed to:
(a) Assist in the identification of educational needs at the state, district, and school levels.
(b) Assess how well districts and schools are meeting state goals and minimum performance standards. (Section 229.57(1), F.S.)

**National Assessment Replication Summary**

In 1974-75 Florida conducted a state-wide assessment study, the National Assessment Replication (NAR), of students in reading and mathematics. Based upon the National Assessment of Educational Progress (NAEP), it provided state level data for comparison of performance of Florida students with the southeast and the nation. A detailed account of the study can be found in An Analysis of the Results of the Florida Educational Assessment Using the NAEP Model-Reading and Mathematics-1974-75.
The summary which follows clearly indicates that Florida nine-year-olds performed significantly below their national peers in both reading and mathematics. This conclusion is true for male, female, and non-black subsets of the test sample. Only blacks age 9 in Florida did not perform significantly below their National counterparts.

Summary of NAEP Reading Comparisons

Compared to the Nation, Florida students performed significantly below their National peers at age 9 but significantly above them at ages 13 and 17. Compared to students in the Southeast, Florida students performed similar to them at age 9 but significantly and substantially above them at ages 13 and 17.

Compared to their National peers, Florida males performed significantly and substantially below them at age 9, significantly above them at age 13, and very much like them at age 17. Florida females performed significantly below their National counterparts at age 9, and significantly above them at ages 13 and 17. Florida Blacks did not perform significantly different than National Blacks at any age level, while Florida non-blacks performed significantly below students in the corresponding National group at age 9 but significantly above them at ages 13 and 17. In terms of parental education level as well as size...
and type of community, relative performance of the reporting groups was very inconsistent across age levels.

In terms of reading content, Florida students surpassed their National and Southeastern counterparts most consistently in Visual Aids and Following Directions.

**Summary of NAEP Mathematics Comparisons**

Compared to the Nation, Florida students performed significantly below their National peers at age 9 and similar to their National peers at ages 13 and 17. Florida students at all three age levels performed significantly above their counterparts in the Southeast.

Compared to their National counterparts, Florida males performed significantly below them at ages 9 and 17, and the performance levels did not differ significantly at age 13. Florida females performed significantly below their National peers at age 9, and the performance levels did not differ significantly at ages 13 and 17. Florida Blacks did not perform significantly different than National Blacks at ages 9 and 13, but they did perform significantly below National Blacks at age 17. Florida non-blacks performed significantly below their National counterparts at age 9, but they did not perform significantly different than National non-blacks at ages 13 and 17.
Other Summary Comparisons Resulting from NAEP

In terms of parental education classifications, the "high school graduate" group performed significantly below their National peers at every age level, while the performance of the other two groups was more inconsistent. Within the size and type of community classifications, Florida's "urban fringe and medium city" students consistently performed well below their National peers.

Anchor Test Study Summary

In 1975-76 Florida conducted a statewide assessment study, the Anchor Test Study, of grade 5 students in reading. Based upon the Metropolitan Achievement Test as the anchor, it provided school, district, and state level data for comparison of performance of Florida students with the nation. A detailed account of the study can be found in Florida Norm Referenced Test Results, Grade 5 Reading. The Florida vs National comparative data is displayed in Table 2. As can be seen, the average raw score for Florida students is below the national average.

As can be seen, Florida students on the average outscored about 40 percent of their National counterparts in the vocabulary subtest, and in comprehension outscored approximately 42 percent. On the total test battery, the
### TABLE 2

**FLORIDA AND NATIONAL ACHIEVEMENT RESULTS**

(Grade 5)

<table>
<thead>
<tr>
<th>Raw Scores</th>
<th>Vocab-</th>
<th>Compre-</th>
<th>Total</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Average Scores</td>
<td>26.0</td>
<td>22.3</td>
<td>50.5</td>
<td>74,524</td>
</tr>
<tr>
<td>National Average Scores</td>
<td>28.9</td>
<td>24.7</td>
<td>53.6</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentile Scores</th>
<th>Vocabulary</th>
<th>Comprehension</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Average Scores</td>
<td>40%tile</td>
<td>42%tile</td>
<td>42%tile</td>
</tr>
<tr>
<td>National Average Scores</td>
<td>49%tile</td>
<td>49%tile</td>
<td>50%tile</td>
</tr>
</tbody>
</table>

Source: Student Assessment Section, Florida Norm Referenced Test Results, Grade Five Reading (Tallahassee: Florida Department of Education, Spring, 1976).

The average score was about the 44th percentile. The National means were the 49th, 49th, and 50th percentile respectively.

The state mean scores reported here are slightly high. Several large urban school districts administered a particular test for which a total score could not be equated through the anchor process. These scores, if included, would have lowered the state average score—probably to about the 42nd percentile.
Finally, as further indication of the level of achievement in Florida compared to national averages, the data can be divided into "quartiles." By definition, the national quartiles will each contain 25 percent of the students. If performance in Florida is relatively lower, there will be more than 25 percent in the lower quartile, and vice versa.

The table below displays the data by quartiles. As can be seen, Florida has greater proportions of its students in the lower quartiles than occurred in the National sample. All data entries are percentages of students, not percentiles or mean scores.

TABLE 3

FLORIDA AND NATIONAL ACHIEVEMENT DATA
BY QUARTILES
(Grade 5)

<table>
<thead>
<tr>
<th></th>
<th>Vocabulary</th>
<th>Comprehension</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
</tr>
<tr>
<td>Florida</td>
<td>39.1</td>
<td>20.7</td>
<td>21.0</td>
</tr>
<tr>
<td>Difference</td>
<td>+14.1</td>
<td>-4.3</td>
<td>-4</td>
</tr>
</tbody>
</table>

Source: Student Assessment Section, Florida Norm Referenced Test Results, Grade Five Reading (Tallahassee: Florida Department of Education, Spring, 1976).
1977-78 Florida Assessment Program Results

The latest available assessment results for Florida students do not permit comparisons to be made outside of the state. However, in 1977-78 third, fifth, eighth, and eleventh grade students were assessed on skills which permitted comparison with the Florida Minimum Student Performance Standards. These standards were adopted in April, 1977 and are in their first year of use. Although much care was taken with their development, any problems which one might expect with standards may exist. For example, Glass believes that any standards designed to determine mastery or competence in statistical or psychological ways must have been designed arbitrarily.

The minimally acceptable level of compliance for a program in a school is 70%. Two programs exist; they are mathematics and communications which is the aggregate of reading and writing. The composite compliance percentage which must be at least 70% is an unweighted mean of the individual standards' percentages.

Although the lower grades have higher compliance percentages than the upper grades, the percentages decline steadily for both programs from third to fifth and then to eighth grades.
TABLE 4

STATE LEVEL COMPOSITE PERCENTAGES FOR ALL GRADES AND BOTH PROGRAMS

<table>
<thead>
<tr>
<th></th>
<th>Third</th>
<th>Fifth</th>
<th>Eighth</th>
<th>Eleventh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>88.5%</td>
<td>75.9%</td>
<td>70.4%</td>
<td>70%</td>
</tr>
<tr>
<td>Communications</td>
<td>79.5%</td>
<td>78.6%</td>
<td>73.1%</td>
<td>77%</td>
</tr>
</tbody>
</table>


A summary of the 1977-78 Florida Assessment Program results for third, fifth, and eighth grade students expressed as percentages of compliance with standards is given in Table 5. These data, along with the results for each school district, can be found in State Report of District Standards Achievement and State and District Report of Results - 1977-78. These results are of course state level aggregates. District results will vary somewhat from these, and school results will vary even more. However these state aggregates provide the minimal information necessary to identify needs.
### TABLE 5

**COMPLIANCE PERCENTAGES FOR MINIMUM STUDENT PERFORMANCE STANDARDS FOR GRADES THREE, FIVE, AND EIGHT**

#### Grade 3 - Mathematics

**Number Concepts**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>97%</td>
<td>A. The student will count quantities.</td>
</tr>
<tr>
<td>99%</td>
<td>B. The student will read and write numerals.</td>
</tr>
<tr>
<td>98%</td>
<td>D. The student will put numbers in order.</td>
</tr>
</tbody>
</table>

**Computation**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>88%</td>
<td>F. The student will add whole numbers.</td>
</tr>
<tr>
<td>81%</td>
<td>G. The student will subtract whole numbers.</td>
</tr>
</tbody>
</table>

**Practical Problems**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>86%</td>
<td>Q. The student will identify the value of coins and bills.</td>
</tr>
<tr>
<td>85%</td>
<td>T. The student will solve real-world problems involving whole numbers.</td>
</tr>
<tr>
<td>74%</td>
<td>V. The student will solve money problems.</td>
</tr>
</tbody>
</table>

#### Grade 3 - Reading

**Vocabulary**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>98%</td>
<td>A. The student will acquire a basic vocabulary as determined by a specified word list.</td>
</tr>
<tr>
<td>83%</td>
<td>C. The student will determine word meaning from a knowledge of word parts as used in a given text.</td>
</tr>
</tbody>
</table>

**Reading Comprehension**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>79%</td>
<td>F. The student will find information in a message.</td>
</tr>
<tr>
<td>75%</td>
<td>G. The student will determine the causes and effects of events and actions.</td>
</tr>
<tr>
<td>74%</td>
<td>H. The student will determine the logical generalizations which can be drawn from a message.</td>
</tr>
</tbody>
</table>
TABLE 5—Continued

Fractions
60% J. The student will add and subtract fractions.

Measurement
82% O. The student will measure time, temperature, distance, capacity, and weight.

Practical Problems
97% Q. The student will identify the value of coins and bills.
74% T. The student will solve real-world problems involving whole numbers.
52% V. The student will solve money problems.
79% X. The student will interpret graphs, tables, and maps.

Grade 5 — Reading

Vocabulary
80% A. The student will acquire a basic vocabulary as determined by a specified word list.
95% C. The student will determine word meaning from a knowledge of word parts as used in a given text.

Reading Comprehension
71% D. The student will determine whether different selections have similar meanings.
57% E. The student will determine the main idea of a message.
86% F. The student will find information in a message.
75% G. The student will determine the causes and effects of events and actions.
74% H. The student will determine the logical generalizations which can be drawn from a message.

Logical Thinking
74% J. The student will recognize irrelevant and invalid statements.
<table>
<thead>
<tr>
<th>TABLE 5—Continued</th>
</tr>
</thead>
</table>

**Logical Thinking**

| 78% I. | The student will recognize fantasy, fact, and opinion in a message. |
| 63% J. | The student will recognize irrelevant and invalid statements. |

**Study Skills**

| 90% K. | The student will follow oral and written directions. |
| 79% M. | The student will use appropriate reference skills. |

**Grade 3 — Writing**

**Organization**

| 95% B. | The student will organize objects and information into logical groupings and orders. |

**Spelling, Punctuation, Capitalization**

| 76% G. | The student will spell correctly. |
| 61% H. | The student will punctuate correctly. |
| 82% I. | The student will capitalize correctly. |

**Grade 5 — Mathematics**

**Number Concepts**

| 94% A. | The student will count quantities. |
| 90% B. | The student will read and write numerals. |
| 63% C. | The student will round numbers. |
| 82% D. | The student will put numbers in order. |
| 73% E. | The student will determine equivalent forms of fractions, decimals, and percents. |

**Computation**

| 86% F. | The student will add whole numbers. |
| 78% G. | The student will subtract whole numbers. |
| 75% H. | The student will multiply whole numbers. |
| 53% I. | The student will divide whole numbers. |
TABLE 5--Continued

<table>
<thead>
<tr>
<th>Study Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>82% M. The student will use appropriate reference skills.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade 5 - Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
</tr>
<tr>
<td>80% A. The student will compose grammatically correct sentences.</td>
</tr>
<tr>
<td>85% B. The student will organize subjects and information into logical groupings and orders.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spelling, Punctuation, Capitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>75% G. The student will spell correctly.</td>
</tr>
<tr>
<td>56% H. The student will punctuate correctly.</td>
</tr>
<tr>
<td>95% I. The student will capitalize correctly.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade 8 - Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Concepts</td>
</tr>
<tr>
<td>91% B. The student will read and write numerals.</td>
</tr>
<tr>
<td>54% C. The student will round numbers.</td>
</tr>
<tr>
<td>45% E. The student will determine equivalent forms of fractions, decimals, and percents.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Computation</th>
</tr>
</thead>
<tbody>
<tr>
<td>95% F. The student will add whole numbers.</td>
</tr>
<tr>
<td>89% G. The student will subtract whole numbers.</td>
</tr>
<tr>
<td>83% H. The student will multiply whole numbers.</td>
</tr>
<tr>
<td>59% I. The student will divide whole numbers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>49% J. The student will add and subtract fractions.</td>
</tr>
<tr>
<td>60% K. The student will multiply fractions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decimals</th>
</tr>
</thead>
<tbody>
<tr>
<td>88% L. The student will add and subtract decimals.</td>
</tr>
<tr>
<td>56% M. The student will multiply and divide decimals.</td>
</tr>
</tbody>
</table>
TABLE 5—Continued

Measurement

42% O. The student will measure time, temperature, distance, capacity, and weight.

Practical Problems

72% T. The student will solve real-world problems involving whole numbers.
77% V. The student will solve money problems.
74% W. The student will solve measurement problems using metric and customary units.
92% X. The student will interpret graphs, tables, and maps.

Grade 8 - Reading

Practical Problems

53% A. The student will acquire a basic vocabulary as determined by a specified word list.
68% B. The student will determine word meaning from the way the word is used in a passage.

Reading Comprehension

70% E. The student will determine the main idea of a message.
73% F. The student will find information in a message.

Logical Thinking

62% I. The student will recognize fantasy, fact, and opinion in a message.
45% J. The student will recognize irrelevant and invalid statements.

Study Skills

73% K. The student will follow oral and written directions.
78% L. The student will identify appropriate sources for needed information.
71% M. The student will use appropriate reference skills.
TABLE 5—Continued

Grade 8 - Writing

Grammar and Sentence Composition

78% A. The student will compose grammatically correct sentences.

Supplying Information

86% D. The student will write for the purpose of supplying necessary information.
75% E. The student will write letters and messages using commonly accepted formats.
74% F. The student will fill out common forms.

Spelling, Punctuation, Capitalization

86% G. The student will spell correctly.
84% H. The student will punctuate correctly.
93% I. The student will capitalize correctly.


4. Needs Assessment

With the identification of values expressing "where we should be" and of indicators depicting "where we are now," need(s) can be determined. As stated earlier at the termination of the analysis of concerns and values, needs are determined as the differences between "where we are now" and "where we should be." The evidence presented
in the preceding analyses identified a general need for improvement in communications and mathematics in the elementary and middle grades. This need will vary somewhat among districts but even more greatly among schools within districts. A need statement framed around the concept of student performance rather than school or district performance will better reflect this variance. Such a need statement will also more readily lead to a dollar distribution formula for resolving the need than a statement based upon school or district performance. For these reasons, the need statement presented here will differ in level from the present position of the Performance Standards Section of the Department of Education in which compliance is expressed in terms of a school-program with a composite student performance percentage greater than 70%.  

In deriving a quantitative value for a statement of need framed around the concept of student performance, some important issues must be considered with respect to the state assessment program and the Minimum Student Performance Standards. The state assessment tests are composed of items. Performance on a group of items, usually four or five, determines performance on a skill. Performance on one or more skills determines performance on a standard. Mastery of a standard is defined to be the attainment of at least 70% of the items which comprise the standard and successful attainment of at least 50% of the
skills which comprise the standard. Considerable controversy exists over the arbitrariness of these percentages. For example, because of the large number of minorities who have failed the Functional Literacy Test based upon these criteria, this issue may well be resolved in the courts.

Almost all people embroiled in this controversy over the criteria of satisfactory performance on the state's Minimum Student Performance Standards can agree that the students with the greatest need are those with the least number of items attained, with the least number of skills attained, and with the least number of standards attained. The question of how to quantify "attainment" is the controversial issue drawing claims of arbitrariness.

Perhaps then in attempting to quantify a statement of need in terms of what percentage attainment of the standards is a justifiable need, these percentage quantifiers should not be considered to be cast in concrete. If the percentages were low enough so that only few students failed to attain most standards, little need would exist. Perhaps so little need would exist that justification of a strategy to resolve the need would be difficult. Whereas if the percentages were high enough to create a significant need, perhaps the estimated cost of resolving such a need would prohibit its realistic consideration. Recognition
should be made that needs exist above the minimum student performance standards also.

For these reasons two alternative needs will be presented here for consideration. Of course more could be considered, but for the purpose of this study two will suffice. After issues involving the arbitrariness of attainment percentages and the availability of dollars to meet the need can be better resolved, perhaps a singular need statement can be determined.

A statement of need would then be as follows:
All Florida public school students in grades three, five, and eight who are not mentally or physically prevented from doing so should achieve percentages of attainment on the Minimum Student Performance Standards of not less than 25% or 50% with respect to the state assessment tests in mathematics, reading, and writing.

Consideration can be given to this need statement for 25% attainment or for 50% attainment of the Standards. Obviously other percentages could have been selected based upon social acceptability, cost of funding, and other issues.

5. Formulation of Alternative Strategies to Resolve Needs

Alternative strategies could now be formulated for resolving the identified needs. These strategies could be financial in that they involve the distribution
of funds to school districts, or they could be non-financial. If financial, they could be general or categorical. If the funds were general, they would be a part of the major, generally unrestricted program for state support (F.E.F.P.). Categorical funds would be a minor part of the program for state support, would be targeted to a specific purpose, and would be restricted by law and/or rule. If the funds were either general or categorical, they could be fiscal-modified, client-modified, both fiscal- and client-modified, modified in some other way or unmodified. Fiscal-modified funds take into account the fiscal capacity or wealth of school districts. Client-modified funds take into account different classifications of students according to relative needs. In many states consideration might not be given to categorical funds because of their potential for disequalization. Because the Florida Education Finance Program is fairly well equalized, this potential is not great.

However, if these strategies were non-financial in nature, they could be legal, regulatory, or service oriented. Legal strategies would be specified in federal or state law. Regulatory strategies would be specified in the Federal Register or State Board of Education Rules. Service strategies would be accomplished through the assistance of the appropriate federal or state agencies.
The financial strategies could be generated from (1) theoretical models developed by the scholars of educational and public finance or by economists, (2) recommendations produced from the many recent state educational finance studies, (3) recent legislative or gubernatorial proposals for state educational finance reform or (4) existing state educational finance programs.

The non-financial strategies could be generated from (1) findings of educational research and development activities, (2) recommendations from recent studies or (3) current exemplary practices.

If one considers mathematics and communications skills for students in elementary and middle school grades, many potential strategies exist for resolving the identified needs. A sample of them, along with their classifications, are:

(A) Increasing the F.E.F.P. funding for grades K through 8 (financial, general, fiscal-client-modified)

(B) Creating a new F.E.F.P. program specially for mathematics and communications in the elementary and middle grades (financial, general, fiscal-client-modified)

(C) Creating a new F.E.F.P. program specifically for those students who qualify for mathematics and communications improvement in the elementary and middle grades (financial, fiscal-client-modified)
(D) Creating a categorical program targeted toward students who qualify for mathematics and communications improvement in the elementary and middle grades (financial, categorical, client-modified)

(E) Providing funds for an inservice training program in mathematics and communications for existing teachers of students in elementary and middle grades (financial, general or categorical, varying modifications)

(F) Providing assistance by means of Department of Education consultants (non-financial, legal or service oriented).

(A) Increasing the F.E.F.P. funding for Grades K through 8

If, for example, the funding cost factor for grades K through 3 were increased, it would not even be assured that more of an investment would be made in grades K through 3, much less that the funds would be targeted to the students with needs. If the present criterion of 80% of F.E.F.P. funds earned had to be expended on total school costs were applied to the basic programs, the present cost factor of 1.234 could be increased to 1.746 with no increase in actual dollars being spent on a statewide basis. This is because 113% of F.E.F.P. funds earned were expended in the program for grades K through 3 for 1976-77.\(^40\)

With the advent of the F.E.F.P. in 1973-74, an emphasis was placed on increasing the expenditures for
grades K through 3 as stated earlier. If deficiencies still exist, it is questionable that more across-the-board funds would solve the problem.

If needs were resolved after a period of several years during which the cost factor for grades K through 3 had been increased, justification might then exist to decrease it some as the overfunding would no longer be completely justified. If needs were not resolved, justification might also exist to decrease the cost factor since its effect might not have justified the extra funds. In either case, it would be politically difficult to reduce the cost factor after a period of several years since in all likelihood school districts would have institutionalized the additional F.E.F.P. revenue.

Now consider that the base student allocation is increased more than that determined necessary to offset increased program maintenance costs and that all other program cost factors, except possibly the one for grades K through 3, are changed only to reflect a net funding increase for the purpose of off-setting increased program maintenance costs. The net effect of these changes would be to increase funding for grades K through 9.

Analogous to the previous consideration of increasing the funding cost factor for grades K through 3, increasing the base student allocation would not even assure that more of an investment would be make in grades K through 9,
much less that the funds would be targeted to the students with needs. If the present criterion of 80% of F.E.F.P. funds earned had to be expended on total school costs were applied to basic programs, the final base student allocation of $765 for 1976-77 could be increased to over $1200 without any increase in actual dollars being spent on a statewide basis. This is because 127% of F.E.F.P. funds earned were expended in the program for grades K through 9 for 1976-77.41

Also analogous to the previous consideration of increasing the funding cost factor for grades K through 3, justification might eventually exist to decrease it. If needs were eventually resolved, the overfunding might no longer be completely justified. If needs were not resolved, justification might not exist to maintain it. However in either case it would be politically difficult to reduce the base student allocation to a level justified only by the increased cost of education over that period since in all likelihood school districts would have institutionalized the additional F.E.F.P. revenue. Policymakers would probably find the only viable alternative would be to hold the base student allocation constant for several years until program maintenance costs increased sufficiently to justify it.

Only one piece of evidence justifies this alternative, and even that can be shown to be doubtful. In Table
the composite percentages for all grades in both mathematics and communications show the highest combined percentages to be for the third grade. One reason which might be hypothesized for this is the higher funding cost factor for grades K through 3.

However other reasons for these high third grade percentages may also exist. It is more difficult to assess students in the early grades. It may have been more difficult to devise minimum student performance standards of equivalent difficulty for these younger students. Most of the early grades' curriculum emphasizes communications, thereby making assessment in mathematics difficult. Whatever the reason, conclusive evidence cannot be found indicating that the increased funding cost factor was it. For example, the cost per FTE student for grades K through 3 was $1009 for 1976-77, while the cost for grades 4 through 9 was $991. Even though 23.4% more is funded into the program for grades K through 3, only 1.8% more is actually being expended there than for grades 4 through 9. However, since 1974 more emphasis has been made at the state level in early childhood and elementary education.

For every dollar increase in the base student allocation, it would cost over half a million dollars for grades K through 3 and almost $700,000 for grades 4 through 9. Assuming that all other cost factors were to
be decreased to maintain a constant level of funding, an increase of only one dollar in the base student allocation would cost over $1.2 million for grades K through 9. When one considers that sufficient funds have not been appropriated for the past several years just to meet the department's request for maintenance increases, it appears doubtful that the additional funds necessary for significant increase for grades K through 9 could be attained. Given the existing economic projections, it would appear doubtful that such a broadside attack of a problem which could be solved with a targeted solution is either economically or politically feasible.

(B) Creating a new F.E.F.P. program specifically for Mathematics and Communications in the elementary and middle grades.

The existing basic education programs, namely, grades K through 3, 4 through 9, and 10 through 12, are comprised of curricula in the basic skills. It would be difficult to justify the creation of new basic programs to do what existing ones are not now doing.

The only idea meriting further consideration for this alternative might be a restructuring of the existing programs. For example, grades K through 3 and 4 through 9 might become K through 5 and 6 through 9; K through 3, 4 through 6, and 7 through 9; or K through 3 and 4 through 8 with 9 going up to join 10 through 12. If the funding
and accounting structure were more in line with the assessment structure of grades 3, 5, 8, and 11, determinations of cost effectiveness and funding cost factors would be greatly facilitated. However many of the same problems identified with alternative A would exist if significant increases in cost factors were being considered. In addition, elementary principals are strongly against many of the proposed grade restructuring proposals.

(C) Creating a new F.E.F.P. program specifically for those students who qualify for mathematics and communications improvement in the elementary and middle grades.

Essentially this alternative would create a new special program, although it would be of a different nature than the existing special programs in exceptional student, vocational, and adult education. This new program might differ from a categorical program only in the applicability of its funds to a cost factor, the district cost differentials, and required local effort dollars. Of course students would have to qualify for this program based on assessment criteria. If more flexibility in distributing dollars to improve the mathematics and communications achievement is desirable, then a categorical program should be considered. If, on the other hand, it might be more desirable to capture some of the required local effort dollars in funding for this purpose, then this alternative should be seriously considered. However some of the same
problems identified with alternative A would be applicable here also. Given the existence of the State Compensatory Education Program, it is assumed that flexibility is the preferred choice. Alternative D will present this same concept with flexibility. Since the potential for dis-equalization from categorical funds as presented in alternative D is not great, this alternative will not be considered further. However, if the disequalization potential was great, this alternative might become more viable than D. In this case, the cost analysis of funding projections might be similar to the analysis presented in that alternative.

(D) Creating a categorical program targeted toward students who qualify for mathematics and communications improvement in the elementary and middle grades

This approach to resolving needs for mathematics and communications skill improvement was utilized in the creation of the Basic Skills and Functional Literacy Compensatory Supplement in 1977 with an appropriation of $10 million. However political reality forced all school boards and superintendents to target these funds to eleventh graders who failed the Functional Literacy Test and thereby became ineligible to receive diplomas from high school. Many other students eligible for compensatory education programs were prevented from receiving the benefits of these funds. Forty-three (64%) school districts have
involved at least one other grade in their compensatory program. Although thirty-two (48%) districts have a program targeting on some students at or below the eighth grade, only $1,264,692 (13% of the state total) are supporting these programs.

The problem might now be reduced to one of reallocating more of these compensatory funds to elementary and middle grade children. The severe political need for eleventh grade compensatory education was created by a stipulation in state law requiring the mastery of basic skills and a satisfactory performance in functional literacy for graduation with an unqualified diploma. In addition, since E.S.E.A. Title I funds have supported programs primarily at the elementary levels, the availability of state compensatory funds permitted districts to support unmet secondary level needs.

Perhaps if a similar requirement had stipulated that students in the third, fifth, and eighth grades could not advance to the next respective grade, a political need would have been created which would have been severe enough to draw more funds to these grades. However this position is not being advocated here; it is only being used to illustrate how a critical need can be artificially created by policymakers.

The most viable solution appears to be one of alleviating the antecedent causing the severe political
need to target almost all of these funds to eleventh graders. This could obviously be accomplished by means of amending or repealing a part of the statute cited above. Of course such a move would not reduce the number of diplomas being earned by students who are not mastering basic skills and who are functionally illiterate in mathematics and communications. The criteria determining functional illiteracy are of course subject to considerable debate.

Many educators would agree that the problem of functional illiteracy in the eleventh grade is caused by the educational activities or lack of them prior to that grade. Preventing students from becoming functionally illiterate eleventh graders is a more desirable educational alternative than remediating them. When the immediate remediation problem is solved, the sounder approach of preventing the problem from happening can be pursued.

The most important and perhaps most difficult question is, how much will resolving the identified need of this study cost? Regardless of the derivation of funds, whether from reallocation from existing programs or from allocation of new dollars and regardless of the source of funds be they federal, state, or local, this question must be answered.

The best data for estimating cost will be that which most closely represents the program being costed.
In other words, empirical, actual cost data would be preferable to theoretical, estimated cost data. Florida cost data would be preferable to non-Florida cost data, all other things being equal. Cost data from state and locally funded programs would be preferable to data from federally funded programs. Programs meeting needs similar to the one identified in this study would provide more preferable cost data than that from other programs. Cost data in conjunction with assessment data indicating the degree to which needs are being met would be more preferable than other cost data. With these principles of cost estimation in mind, an analysis can now be made to estimate the cost of resolving the identified need.

Eight other states are known to have categorical programs of a compensatory nature. These are California, Maryland, Michigan, New York, North Carolina, Pennsylvania, Washington, and Wisconsin. Only two of these are known to possess an eligibility criterion involving the assessment of student achievement. California students are eligible for services provided by compensatory funds if they score below the median achievement in reading. Michigan students are selected from "the lowest achievers in basic cognitive skills" in grades 2 through 6 and from "among those with the lowest readiness for the acquisition of cognitive skills" in grades K and 1. The Michigan grades 2 through 6 students qualify if (1) they score one or more years
below grade level in computation or communication skills on a standardized test; (2) they demonstrate mastery of 40% or fewer of the reading or mathematics objectives on the statewide assessment battery; or (3) if neither of the above is available, it is the attested judgment of the school teacher or school official that the pupil needs such assistance. The Michigan grades K and 1 students qualify if it is the attested judgment of a school teacher or official with the proviso that available test information also be considered.  

The Florida E.S.E.A. Title I program has been meeting needs similar to the ones identified earlier. This program has been serving about 35% of the children who have had demonstrated basic skill deficiencies in reading in Title I eligible schools. For 1976-77 the total number of children was a little over 145,000; the total cost was approximately $60 million. The average amount spent per child was approximately $410. 

Students are selected for participation in the Title I program because of their low achievement test scores. A typical Title I student would make only one-half month progress for each month in the program. Eighty percent of the Title I students in 1976-77 were in a reading or reading-related component. About one-third of these students progressed at least one month for each month in the program, while the other two-thirds progressed
at least three-quarters of a month for each month in the program. Eleven percent of the Title I students were in a mathematics component. About 80% of these students progressed at least one month for each month in the program.

One major concern in developing a funding formula for this alternative is its impact on E.S.E.A., Title I comparability requirements. Congress is presently considering legislation which may soon alter the requirements for state compensatory programs with respect to E.S.E.A., Title I. However existing law and regulation involve the criteria of comparability, supplementation rather than supplantation, equitability, and coordination.

With respect to the criteria of comparability, a state compensatory program need not be identical to E.S.E.A., Title I, only similar. For example, it does not have to serve only low-income areas, to serve those children who are furthest behind, to include parent involvement or teacher-aid training requirements.

The criterion of supplementation rather than supplantation can be satisfied by:

1. distributing state compensatory funds according to the number of educationally deprived students enrolled in each school, which will permit the unmet needs from E.S.E.A., Title I funding to be met,

2. providing an equitable proportion of state compensatory funds to educationally deprived students
attending Title I as well as non-Title I schools according to objective criteria for the use of state compensatory funds, and

3. serving all educationally deprived students in a particular grade span with state compensatory funds and using Title I funds for a different grade span.

The criterion of equitability does not require school districts to favor low-income areas with respect to the distribution of state compensatory funds.

The criterion of coordination prohibits school districts from commingling state compensatory funds and Title I funds, but the funds may be used simultaneously.

The existing data for compensatory programs other than E.S.E.A., Title I are composed entirely of estimates for the 1977-78 year. Information on the state funded programs are summarized in Table 6, and information on locally and non-Title I federally funded programs are summarized in Table 7. Only those programs with both primary objectives and grade levels consistent with the identified need of this study are included in these tables.

If one wishes to conclude from this information what amount per pupil would be appropriate to fund adequately compensatory education needs as identified in this study, it would be extremely difficult for a number of reasons. First, these cost estimates per FTE students are based on estimated FTE students and budgeted dollars.
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<th>Grades</th>
<th>F.T.E. Students</th>
<th>F.T.E. Staff</th>
<th>Staffing Ratio</th>
<th>Number of Aides</th>
<th>Budget per F.T.E. Student</th>
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<td>both 8</td>
<td>83.9</td>
<td>0</td>
<td>47</td>
<td>0</td>
<td>$2,500</td>
<td>30</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>both 8</td>
<td>44</td>
<td>1</td>
<td>55</td>
<td>4</td>
<td>$34,400</td>
<td>625</td>
</tr>
<tr>
<td>Seminole</td>
<td>both 6, 7, 8</td>
<td>77.69</td>
<td>6</td>
<td>13</td>
<td>0</td>
<td>$89,880</td>
<td>1157</td>
</tr>
<tr>
<td>Suwannee</td>
<td>both 1, 2, 3, 5, 6</td>
<td>294.7</td>
<td>0</td>
<td>48</td>
<td>0</td>
<td>$10,500</td>
<td>36</td>
</tr>
<tr>
<td>Suwannee</td>
<td>both 8</td>
<td>20.2</td>
<td>1</td>
<td>20</td>
<td>3</td>
<td>$11,146</td>
<td>552</td>
</tr>
</tbody>
</table>
### TABLE 6—Continued

<table>
<thead>
<tr>
<th>District</th>
<th>Communications and/or Mathematics</th>
<th>Grades</th>
<th>F.T.E. Students</th>
<th>F.T.E. Staff</th>
<th>Staffing Ratio</th>
<th>Number of Aides</th>
<th>Budget</th>
<th>Budget per F.T.E. Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taylor</td>
<td>both</td>
<td>8</td>
<td>10.67</td>
<td>.75</td>
<td>14</td>
<td>1½</td>
<td>19,000</td>
<td><strong>$1781</strong></td>
</tr>
<tr>
<td>Volusia</td>
<td>both</td>
<td>8</td>
<td>76.21</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>26,731</td>
<td><strong>351</strong></td>
</tr>
<tr>
<td>Wakulla</td>
<td>both</td>
<td>7-10</td>
<td>13.34</td>
<td>.6</td>
<td>22</td>
<td>0</td>
<td>8,285</td>
<td><strong>621</strong></td>
</tr>
<tr>
<td>Wakulla</td>
<td>C</td>
<td>8</td>
<td>7.4</td>
<td>.5</td>
<td>15</td>
<td>0</td>
<td>6,668</td>
<td><strong>928</strong></td>
</tr>
<tr>
<td>Walton</td>
<td>M</td>
<td>8</td>
<td>10.0</td>
<td>1.6</td>
<td>6</td>
<td>1</td>
<td>2,000</td>
<td><strong>200</strong></td>
</tr>
<tr>
<td>Washington</td>
<td>both</td>
<td>3</td>
<td>1.44</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,000</td>
<td><strong>694</strong></td>
</tr>
<tr>
<td>Washington</td>
<td>both</td>
<td>5</td>
<td>2.19</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2,500</td>
<td><strong>1142</strong></td>
</tr>
<tr>
<td>Washington</td>
<td>both</td>
<td>8</td>
<td>4.32</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4,500</td>
<td><strong>1042</strong></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td><strong>2,412.154</strong></td>
<td><strong>59.611</strong></td>
<td><strong>17</strong></td>
<td><strong>349.75</strong></td>
<td><strong>$1,264,692</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data are summarized from State Compensatory Education Programs, FY 1977-78, Program Plan, pp. 5-7, as submitted by all Florida school districts.

### NOTES

1. If data for separate communications and mathematics components in a district can be identified, they are listed separately.

2. If data for individual grades in a district can be identified, they are reported separately. If data for one or more of the upper grades within the scope of this study were commingled with data for grades above the scope of this study, data for all of these grades were reported. Data for individual schools could be identified for most districts, but only district aggregate data are reported.

3. In a few cases data for some items were disaggregated while data for other items were aggregated. In that event, it appeared appropriate to prorate the aggregated data, the following principles were used:

   - F.T.E. staff were prorated based upon F.T.E. students.
   - Numbers of aides were prorated based upon F.T.E. staff.
   - Budget amounts were prorated based upon F.T.E. staff if largely composed of salary dollars, otherwise F.T.E. students.

4. Numbers of aides include both paid and volunteer aides.

5. The state total staffing ratio is based only upon F.T.E. students for which a corresponding F.T.E. staff amount was available.

6. One F.T.E. student equals 900 hours of instruction per year. One F.T.E. staff equals a teacher providing services for the equivalent amount of time required under a standard contract. Only those staff compensated from state compensatory funds are listed.
### TABLE 7

1977-78 SCHOOL DISTRICT REMEDIAL PROGRAM ESTIMATED DATA

<table>
<thead>
<tr>
<th>District</th>
<th>Program Name</th>
<th>Grades</th>
<th>Students</th>
<th>F.T.E. Staff</th>
<th>Staffing Ratio</th>
<th>Budget</th>
<th>Budget per F.T.E. Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broward</td>
<td>Middle School Reading Program</td>
<td>6,7,8</td>
<td>2500.0</td>
<td>100.0</td>
<td>25</td>
<td>$1,750,000</td>
<td>$700</td>
</tr>
<tr>
<td>Citrus</td>
<td>Remedial Reading</td>
<td>2,3,4</td>
<td>20.0</td>
<td>2.0</td>
<td>10</td>
<td>24,160</td>
<td>1208</td>
</tr>
<tr>
<td>Duval</td>
<td>Remedial Services Reading</td>
<td>6 &amp; 7</td>
<td>1812.0</td>
<td>18.0</td>
<td>101</td>
<td>635,434</td>
<td>350</td>
</tr>
<tr>
<td>Duval</td>
<td>Pilot Project</td>
<td>K - 5</td>
<td>499.4</td>
<td>4.0</td>
<td>125</td>
<td>325,948</td>
<td>653</td>
</tr>
<tr>
<td>Gilchrist</td>
<td>Remediation within Regular Classroom</td>
<td>K - 11</td>
<td>65.0</td>
<td>10.0</td>
<td>7</td>
<td>45,500</td>
<td>700</td>
</tr>
<tr>
<td>Liberty</td>
<td>Remediation in Basic Skills</td>
<td>K - 8</td>
<td>55.5</td>
<td>5.8</td>
<td>10</td>
<td>74,291</td>
<td>1137</td>
</tr>
<tr>
<td>Okaloosa</td>
<td>Follow Through</td>
<td>K - 3</td>
<td>400.0</td>
<td>0.0</td>
<td>0</td>
<td>226,906</td>
<td>567</td>
</tr>
<tr>
<td>Pinellas</td>
<td>IMTS Clearwater Comprehensive Middle School</td>
<td>5 - 8</td>
<td>196.0</td>
<td>3.0</td>
<td>65</td>
<td>84,570</td>
<td>431</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>Basic Skills</td>
<td>3 - 11</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>185,216</td>
<td>535</td>
</tr>
<tr>
<td>Taylor</td>
<td>Pre-vocational Compensatory Reading and Mathematics</td>
<td>7 &amp; 8</td>
<td>28.4</td>
<td>1.43</td>
<td>20</td>
<td>26,970</td>
<td>950</td>
</tr>
</tbody>
</table>

Source: Data are summarized from State Compensatory Education Programs, FY 1977-78, Program Plan, pp. 3 and 4, as submitted by all Florida school districts.

**NOTES**

1. All programs above are locally and non-Title I federally funded.

2. One F.T.E. student equals 900 hours of instruction per year. One F.T.E. staff equals a teacher providing services for the equivalent amount of time required under a standard contract.
Second, the variances in staffing patterns and dollars per FTE student are significant. Third, no assessment can be made with these estimates regarding what effectiveness would be achieved for the dollars invested. In other words, the needs which the dollars are going to meet are indeterminate. Fourth, most school districts, especially the larger more urban ones, are giving higher priority to their eleventh graders whose graduation is in jeopardy. Because of this, compensatory education at or below the eighth grade is only being partially funded in many school districts. Hence these estimated dollars per FTE student may not be intended to meet adequately the needs of students at or below grade eight.

All of these weaknesses can be eliminated or reduced when actual data for 1977-78 becomes available in an annual report on compensatory education during the fall of 1978. All school district data will then be actual rather than estimated or budgeted. This report will include the results of either criterion- or norm-referenced evaluations which will permit an assessment to be made of the effectiveness achieved for the dollars expended. Even if the dollars expended were insufficient to meet adequately the needs of students at or below grade eight, the degree to which these needs were not being met can be determined. Hopefully the variances in staffing patterns
and dollars per FTE students can be reduced by classifying the data into groups based upon effectiveness achieved.

For the 1977-78 year, data will be collected on all school district compensatory programs. In addition to criterion- or norm-referenced evaluations and identification by each district of the program(s) found to be most successful, detailed financial data will also become available for analysis.

Compensatory expenditure data will be available at the school level for each individual project by the following types of projects:

1. Florida Compensatory Education Program
2. Special local compensatory programs
3. E.S.E.A., Title I, low income
4. E.S.E.A., Title I, migrant
5. E.S.A.A.
6. Other federally funded compensatory programs

For each of these projects the expenditure data available will be for the following functions/objects:

1. Instruction, salaries
2. Instruction, employee benefits
3. Instruction, purchased services
4. Instruction, materials and supplies
5. Instruction, other expenses
6. Instruction, capital outlay
7. Pupil Personnel
8. Instructional Media
9. Instruction and Curriculum Development
10. Instructional Staff Training
11. Board of Education
12. General Administration
13. School Administration
14. Facilities Acquisition and Construction
15. Fiscal Services
16. Food Services
17. Central Services
Although the 1977-78 annual reports on compensatory education will obviously provide an improved database for funding analysis purposes, the estimated data in Table 6 can produce some information on the amounts budgeted per FTE student for 1977-78. Since salaries are the greatest contributor to the cost per student, the numbers of full-time equivalent staff (teachers), the ratios of FTE students to FTE staff, and the numbers of aides will be analyzed in an attempt to determine variations in the amounts budgeted per FTE student from state compensatory funds.

The numbers of students not attaining 25% or 50% of the Minimum Student Performance Standards can be determined by grade level for each standard. Since the estimated state compensatory education program data are only available for some districts by grade and for only a few districts by mathematics or communication programs, the data on students have been aggregated in Table 8 to a grade by component level.

Obviously duplication will occur in Table 8 with students below the 25th and 50th percentiles respectively in one or more of the components of mathematics, reading, and writing. The funding estimates to resolve the need identified in this study will therefore be based on the
TABLE 8
NUMBER AND PERCENTAGE OF STUDENTS NOT ATTAINING 25% AND 50% RESPECTIVELY OF THE MINIMUM STUDENT PERFORMANCE STANDARDS BY GRADE AND BY MATHEMATICS, READING, AND WRITING FOR 1977-78

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quartile Group</th>
<th>Mathematics</th>
<th>Reading</th>
<th>Writing</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third</td>
<td>25%</td>
<td>2148</td>
<td>9670</td>
<td>8596</td>
<td>20,415</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>9670</td>
<td>18,266</td>
<td>26,862</td>
<td>54,798</td>
</tr>
<tr>
<td>Fifth</td>
<td>25%</td>
<td>5271</td>
<td>8433</td>
<td>9487</td>
<td>23,191</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>17,920</td>
<td>20,028</td>
<td>16,866</td>
<td>54,814</td>
</tr>
<tr>
<td>Eighth</td>
<td>25%</td>
<td>10,383</td>
<td>23,362</td>
<td>6489</td>
<td>40,234</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>32,447</td>
<td>42,830</td>
<td>16,872</td>
<td>92,149</td>
</tr>
</tbody>
</table>

Source: Performance Standards and Personnel Data Section, State Report of District Standards Achievement.

number of times students belong to the group in need of compensatory education, not on just the number of students in the need group regardless of whether they were in this group once, twice, or thrice.

For analysis purposes it is unfortunate that compensatory program estimated data are not available by component. Because of this, it is not generally possible to determine whether the FTE students reported will be receiving compensatory education in one, two, or three of
the components. Obviously the more components these students are to be in, the greater the cost per FTE student would be. Only two districts, Clay and Nassau, have reported estimates which permit a separate determination of costs per FTE student for communications and mathematics. These differences for Nassau are insignificant for both the 3rd and 5th grades' and the 7th, 8th, and 9th grades' programs. However for Clay the 3rd and 5th grades' program has a 15% difference, while the 9th grade's difference is quite large due mainly to the different staffing patterns.

Analyzing the state compensatory education program data for grade three only produces an average cost per FTE student of $339. However only three districts have provided data for just grade three, namely Gulf, Marion, and Washington. The range of costs per FTE student is from $69 to $694, which for only three districts is a considerable range. The differences in cost among these districts can be attributed to varying sources of support and varying program structures. Until effectiveness data are available to judge the results being attained for these varying budgeted amounts, a valid assessment cannot be made to determine which one would be the most appropriate for state level funding considerations. Based upon these data, it is difficult to conclude what amount should be budgeted for third grade compensatory education.
Since six districts have commingled their data for grades three and five, it appears that this group is worth consideration. Analyzing the state compensatory education program data for grades three and five combined produces an average cost per FTE student of $510. This group includes Bay, Clay, Dixie, Glades, Lee, and Nassau. Both Clay and Nassau report budgeted costs for communications and mathematics separately which do not exceed a 15% difference. The only districts using staff other than aides have the two most expensive programs, namely Bay ($991) and Glades ($1093). The only districts using just aides have the three least costly programs, namely Dixie ($309), Lee ($406), and Nassau ($314 & $326). Clay shows no staff being supported by state compensatory funds, and its budgeted costs are between these other two groups ($908 & $790). It could be concluded that for third and fifth grade programs, it might cost about $1000 if certificated staff are being used while only about $300 to $400 if only aides are being used. Unfortunately it cannot be determined from the data whether these amounts per FTE student are for the instruction of just one, two, or all three of the components, with the exception of Nassau which shows about $300 for mathematics and communications separately.

Analyzing the state compensatory education program data for grade five only produces an average cost per FTE
student of $791. But the two districts with staff, Columbia and Highlands, are spending $1400 and $447 respectively, a difference of almost $1000 per FTE student. Orange County, using just aides, is spending $865 per FTE student. The three districts with neither staff nor aides being supported with state compensatory funds, Gulf, Marion, and Washington, are spending $49, $461, and $1142 per FTE student respectively, a range of almost $1100. The differences in cost among all of the above districts can be attributed to varying program structures and varying sources of support for these programs. Until effectiveness data is available to judge the results being obtained for these varying budgeted amounts, a valid assessment cannot be made to determine which one would be the most appropriate for state level funding considerations. Based upon these data, it is difficult to conclude what amount should be budgeted for students in the fifth grade for compensatory education.

Analyzing the state compensatory education program data for grade eight only produces an average cost per FTE student of $597. Eight districts, Clay, Gilchrist, Lafayette, Lake, Lee, Madison, Polk, and Wakulla, are using staff with no aides; their average cost per FTE student is $649. Nine districts are using a mixture of staff and aides for an average cost per FTE student of $332; these districts are Bay, Dixie, Franklin, Glades, St. Lucie,
Suwannee, Taylor, and Walton. Four districts, Leon, Martin, Orange, and Putman, have used aides only in their program for an average cost per FTE student of $579. Five districts, Clay, Gulf, Marion, Volusia, and Washington, have not involved any staff supported by state compensatory funds in their programs for an average cost per FTE student of $360. One can conclude from these data that using either certificated staff or aides, about $600 should be budgeted for each FTE student. However if both certificated staff and aides are used or if neither certificated staff nor aides are used, the budget per FTE student need only be $300 to $350. Unfortunately these two concluding statements appear to be somewhat contrary to each other.

Of the preceding four analyses of state compensatory education program estimated data, only that for grades three and five combined produced a conclusion worthy of use in estimating funding requirements. However if one wishes to contrast this conclusion with the information available for grades three and five separately, even it begins to appear questionable. For example, if certificated staff are used in the program, grades three and five combined have a budget of about $1000 per FTE student whereas grade three alone yields no amount and grade five alone data for just two districts has a range of $1000. If only aides are used in the program, grades three and five combined produce an amount of about $300 to $400 per
FTE student for either or both components whereas grade three alone yields no amount and grade five alone yields $865. If neither staff nor aides are being supported by state compensatory funds, grades three and five combined produce an amount of about $800 to $900, whereas grade three alone has a range of 10 to 1 magnitude for only three districts and grade five alone has a range of 23 to 1 magnitude for only three districts.

Upon analysis of the other data for grade groups other than those above produces no clarifying evidence of the budgeted cost per FTE student for grades three, five, or eight. Analyzing the data available in Table 7 for locally and non-Title I federally funded remedial programs yields no conclusive evidence when integrated into the data for Table 6 for state compensatory education programs.

Only one conclusive result appears to be produced by all of these data. It appears that the cost per FTE student for mathematics, reading, and writing combined would be not less than approximately $300. For all students in the state compensatory education program estimated data at or below grade eight, the total number of FTE students is about 2400. This represents about 27,500 students. Therefore the districts are placing their grade eight and below students in the state compensatory education program for about 2400/27,500 or 8.76% of a school year. However state compensatory education program funds were only made
available for the last half of the 1977-78 school year. Since these funds will be available for all of 1978-79, it will be assumed that for the same number of students, the FTE will be twice the 1977-78 amount. Therefore the percentage which FTE students are of students for 1978-79 should be about 17.5%.

Of the students in Table 8 who are not attaining 25% and 50%, respectively, of the Minimum Student Performance Standards for 1977-78, only 17.5% of them would be FTE students. These FTE students along with the corresponding projected funding dollars at the minimum of $300 per FTE student for each grade are shown in Table 9. For the need criterion of 25%, the total estimated cost is a little less than $4 1/2 million. For the need criterion of 50%, the total estimated cost is a little more than $10 1/2 million. The estimated cost to meet the 50% criterion of need is about 2 1/2 times the estimated cost to meet the 25% criterion of need. This ratio would be constant for any amount per FTE student since it represents the ratio of students in the groups below the first quartile and below the first and second quartiles combined.

These estimates for 1978-79 are based upon a number of assumptions for the 1977-78 data, the most important of which are that:
### TABLE 9
NUMBER OF FTE STUDENTS NOT ATTAINING 25% AND 50% RESPECTIVELY OF THE MINIMUM STUDENT PERFORMANCE STANDARDS BY GRADE AND BY MATHEMATICS, READING, AND WRITING FOR 1977-78

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quartile Group</th>
<th>Mathematics</th>
<th>Reading</th>
<th>Writing</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third</td>
<td>25%</td>
<td>376</td>
<td>1692</td>
<td>1504</td>
<td>3572</td>
</tr>
<tr>
<td>Fifth</td>
<td>25%</td>
<td>922</td>
<td>1475</td>
<td>1660</td>
<td>4057</td>
</tr>
<tr>
<td>Eighth</td>
<td>25%</td>
<td>1817</td>
<td>4088</td>
<td>1135</td>
<td>7040</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>14,669</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quartile Group</th>
<th>Mathematics</th>
<th>Reading</th>
<th>Writing</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third</td>
<td>50%</td>
<td>1692</td>
<td>3196</td>
<td>4700</td>
<td>9588</td>
</tr>
<tr>
<td>Fifth</td>
<td>50%</td>
<td>3135</td>
<td>3504</td>
<td>2951</td>
<td>9590</td>
</tr>
<tr>
<td>Eighth</td>
<td>50%</td>
<td>5677</td>
<td>7494</td>
<td>2952</td>
<td>16,123</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>35,301</td>
</tr>
</tbody>
</table>

**Source:** The respective percentages of attainment from Table 8 are multiplied by 1976-77 full-time-equivalent students in the basic programs for each respective grade.

1. the criteria for mastery of the Minimum Student Performance Standards will not change significantly;

2. changes in the relationships among test items and standards, the combination of which are in their first year of full-scale implementation, will not cause significant changes in the student mastery distribution;

3. the staffing relationships and the proportion of staff being supported by state compensatory education program funds will not change significantly;
4. the proportion of student FTE to total number of qualified students is about 17.5%;

5. the effectiveness results when available will show a reasonable improvement in achievement for the dollars budgeted; and

6. the proposed programs which were budgeted on funds distributed for the last half of the 1977-78 school year would be doubled if funds had been made available for the entire school year.

Based upon the existing state compensatory education program funded for 1977-78 for $10 million with an appropriation of $26.5 million for 1978-79, it would certainly appear that this alternative is both politically and economically feasible. Social feasibility may be affected by legal challenges to the criteria for mastery of the Minimum Student Performance Standards. The cost effectiveness of this alternative cannot be determined until after the 1977-78 data become available in the annual report in the fall of 1978.

(E) Providing funds for an inservice training program in mathematics and communications for existing teachers of students in elementary and middle grades

Presently $5 for each full-time equivalent student of F.E.F.P. revenue must be spent on an inservice training program for school district staff. During 1976-77, $9,836,055 were spent by school districts on inservice training. If inservice training is a viable alternative to improving the instructional program in the schools, and if such improvement would lead to a corresponding
improvement of student achievement as evidenced by assessment test results, then inservice training is a viable alternative for decreasing student deficiencies in learning. Assuming this hypothesis possesses some degree of validity, policymakers should be very interested in providing more inservice training for teachers in the basic skills instructional area. Naturally the training should be targeted to those curricula and grade levels where student deficiencies are greatest.

However serious consideration of additional funding might be doubtful. In all likelihood when policymakers recognize inservice training of teachers as a viable method of improving student learning where deficiencies exist, provision will be made for a part of the $5 for each FTE student to be used strictly for inservice training of classroom teachers in the basic skills area. Although such a provision might be an auditor's nightmare, it would be easily enacted by the policymakers. Thus reallocation of existing funds is the most probable policy outcome for this alternative.

(F) Providing assistance by means of Department of Education consultants

Beginning in 1978, the Division of Public Schools started conducting program compliance and performance audits of each school district. Two of the areas of study by teams of division consultants are the early childhood
and elementary along with the middle and secondary education programs. These teams reviewed the programs of as many deficient schools as possible in each district for a two week period, along with several other schools which were not necessarily deficient. It is expected that one result of this review will be the implementation by the district and its schools of the recommendations made by the visiting team to remedy identified deficiencies. A possible second result will be additional technical assistance from the department for the same purposes. Although staff may not be adequate in numbers for this function other more conventional means of providing technical assistance exist also. These would include but not be limited to conferences, workshops, and visitations.

For the 1978-79 school year, a dozen to fifteen school districts will be scheduled for a program compliance and performance audit. Although staff support for these audits is obtained through the reallocation of existing funds, the legislature has shown its strong support by increasing the Division's travel budget by almost $100,000 for the purpose of conducting these audits. Thus this alternative, which could be implemented by Division policy, has the support of the policymakers. This alternative does appear to be socially, economically, and politically feasible.
7. Findings and Conclusions

Viable alternatives have been identified which would improve the ability of the state's educational system to bring public school students up to minimal standards of achievement. Of the alternatives considered, only D, E, and F are worth further consideration. Only alternative F involving departmental assistance could be implemented without changes in statutes, although if implemented in conjunction with program compliance and performance audits it would obviously have legislative support.

Alternatives D and E differ significantly in their approach and would require legislation for implementation. It would be quite likely that variations of each could be enacted in the same session. Both alternatives appear to have legislative sentiment based on current statutes and recent political interests.

An accountability determination can be made of the results being achieved for the resources being invested for each of these viable alternatives. The evaluation might not be able to discriminate between the differential results being obtained by two or more of these alternatives if the design measured only changes in student achievement.

The ultimate questions to be answered might be as follows:
1. How many public school students in grades three, five, and eight who were in the first quartile or the first and second quartiles combined in attainment on the Minimum Student Performance Standards with respect to the state assessment tests in mathematics, reading, and writing can improve their achievement in one year enough to exceed the first quartile or the first and second quartiles combined respectively?

2. By what amounts did those students who did not exceed the first quartile or the first and second quartiles combined respectively improve their achievement in one year?
R. VOCATIONAL APPLICATION

The second application of the planning system assesses needs in vocational education and determines the most likely educational finance methods and means to resolve these needs. The needs are derived from the discrepancies between projected occupational demand and projected occupational supply.

1. Goal Identification

Florida has identified seven goals for education. The scope of the state's commitment to public education and priorities of effort with respect to these goals are presented in Education Policy for the State of Florida. A status analysis of enrollments and expenditures with respect to these goals, along with projections into the future, is presented in Analysis of Projected Enrollments and Expenditures by Goal for Public Education in Florida in 1974-75, 1980-81, and 1985-86. In other work being done by the state and its 67 school districts involving the mission of comprehensive planning, additional issues have been delineated with respect to these goals.51

Three of these goals; namely, Basic Skills, General Education, and Vocational Competencies, encompass the scope of the K-12 public school programs. The order of presentation indicates the priority among the goals. More than $2
billion was expended during 1976-77 for these three goals in K-12 public schools. Since such a large amount of money would appear to justify careful consideration in its allocation, it is within the boundaries established by these three goals and K-12 public school programs that this study will be principally concerned.

These three goals are:

GOAL 1. Basic Skills. All Floridians must have the opportunity to master the basic skills for communication and computation (listening, speaking, reading, writing and arithmetic). Basic skills are fundamental to success.

GOAL 2. General Education. All Floridians shall have the opportunity to acquire the general education fundamental to career and personal development and necessary for participation in a democratic society. This includes skills, attitudes and knowledge for general problem-solving and survival, human relations and citizenship, moral and ethical conduct, mental and physical health, aesthetic, scientific and cultural appreciation, and environmental and economic understanding.

GOAL 3. Vocational Competencies. All Floridians shall have the opportunity to master vocational competencies necessary for entry level employment by the time they leave full time education. For persons who continue formal education through advanced or professional programs, vocational competencies will be in areas of professional employment. Vocational education shall be continuously reviewed to assure that Florida's needs for workers are met and that individuals can secure further training needed for career advancement.

A concern within the scope of GOAL 3 is the ability of the state's educational system to meet occupational demands.
2. Analysis of Concerns, Values, and Expectations

The Legislature stated its intent to have the Department of Education identify concerns and needs in 1976 when it said that

The Commissioner shall be responsible for all planning functions for the Department, including . . . indicators that are used to . . . identify areas of concern and need . . . (Sect. 229.555 (1)(a), F.S.)

A limited analysis can be made of the educational, political, and social concerns and values within the scope of the Vocational Competencies Goal. Concerns are defined to be unrefined, unevaluated expressions that emanate from individuals or groups in their attempts to identify needs. Values are defined to be expressions of belief or conviction about what should exist rather than what does. If these expressions about what should exist rather than what does are more quantitative in nature, they are defined to be expectations. As concerns become more refined and more evaluated expressions, they evolve into values and expectations and ultimately statements of need. Therefore value and expectation statements rather than concern statements will predominate in this analysis.

The Florida Legislature in 1970 stated its intention to have the products of the state's vocational education program trained in an employable occupational field when it said that
The State Board of Education shall adopt regulations setting forth minimum requirements for a comprehensive vocational education program, and shall adopt procedures for determining the extent to which such minimum requirements are being met. Such requirements shall include examination of the employment performance of program participants as well as standards of educational output, with particular emphasis on job placement and satisfactory performance in employment. (Sect. 233.0682, F.S.)

The United States Congress provided for labor market information for human resource planning in the Vocational Education Amendment of 1968 when it authorized an appropriation of

... no more than $5 million each fiscal year for the transfer to the Secretary of Labor to finance national, regional, state, and local studies and projections of manpower needs ... (Sect. 103 (A)(1))

More recently the Congress reasserted its desire for labor market information in the Comprehensive Employment and Training Act of 1973 when it required the Secretary of Labor to

... develop a comprehensive system of labor market information on a national, state, local, or other appropriate basis, which shall be made publicly available in a timely fashion. (Title II, Part B, Section 312)

The Federal Register further stipulates in the most recent rules and regulations for state vocational education programs that

The State occupational information coordinating committee, with funds available to it from the National Occupational Information Coordinating Committee shall implement an occupational
information system in the State which will meet the common needs for the planning for and operation of programs of the State Board assisted under this Act and of the administering agencies under the Comprehensive Employment and Training Act. (Sect. 104.123 (A), Vol. 42, No. 191, F.R.)

and

The five-year State plan shall include an assessment of current and future needs for workers (job skills) within the State and, where appropriate, within the pertinent region of the country. This assessment shall reflect the latest available data of present and projected employment, including the data available from the State occupational information coordinating committee. (Sect. 104.183 (A) & (B), Vol. 42, No. 191, F.R.)

The Florida Occupational Information Coordinating Committee is composed of representatives from the Department of Education and the Department of Commerce. It is called the Florida Occupational Information and Delivery System Advisory Committee. It oversees an annual Occupational Information and Delivery System Study. The Study is composed of three components: projections of occupational demand, projections of occupational supply from both institutional output and migration, and an interphasing of the occupational demand and supply components.53

The projections of occupational demand will become the expectations in this study for the purpose of identifying needs. The projections of occupational supply will become the status indicators. The results obtained upon interfacing the supply and demand variables will identify the needs.
Since very little occupational data existed other than the decennial census, it was not possible to obtain the final product, manpower demand by occupation, without first gauging the growth or decline in the industries which utilize each of those occupations. The starting point in the process was assembling an industry by industry historical series of wage and salary employment for the state and each of ten districts from reports of employment in firms covered under the Florida Unemployment Compensation Law. The series encompassed approximately 200 industries for the years 1960-1974. Industries are described as in the 1967 Standard Industrial Classification Manual. Regression equations were then developed for each industry by means of the ECON 01 multiple regression computer program. Several independent variables were utilized, the most generally suitable of which was the historical series of national employment for each industry. However, it soon became clear that even when statistical tests indicated accuracy or "a good fit," the projections procedure could by no means be mechanical. At various points in the process it was essential that judgment be brought to bear, both in estimating the future rate of change in industrial activity, and in checking the internal consistency of the projections. After considering the computer regression projections, population growth, national employment projections and the opinions of those familiar with industrial trends, wage and salary employment
projections to 1985 for the state at the complete 200-
industry detail level were agreed upon.\textsuperscript{54}

Next, industry projections were made for the dis­
tricts in lesser detail taking care to ensure that the
district projections summed to the state. The decision to
do state projections first and then disaggregate them to
districts rather than project each component in each dis­
trict individually was based on the assumption that the
larger the economic area, the more adequate and reliable
are the projections that can be made.

The basic procedure for bridging the gap between
industries and occupations is set forth in the Bureau of
Labor Statistics publication, \textit{Tomorrow's Manpower Needs}
and its supplements.\textsuperscript{55} Occupational projections were pre­
pared using the industry-occupation employment matrix ap­
proach. The matrix is a table showing the occupational
pattern of each industry, i.e., the ratios of employment
in each occupation to total employment in that industry.
The 1970 base period industry-occupation employment
matrices for the state, districts and SMSA's were developed
in cooperation with Bureau of Labor Statistics as a part of
the National/State Industry-Occupation Matrix System. Each
matrix covers approximately 400 occupations cross-classified
by 200 industry sectors. In the fall of 1978 the number of
occupations will increase to 1200.
Individual matrices were available for the state, districts and all SMSA's with a 1970 population of 250,000 or more. The 1974 estimates and 1985 projections were developed following the "Method B" procedure outlined in Tomorrow's Manpower Needs. Briefly, the 1970 State occupational patterns were updated to 1974 and projected to 1972 and 1985 by applying a national change factor ratio computed from corresponding cells in the Bureau of Labor Statistics National Matrix. The resulting staffing patterns were applied to their respective industry employment estimates and projections. Occupational employment levels were then computed for 1974, 1972, and 1985 by aggregating across industries.

For industries with a small 1970 data base and where substantial growth occurred between 1970 and 1974 or was projected during the 1974-85 period, the 1970 occupational staffing pattern was often judged to be inadequate to represent the larger 1974, 1982, or 1985 employment. Where this occurred, the national occupational staffing pattern for the industry was used instead.

The replacement demand data are estimates of the average number of workers that will be required each year during the projection period to replace workers who die, retire, or leave the labor force for reasons such as disability or family responsibilities. These estimates are based on separation rates by age and sex derived from
national mortality and working life tables, which are applied to the age and sex distribution of Florida's labor force by occupation. The resulting separation rate for each occupation was applied to interpolated employment for the 1974-85 time period. Statewide rates were used in estimating replacement needs for districts and SMSA's.

It should be emphasized that while every effort was made to ensure the reasonableness of the data, their best use will be as indicators of trend rather than as absolute numbers. In particular, the mechanical processes of the system tend to diminish in reliability for small numbers and they should be used with caution.

It should be obvious that the accuracy of projections cannot exceed the accuracy of the input. In this regard the following assumptions must be made:

That the historical employment series is correct, i.e., that industries are properly classified, counted in the correct geographic area, etc. (The series used contained data only for the month of March. This factor was borne in mind when projecting for those industries affected by seasonality.)

That the independent variables used in regressions and as indicators of trend, themselves projections, are reliable.

That the 1970 Census is accurate, i.e., that the factors used to inflate wage and salary employment to total employment were appropriate; and that the allocated and not specified industries and occupations were distributed in such a way that distortions were not introduced.

That Florida's staffing patterns will change in the same manner as the nation's.
That labor force separation rates used are accurate. (Assumptions underlying these rates are set forth in the BLS publication, Tomorrow's Manpower Needs, Supplement No. 4.)

And that growth will occur in such a way as to make straight-line interpolations meaningful.58

3. Analysis of Present Status

The Bureau of Vocational Planning and Budgeting of the Florida Department of Education developed a cross reference system to relate occupational codes to Office of Education program codes. This developmental activity included Department staff from the Commissioner's Office, the Division of Community Colleges, and other bureaus of the Division of Vocational Education. This system was based on Supplement III of Tomorrow's Manpower Needs. The Occupational Code Conversion System published jointly by Division of Employment Data and Research, and the California Manpower Management Information System was also used as an additional reference.59

Through the use of the cross reference system, occupations which relate to vocational education programs were extracted from the Department of Commerce data. While some of these occupations are unique and relate on a one-to-one basis with vocational education programs (i.e., registered nurse), other occupational titles represent broad occupational groupings. For example, "therapists" represents a number of more specific occupations such as
physical therapist, inhalation therapist, etc. Also, such job categories as "secretary" may include persons from a number of business education programs.

The public sector vocational output was developed from existing data in the Florida Vocational Education Information System (FVEIS). Output was derived for each U.S.O.E. Handbook VI program classification to the sixth digit level. Output was defined as those students completing vocational programs and being employed or available for employment. Comprehensive Employment Training Act (CETA), adult migrant, and apprenticeship students in vocational programs in Florida public schools are included.

Percentages were developed from responses made by former students on the vocational education follow-up survey conducted during February, 1976, on students completing preparatory programs during the school year 1974-75. A person was considered available when responding as either employed or seeking employment. Specifically excluded were persons indicating they were unemployed and not seeking work, or continuing their education full-time.

The percentage of persons responding as being available, of all respondents, was applied to the preparatory program completions reported during 1975-76, as follow-up data were not available on these students at that time.
In projecting vocational program output, the following premises were developed:

1. Projected increases or decreases in output would be accomplished within those systems presently offering a specific training program rather than by reassignment of a training program to a different delivery system, although it is expected that some changes of this type will occur.

2. The output from training programs should not exceed 100% of the average annual expansion and replacement needs.

3. Projection of increased output in job titles for which little or no training had been previously offered would be treated conservatively pending closer scrutiny of potential reasons for such low levels of activity. Increased output from programs of that nature would be limited to 25% of the projected labor market demand.

4. Achievement of the 1982 objectives would be accomplished in annual stages during the 1978-1982 time span. The quantity of training output required may increase, decrease, or remain constant when compared with the 1976 experiential data.

5. A scale would be developed and applied to the experience-based output (1976) in order to derive projected outputs for 1982. The adopted scale is displayed below.

<table>
<thead>
<tr>
<th>1976 Vocational Output (In % of Col. 3 Table 10)</th>
<th>1982 Vocational Output (In % of Col. 3 Table 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 19%</td>
<td>25%</td>
</tr>
<tr>
<td>20 - 39</td>
<td>50</td>
</tr>
<tr>
<td>40 - 69</td>
<td>80</td>
</tr>
<tr>
<td>70 - 100</td>
<td>100</td>
</tr>
</tbody>
</table>

The "other sector output" presently consists of those private schools licensed by the State Board of Independent Post-Secondary Vocational Technical, Trade and Business Schools. The Board was extremely cooperative and with its assistance responses were obtained from
all schools contacted. The president of Tampa Technical Institute, volunteered the services of the staff in conducting a telephone survey of all licensed schools. A staff member of the Division of Vocational Education was present to validate the survey. Lack of knowledge as to the expected growth of the private sector limited operations. The assumption was made that the growth rate by program would closely parallel the increase in labor market needs for the corresponding occupational area.

4. Needs Assessment

With the identification of expectations expressing "where we should be" and of status indicators depicting "where we are now," needs should be determinable. Needs are the differences between "where we are now" and "where we should be." The projections of occupational demand are the expectations. In Table 10 these are identified as "Average Annual Expansion and Replacement Needs, 1978-1982." The projections of occupational supply are the status indicators. In Table 10 these are identified as "Projected (1982) Total Vocational Output (Supply)." The basis for this need is one of supply and demand. Other bases such as delivery system demands, social demand, and rate of return are excluded from consideration in this application.
### Table 10

**Five-Year Plan**

**Current and Future Job Needs**

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
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<tr>
<td></td>
<td></td>
<td>1977</td>
<td>1978-1982</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>003</td>
<td>Computer Programmer</td>
<td>6,380</td>
<td>491</td>
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<td>6 BU* 157</td>
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<td>004</td>
<td>Computer Systems Analyst</td>
<td>3,078</td>
<td>291</td>
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<tr>
<td>073</td>
<td>Foresters, Conservationists</td>
<td>2,387</td>
<td>166</td>
<td></td>
<td>0 AC* 74</td>
<td>74</td>
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<tr>
<td>076</td>
<td>Therapists</td>
<td>6,718</td>
<td>695</td>
<td></td>
<td>0 HL 225</td>
<td>225</td>
</tr>
<tr>
<td>080</td>
<td>Clinical Lab Technicians</td>
<td>6,824</td>
<td>843</td>
<td></td>
<td>36 HL 225</td>
<td>225</td>
</tr>
<tr>
<td>081</td>
<td>Dental Hygienists</td>
<td>1,360</td>
<td>350</td>
<td></td>
<td>35 HL 92</td>
<td>92</td>
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<tr>
<td>083</td>
<td>Radiologic Technicians</td>
<td>3,554</td>
<td>409</td>
<td></td>
<td>0 HL 145</td>
<td>145</td>
</tr>
<tr>
<td>084</td>
<td>Therapy Assistants</td>
<td>401</td>
<td>70</td>
<td></td>
<td>0 HL 66</td>
<td>66</td>
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<td>085</td>
<td>Health Technologists and Technicians, N.E.C.</td>
<td>4,295</td>
<td>392</td>
<td></td>
<td>37 HL 203</td>
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<tr>
<td>101</td>
<td>Recreation Workers</td>
<td>5,387</td>
<td>566</td>
<td></td>
<td>117 BS* 478</td>
<td>170 BE</td>
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<td>143</td>
<td>Prekindergarten and Kindergarten Teachers</td>
<td>8,690</td>
<td>467</td>
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<td>0 HG 120</td>
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<td>152</td>
<td>Chemical Technicians</td>
<td>1,567</td>
<td>84</td>
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<td>0 BS* 0</td>
<td>0</td>
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<td>153</td>
<td>Draftsmen</td>
<td>12,398</td>
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<td>500</td>
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<tr>
<td>154</td>
<td>Electrical Engineering Technicians</td>
<td>9,365</td>
<td>559</td>
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<td>155</td>
<td>Industrial Engineering Technicians</td>
<td>459</td>
<td>26</td>
<td></td>
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<tr>
<td>156</td>
<td>Mechatronic Engineering Technicians</td>
<td>87</td>
<td>7</td>
<td></td>
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<tr>
<td>162</td>
<td>Engineering/Science Technician</td>
<td>5,471</td>
<td>303</td>
<td></td>
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<td>174</td>
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<td>163</td>
<td>Airplane Pilots</td>
<td>5,395</td>
<td>193</td>
<td></td>
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<td>14</td>
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<tr>
<td>165</td>
<td>Air Traffic Controllers</td>
<td>1,083</td>
<td>96</td>
<td></td>
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<td>13</td>
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<tr>
<td>166</td>
<td>Embalmers</td>
<td>475</td>
<td>15</td>
<td></td>
<td>0 HL 46</td>
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<tr>
<td>180</td>
<td>Designers</td>
<td>4,418</td>
<td>348</td>
<td></td>
<td>0 HG 49</td>
<td>49</td>
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</tbody>
</table>

*BU-Business; AG-Agriculture; HL-Health; HG-Homemaking, Caifiel; DS-Distributive Education; PS-Public Service; IN-Industrial Education
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
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<td>190</td>
<td>Painters and Sculptors</td>
<td>4,179</td>
<td>51</td>
<td>IN 167</td>
<td>65</td>
<td>IN 196</td>
<td>198</td>
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<td>191</td>
<td>Photographers</td>
<td>3,490</td>
<td>47</td>
<td>IN 60</td>
<td>62</td>
<td>IN 117</td>
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<td>Bank Officers and Financial Managers</td>
<td>21,656</td>
<td>0</td>
<td>DE 29</td>
<td>0</td>
<td>DE 499</td>
<td>499</td>
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<td>203</td>
<td>Buyers, Shippers, Farm</td>
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<td>AG 21</td>
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<tr>
<td>205</td>
<td>Buyers, Wholesale, Retail</td>
<td>7,816</td>
<td>0</td>
<td>DE 67</td>
<td>0</td>
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<td>211</td>
<td>Funeral Directors</td>
<td>306</td>
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<td>0</td>
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<td>216</td>
<td>Managers, Superintendents, Building</td>
<td>10,291</td>
<td>58</td>
<td>DE 342</td>
<td>58</td>
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<td>225</td>
<td>Purchasers, Agents, Buyers, N.E.C.*</td>
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<td>518</td>
<td>DE 35</td>
<td>35</td>
<td>DE 130</td>
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<td>230</td>
<td>Restaurant, Cafe and Bar Managers</td>
<td>27,569</td>
<td>1,736</td>
<td>DE 813</td>
<td>1,226</td>
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<td>231</td>
<td>Sales Manager, Retail Trade</td>
<td>17,317</td>
<td>1,307</td>
<td>0</td>
<td>DE 85</td>
<td>0</td>
<td>95</td>
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<tr>
<td>232</td>
<td>Sales Manager, except Retail Trade</td>
<td>12,514</td>
<td>908</td>
<td>0</td>
<td>DE 21</td>
<td>0</td>
<td>21</td>
<td>21</td>
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<tr>
<td>245</td>
<td>Insurance Agents, Brokers and Underwriters</td>
<td>24,881</td>
<td>1,561</td>
<td>0</td>
<td>DE 1,666</td>
<td>0</td>
<td>3,915</td>
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<td>260</td>
<td>Accounting Agents and Salesman</td>
<td>3,520</td>
<td>357</td>
<td>0</td>
<td>DE 33</td>
<td>0</td>
<td>99</td>
<td>99</td>
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<tr>
<td>262</td>
<td>Property Managers</td>
<td>3,105</td>
<td>162</td>
<td>0</td>
<td>DE 34</td>
<td>0</td>
<td>91</td>
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<td>265</td>
<td>Real Estate Agents and Brokers</td>
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<td>DE 203</td>
<td>17</td>
<td>779</td>
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<td>270</td>
<td>Advertising Agents and Salesman</td>
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<td>1,561</td>
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<td>Stock and Bond Salesmen</td>
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<td>Salesmen and Sales Clerks, N.E.C.</td>
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<td>DE 2,811</td>
<td>32</td>
<td>3,637</td>
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<td>Billing Clerks</td>
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<td>BU 224</td>
<td>0</td>
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<tr>
<td>307</td>
<td>Bookkeepers</td>
<td>76,576</td>
<td>6,768</td>
<td>16</td>
<td>BU 1,407</td>
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TABLE 10—Continued
FIVE-YEAR PLAN
CURRENT AND FUTURE JOB NEEDS

Current and Future Job Needs

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**TABLE 10-Continued**

**FIVE-YEAR PLAN**

**CURRENT AND FUTURE JOB NEEDS**
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<td>20,048</td>
<td>2,172</td>
<td>0</td>
<td>PS 985</td>
<td>985</td>
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<tr>
<td>966</td>
<td>Police and Firefighters</td>
<td>17,182</td>
<td>1,161</td>
<td>0</td>
<td>PS 849</td>
<td>849</td>
<td>0</td>
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<tr>
<td>980</td>
<td>Child Care Workers, Private Household</td>
<td>9,809</td>
<td>462</td>
<td>0</td>
<td>HG 114</td>
<td>114</td>
<td>0</td>
<td>HG 114</td>
</tr>
<tr>
<td>981</td>
<td>Cooks, Private Household</td>
<td>1,472</td>
<td>47</td>
<td>0</td>
<td>HG 47</td>
<td>47</td>
<td>0</td>
<td>HG 47</td>
</tr>
</tbody>
</table>

The staff of the Planning, Programming, and Budgeting Section in the Division of Vocational Education believe that the problems and limitations associated with these projections and their interfacing presently prohibit the valid identification of needs at the state level. Although differences between projected occupational demands and supplies can be determined with the data in Table 10, the inherent error in these differences invalidates their usage.

Some of the problems which exist with these projections for state level funding purposes are (1) the integration of occupational program data, (2) the clustering of community colleges' and public schools' vocational education data, (3) the integration of occupational migration estimates into the supply component, (4) the tenuous projections of manpower demand data, (5) the variance of the projections in different regions of the state, (6) on-the-job training supply, and (7) private sector supply.

The interfacing of the occupational supply and demand variables appears to be the greatest limitation to identifying valid needs. Occupational programs and occupational titles are matched to the extent possible. However the current state of the art of measuring occupational supply does not permit the precision that is desired in the interface phase. Work being conducted at the U.S.O.E. may help to resolve many of the interfacing
problems; vocational programs are being mapped into occupational categories. In the fall of 1978, 1200 occupational titles will be available to improve the interfacing situation.

The staff of the PPB Section and division leadership agree that this approach to identifying needs is worthy of being pursued. Many of the problems identified above could be eliminated or reduced in magnitude if the data were analyzed on a regional basis. However, valid needs may be identifiable on a statewide basis in the near future as the problems and limitations are resolved. This study will proceed in a hypothetical mode upon the assumption that valid needs can be identified in the near future. The needs assessment should be continuous to provide for the use of revised projections during training periods which are developed with the initial assessment of needs.

5. Formulation of Alternative Strategies to Resolve Needs

Alternative strategies could now be formulated for resolving the identified needs. These strategies could be financial in that they involve the distribution of funds to school districts, or they could be non-financial. If financial, they could be general or categorical. If the funds were general, they would be a part of the major, generally unrestricted program for state support (F.E.F.P.).
Categorical funds would be a minor part of the program for state support, would be targeted to a specific purpose, and would be restricted by law and/or rule. If the funds were either general or categorical, they could be fiscal-modified, client-modified, both fiscal- and client-modified, modified in some other way, or unmodified. Fiscal-modified funds take into account the fiscal capacity or wealth of school districts. Client-modified funds take into account different classifications of students according to relative needs. In many states consideration might not be given to categorical funds because of their potential for disqualification. Because the Florida Education Finance Program is fairly well equalized, this potential is not great.

However if these strategies were non-financial in nature, they could be legal, regulatory, or service oriented. Legal strategies would be specified in federal or state law. Regulatory strategies would be specified in the Federal Register or State Board of Education Rules. Service strategies would be accomplished through the assistance of the appropriate federal or state agencies.

The financial strategies could be generated from (1) theoretical models developed by the scholars of educational and public finance or by economists, (2) recommendations produced from the many recent state educational finance studies, (3) recent legislative or gubernatorial
proposals for state educational finance reform, or (4) existing state educational finance programs.

The non-financial strategies could be generated from (1) findings of educational research and development activities, (2) recommendations from recent studies, or (3) current exemplary practices.

Assuming that needs can be identified, they could indicate anything along a continuum from a need for a significant increase in supply in an occupational field to a significant decrease in supply. In other words, the needs could be projecting anything on a continuum from gross overdemand to gross oversupply in an occupational field. These critical positive needs and critical negative needs would probably be the only ones for which alternative strategies would be formulated in consideration of the problems and limitations identified earlier.

Alternatives to resolve the identified, critical occupational needs, both positive and negative, along with their classifications, might be:

(A) Funding courses or programs with a premium (or discount) of a specified amount (financial, general, fiscal-client-modified)

(B) Developing new programs or funding categories for these courses (financial, general, fiscal-client-modified)
(C) Creating a categorical program by means of which targeted, incentive funds could be allocated (financial, categorical, client-modified)

(D) Providing in the review criteria for applications for projects of program improvement a criterion that the application must be relevant to the resolution of identified, critical occupational needs (non-financial, regulatory)

(E) Providing in the list of guidance and counseling as well as placement services funded through the state under the vocational guidance and counseling program that students will be made aware of which vocational courses will have the greatest likelihood of occupational placement (non-financial, regulatory)

(F) Providing each regional coordinating council with information on the identified, critical occupational needs and recommending that each council utilize this information in its advisory capacity with each school district or area vocational school (non-financial, service)

Analysis of Alternative Strategies

(A) Funding courses or programs with a premium or discount of a specified amount or percentage

This alternative could include premiums or discounts expressed in units of dollars per FTE, cost factor
increments or decrements, weighted FTE increments or decrements, percentage increases or decreases for any of the preceding, or possibly some other kind of units. For example, each FTE earned in a premium course might receive a 10% bonus whereas each FTE earned in a discount course might be funded with a cost factor equal to the corresponding basic program's cost factor.

This alternative would have to be specified generally in statute with the specific courses to be funded at premiums or discounts specified in State Board Rules. Although no similar practices are known in other states nor are any valid research studies known to support this approach, it does appear that generally accepted principles of reinforcement theory would support this alternative as a viable way to increase the production of labor trained in critically needed occupations and to decrease the production in occupations of oversupply. Provision would have to be made for modification during the implementation to avoid a staffing problem in small districts when discounts are involved. Four years of experience in funding vocational educational courses in cost categories has shown that enrollment decreases in courses being funded at less than their cost and conversely.

This alternative should be cost-beneficial in that its likelihood of producing employable graduates is excellent, thus potentially increasing personal income as well
as the GNP and GSP. The cost half of the cost-benefit analysis cannot be assessed until specific courses of instruction can be identified.

The extra cost of a 10% premium for a relatively small number of vocational courses should be economically feasible. To the extent that discounted courses are still enrolling students, the cost of the premium courses would be offset. To some extent a zero-sum reallocation equilibrium might be created.

Without knowing the specific courses involved, it is not possible to assess the social feasibility of this alternative. Understandably courses for which a great need exists might not involve subject areas which are socially desirable. It does not appear that such an approach to funding would be politically infeasible.

For the amount of funds anticipated to be required for this alternative, a pilot-test would not be necessary. A simulation of this alternative on a course level with projections for enrollment changes would be necessary to estimate funding requirements.

(B) Developing new programs or funding categories for courses or programs

This alternative would have the same effect as the previous alternative, only the method of achieving that effect would be different. This method would necessitate the creation of two to three times the number of programs
or funding categories in order to produce a sufficient number to adequately increase or decrease funding. For example, for a given funding category, it would potentially require both a "premium" and a "discount" funding category. Recognizing that some overlap and some non-occurrence of premium or discount courses will occur, the likelihood of requiring at least twice as many funding categories as exist presently is still good.

Since many of the other advantages and disadvantages from the previous alternative would be true of this alternative and since this alternative would require at least twice as many programs or funding categories, this alternative will be eliminated from further consideration in lieu of alternative A.

(C) Creating a categorical program by means of which targeted, incentive funds could be allocated

This alternative would provide the greatest funding flexibility for courses in critical need occupational areas. Funds could have varying "premium" amounts based not only upon state critical needs but also upon regional or local conditions. One big disadvantage to this alternative is the lack of any reduction in funding for those vocational courses determined to be producing an occupational oversupply.

This alternative would have to be specified generally in statute with the specific courses to be funded
and their regional or local criteria of eligibility specified in State Board Rules. Although no similar practices are known in other states nor are any valid research studies known to support this approach, it does appear that generally accepted principles of educational funding would support this alternative as a viable way to increase the production of labor trained in critically needed occupations in selected areas throughout the state.

This alternative should be cost-beneficial in that its likelihood of producing employable graduates is excellent, thus potentially increasing personal income as well as the GNP and the GSP. The cost half of the analysis cannot be assessed until specific courses of instruction can be identified.

It would be difficult to estimate the cost of such a categorical without knowing what courses would be eligible to receive funding. However since the purpose is only to supplement regular F.E.F.P. funds as an incentive bonus, its cost could not be too great.

Without knowing the specific courses involved, it is not possible to assess the social feasibility of this alternative. Understandably courses for which a great need exists might not involve subject areas which are socially desirable. It does not appear that this alternative would be politically infeasible unless legislative sentiment at
the time is against the creation of additional categorical programs.

For the amount of funds anticipated to be required for this alternative, a pilot-test or field-test would not be necessary. A simulation of this alternative on a course level with projections for enrollment increases would be necessary to estimate funding requirements.

(D) Providing in the review criteria for applications for projects of program improvement a criterion that the application must be relevant to the resolution of identified, critical occupational needs

This alternative would have to be specified in the Florida State Plan for Vocational Education and State Board Rules. Such a provision would not appear to be incongruent with federal or state law, valid research studies, or generally accepted theories or principles of school finance. It is not presently known whether similar practices exist or not. It appears that such an alternative would be economically, socially, and politically feasible.

(E) Providing in the list of guidance and counseling as well as placement services funded through the state under the Vocational Guidance and Counseling Program that students will be made aware of which vocational courses will have the greatest likelihood of occupational placement

This alternative would have to be specified in the Florida State Plan for Vocational Education and State Board Rules. Such a provision would not appear to be incongruent
with federal or state law, valid research studies, or generally accepted theories or principles of school finance. It also appears that such an alternative would be economically, socially, and politically feasible. Two existing practices related to this alternative are Computer Assisted Placement Service and Vital Information for Education and Work.

(F) Providing each regional coordinating council with information on the identified, critical occupational needs and recommending that each council utilize this information in its advisory capacity with each school district or area vocational school.

Presently the councils are utilizing the information on identified, critical occupational needs (1) in advising school districts on the development of new courses and the modification of others, and (2) in conducting surveys of citizens' desires for program development. Provisions for these activities are provided for in the Florida State Plan for Vocational Education. If the governance issue concerning which level of government should make policy about which courses should be taught becomes a problem, then this alternative may become the only viable one.

7. Findings and Conclusions

Viable alternatives can be identified which would improve the ability of the state's educational system to meet occupational demands. Of the alternatives considered,
D, E, and F are capable of being implemented by the department of education with approval of the State Board of Education.

Of the alternatives directly involving funds to school districts, only A and C appear to be worth further consideration. These alternatives have three essential differences:

1. Alternative A is general and would be implemented through F.E.F.P programs; alternative C is categorical and would supplement F.E.F.P. programs.

2. Alternative A provides for both rewards (premiums) and penalties (discounts); alternative C provides only for rewards unless course fees are utilized.

3. Alternative A includes required local effort dollars; alternative C does not.

Policymakers could not choose a desired course of action from among these two alternatives with a third alternative being of course neither A nor C.

Assuming that the policymakers do legislate a method to attempt to resolve the identified critical occupational needs, an accountability determination can be made. First adjustments must be made to account for changes which policymakers made in the recommended alternatives as described above.

An accountability determination can then be made of the results being achieved for the resources being invested. Some of the questions which might be answered
during this accountability determination might be as follows:

Did the Total Vocational Output in the specified programs or courses increase (or decrease) with the passage of not more than five years? If so, how much?

Did the employment level in the occupational fields of critical need increase (or decrease) with the passage of not more than five years? If so, how much?

How accurate were the projected Average Annual Expansion and Replacement Needs identified for the 1978-1982 period?
1 Florida Department of Education, Planning for Change (Tallahassee: The Department, 1972), pp. 1-3.


5 Cooperative Accountability Project, Legislation by the States: Accountability and Assessment in Education (Denver: The Project, 1972), p. 3.

6 Kaufman and English, p. 8.

7 Morphet, Jesser, and Ludka, p. 85.


9 Kaufman and English, pp. 56, 57.

10 Florida Department of Education, pp. 1-3.

11 Kaufman and English, p. 81.


13 Eastmond, p. 103.

14 Ibid., p. 100.

15 Ibid., pp. 100, 101.


24. Section 236.012(1), Florida Statutes.


Using the Range of Disparity Analysis at the 95th and 5th percentiles in dollars per weighted full-time equivalent student, the following is obtained:

<table>
<thead>
<tr>
<th>Year</th>
<th>High</th>
<th>Low</th>
<th>Difference</th>
<th>Disparity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975-76</td>
<td>$877.21</td>
<td>$719.11</td>
<td>$158.10</td>
<td>21.99%</td>
</tr>
<tr>
<td>1976-77</td>
<td>$900.61</td>
<td>$756.00</td>
<td>$144.61</td>
<td>19.13%</td>
</tr>
<tr>
<td>1977-78</td>
<td>$970.01</td>
<td>$809.33</td>
<td>$160.68</td>
<td>19.85%</td>
</tr>
<tr>
<td>1978-79(est.)</td>
<td>$1057.57</td>
<td>$896.52</td>
<td>$161.05</td>
<td>17.96%</td>
</tr>
</tbody>
</table>


32 Student Assessment Section, *Florida Norm Referenced Test Results: Grade Five Reading* (Tallahassee: Florida Department of Education, Spring, 1976).


36 Carey E. Ferrell, Jr., "Programs with Composite Scores Less Than 70% in Mathematics and Communications by District" (Tallahassee: Florida Department of Education, memorandum to school district superintendents dated March 9, 1978).

37 Performance Standards and Personnel Data Section, State Report of District Standards Achievement and Student Assessment Section, State and District Report of Results - 1977-78.


39 Some authorities believe that the higher achieving students should receive more funds than the lower achieving ones, for example, Dr. J. Alan Thomas at the University of Chicago.


Calculations are as follows:

\[ \$452,802,306 = 113\% \times \$399,980,384 \]
\[ = 80\% \times \$566,002,882 \]
\[ \$566,002,882 = 1.415 \times \$399,980,384 \]
\[ 1.746 = 1.415 \times 1.234 \]

41 Ibid. and calculations are as follows:

\[ \$452,802,306 + \$728,055,834 = 127\% \times (\$399,980,384 + \$527,522,073) \]
\[ \$1,180,858,140 = 127\% \times \$927,502,457 \]
\[ = 80\% \times \$1,476,072,657 \]
\[ \$1,476,072,657 = 1.591 \times \$927,502,457 \]
\[ \$1,217 = 1.591 \times 765 \]

42 Ibid. and calculation is \$1,009 = 1.018 \times \$991.
\$1,264,692 is the sum of the budgeted dollars for the 1977-78 State Compensatory Education Program as shown in Table 6. This is 13\% of \$10 million, the amount appropriated for 1977-78.

Section 232.245(3), Florida Statutes.

Lawyers' Committee for Civil Rights under Law, A Description and Analysis of the Relationship between Title I, E.S.E.A. and Selected State Compensatory Education Programs (Washington: Offices of the Committee, April, 1977), pp. 59, 122, and 123.


Lawyers' Committee for Civil Rights under Law, pp. 213-218.

14,669 full-time equivalent students from Table 9 multiplied by \$300 equals \$4,400,700. 35,301 full-time equivalent students from Table 9 multiplied by \$300 equals \$10,590,300.

Section 236.081(3), Florida Statutes.

State total of expenditures reported on Annual Financial Report, Schedule 3, p. 29 as submitted by all Florida school districts.


Strategy Planning and Management Information Systems Section, Analysis of Projected Enrollments . . ., p. 3, and Chapter 23.0114(1), Florida Statutes.

Office of Manpower Planning, Florida's Occupational Information and Delivery System (Tallahassee: Florida Department of Community Affairs, October, 1977).

This paragraph and the one which follows are derived from, Office of Research and Statistics, Florida Employment Directions, 1974-1985 (Tallahassee: Florida Department of Commerce, October, 1977), pp. 32, 33.

56 Industry employment for SMSA's with a 1970 population under 250,000 was broken out using the same ratios calculated for the occupation matrices for the districts in which they are located. Also, data for Districts 3, 5, and 9 were combined in creating their matrices because of the size of their population.


58 The projection for occupational supply is based upon an assumption that "growth will occur in such a way as to make straight-line interpolations meaningful." Such an assumption is unsound because growth in a straight line is not too common.

59 This paragraph and the six which follow are derived from Division of Vocational Education, Florida State Plan for Vocational Education under Title II of the Vocational Education Amendments of 1976 (Public Law 94-482), Part I, Five-year Plan, FY 1978-1982, Section B, Programs, Services, and Activities (Tallahassee: Florida Department of Education, 1978), pp. 7-9.
CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary and Findings

The primary purposes of this study were to develop and to test a planning system for producing useful information for policymakers to judge alternatives about a state educational finance system.

These purposes were accomplished by means of a systems approach. Conceptual alternatives for the planning system were identified from among policy formation models, systems analysis and systems synthesis processes, and general educational planning and evaluation systems. From these conceptual alternatives a planning system and its environmental policy-formation system were developed.

The policy-formation system is conceptualized in figures 4 and 5. The sequence of elements in the system begins with the antecedent movements of basic forces, interest promotion, political demanding, and political action. These movements lead to the initiation of a planning study for the purpose of producing useful information for policymakers to judge alternatives about
FIGURE 4
A FLOW REPRESENTATION OF THE POLICY FORMATION SYSTEM
The flow representation below shows the relationships among the six types of decisions in a policy formation system. The planning system, which might be referred to by educational administrators as alternative formulation, produces information for planning decisions and structuring decisions. The planning system, which might also be referred to as the policy formalization phase, produces information for policy and recycling decisions. The evaluation system, which might also be referred to as the accountability phase, produces information for implementing and attaining decisions. Those decisions which are involved primarily with the state educational system are called ends. The planning decisions deal with intended ends or objectives, while the attaining decisions deal with actual ends or accomplishments. Those decisions which are involved primarily with the state educational finance system are called means. The structuring decisions deal with intended means or objectives, while the implementing decisions deal with actual means or accomplishments. The planning, policy-making, and evaluation systems might also be referred to respectively as inputs, processes, and outputs.

**STRUCTURING DECISIONS**

To determine the existence of alternative educational finance methods and means which might promote the resolution of the educational needs and/or the achievement of the educational objectives, with one alternative being the existing educational finance system.

To determine the likelihood that these alternative educational finance methods and means will promote the resolution of the educational needs and/or the achievement of the educational objectives.

**PLANNING DECISIONS**

To allow policymakers to establish educational needs and/or objectives based on educational goals and/or concerns.

**POLICY DECISIONS**

To make decisions about alternative educational finance methods and means for the purpose of establishing priorities which are of sufficient significance that they direct subsequent decisions.

**RECYCLING DECISIONS**

To determine the revisions, refinements, and extensions which might be made in the educational finance methods and means as well as in the educational needs and/or objectives.

**IMPLEMENTING DECISIONS**

To determine the extent to which alternative educational finance methods and means and related policies and regulation have been implemented.

**ATTAINING DECISIONS**

To determine the extent to which the educational needs have been resolved and/or the educational objectives have been achieved for the resources being invested.

**ENDS**

**MEANS**
a state educational finance system. The alternatives formulated from the planning study will lead to the formalization of state educational finance policies. The implementation of these policies will require evaluation because of demands for accountability. With the information produced by the evaluation, decisions can be made about revisions, refinements, and extensions in the state educational finance system.

The planning system developed in this study is one part of the policy-formation system. It produces useful information for both planning decisions and structuring decisions. The sequence of components designed to produce information for the planning decisions together with each component's purpose is summarized as follows:

1. Goal Identification (optional)—to provide general direction for the state educational system,

2. Concerns Analysis—to analyze why the state educational system should go in that direction,

3. Status Analysis—to analyze where the state educational system is now,

4. Antecedent Analysis—to analyze where the state educational system has been,

5. Needs Assessment—to assess where the state educational system should go,

6. Long-range Objectives Determination (optional)—to specify what the state educational system should achieve ultimately, and

7. Objectives Determination (optional)—to specify what the state educational system should achieve in the near future.
The sequence of components designed to produce information for the structuring decisions together with each component's purpose is summarized as follows:

8. Methods/Means Analysis—to produce alternative state educational finance methods and means,

9. Initial Methods/Means Assessment—to assess the advantages and disadvantages of the alternative state educational finance methods and means,

10. Priority Alternative Methods/Means Selection—to select the alternative state educational finance methods and means which should receive a refined methods/means assessment.

11. Refined Methods/Means Assessment—to assess the advantages and disadvantages of the priority alternative state educational finance methods and means,

12. Methods/Means Selection—to select the alternative state educational finance methods and means which possess the greatest likelihood of resolving the need(s) and/or achieving the objective(s), and

13. Field-test—to find and correct inadequacies, incompletenesses, and deficiencies in the proposed set of state educational finance methods and means.

The planning system and its policy-formation system were evaluated by fourteen reviewers and members of the doctoral dissertation reading committee. Twelve responses were received. All of the suggestions which were considered feasible have been incorporated into the systems as presented in this study.

The planning system was tested in a Florida setting. Two applications were developed and presented to a panel of fifteen experts. Panelists were selected on the basis of their potential to judge the usefulness of the information
produced by the planning system for policymakers to use in judging alternatives about the Florida Education Finance Program. The twenty responses obtained from the panel are presented in outline format in Appendix I. All feasible suggestions were incorporated into the two applications presented in this study. Those suggestions considered not to be feasible are identified in Appendix I with the reasons given for their exclusion.

Conclusions

1. Although the planning system was developed from general concepts, it proved practicable when applied to a specific setting; namely, the Florida Education Finance Program. Because of the planning system's general nature, some modifications of it would be desirable, if not necessary, whenever it is used. The two applications of the planning system in this study illustrate the nature of such minor modifications required primarily because of unique data bases.

2. The planning system is comprehensive and adaptable. The planning system comprehensively deals with the assessment of need from external to the state educational finance system and with the development of financial alternatives to resolve these needs. The planning system is also comprehensive in that it covered all aspects considered to be important to the panel of experts. The planning
system, as a conceptual construct, can accommodate different data bases in any one state.

3. The planning system must incorporate some subjective, value-laden data to function effectively. For example, policy decisions are made in a political context, and policymakers set priorities on the bases of subjective and personal values as well as objective information.

**Recommendations**

1. Additional empirical research should be conducted to assess the nature and extent of the usefulness of the information produced for policymakers.

2. To improve upon the generalizability of the planning system, it should be applied (1) to other kinds of identified needs, for example, exceptional student needs; (2) directly with policymakers, for example, with legislators; (3) by consultant and/or staff teams conducting state educational finance studies; (4) in other states; (5) to develop financial alternatives satisfying criteria established by court decisions; and (6) to develop financial alternatives for noneducational state programs, for example, health, welfare, correctional, and other programs.

3. As the above applications are made, a product evaluation should be made in a research context to assess the usefulness of the information produced for policymakers.
4. State legislatures and educational agencies should consider the planning system for assessing the needs for additional data regarding funding alternatives.

5. The system developed in this study should be applied to other levels of education. School districts should use the system to develop school district financing policies.

6. The planning strategies and skills utilized in this system should be incorporated into preparation programs for educational administrators. General understandings of the concepts of planning and systems should be part of all such programs, and specific understandings and skill development in the areas of information systems useful in financial policy development should be part of programs preparing school finance and school business administrators.

7. The planning system should be expanded to provide for the development of nonfinancial alternatives to resolve identified needs. These nonfinancial alternatives might stand as products of the planning system or they might lead into the development of financial alternatives. The components necessary to do this would be similar to the existing components for developing financial alternatives.

8. The evaluation system provided for in the policy-formation system should be developed and tested. The implementation of evaluative activities will further test the
planning system and will complete the development of the policy-formation system.
APPENDIXES
APPENDIX A

REVIEW OF RELATED LITERATURE:
STATE EDUCATIONAL FINANCE STUDIES

The questions in this appendix provide the framework for the summary information presented at the end of Chapter II. Each paragraph in that summary is directly summarized from one or more of these questions. The relationship of each question to the components of the planning system is given in parentheses immediately following each question.

1. Was the finance system related to the state's educational system in such a way that educational needs were to be resolved or educational objectives were to be attained by the proposed finance changes? (Related to planning system components from Goal Identification through Objectives Determination)

CA various parts of Chapter III
DE school district productivity (pp. 265-313)
Programmatic Cost Differentials (section 8)
FL-IECESP Sparsity of pupil population related to availability of pupil programs (p. 17)
FL-IEF Scope of entire study included many educational topics. Many of these were not integrated into finance study.
four of thirteen findings (pp. 86 & 87)
six of thirteen recommendations (p. 87)
Section VI - The School-Centered Organization of Instruction
Section IV - Financing Compensatory Education
Section VII - Financing Education of Migrant Children
Section IX - Projected Cost of Statewide Kindergarten

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FL-CFEPP Need was defined as relative costs of programs (pp. 3-34)
FL-FPSF assessment of school district productivity (pp. 87-126)
dimensions of educational need (pp. 128-167)
status of school instructional personnel (pp. 168-201)
MI-SFRM financial variables only
MI-SFEOM educational opportunity (pp. 19-66)
educational systems (pp. 67-72)
teachers (PP. 72-129)
school buildings (pp. 131-152)
nonpublic schools (pp. 209-292)
organization and planning (pp. 292-322)
NY Study included quality, cost, financing, governance, and organization.
no consensus regarding goals or objectives of education (p. iii)
enrollment trends, student performance, teacher and student opinions, racial and ethnic imbalance, non-English speaking students, handicapped students, drug abuse, etc. (pp. 1.2-1.63)
educational system (pp. 1.63-1.65)
curriculum (pp. 6.1-6.70)
secondary education (pp. 7.1-7.46)
children with special needs (pp. 9.1-9.141)

2. Were educational needs derived from goals and/or concerns after an assessment of "where we are now" and "where we want to go"? (Relates to planning system components from Concerns Analysis through Needs Assessment)

CA needy students defined (pp. 168-170)
DE now only: non-school factors affecting the cost of education (pp. 95-123)
now and to go: status of Delaware public school personnel (pp. 124-162)
now and to go: school construction (pp. 162-194)
now and to go: school transportation (pp. 195-248)
now only: school food service (pp. 249-264)
now only: programmatic cost differentials (section 8)
FL-IECESP need is amount of extra funds required because of sparsity (pp. 2 & 3, 4-16)
need is FTE students divided by number of approved high schools (p. 20)
5. Were the alternative state educational finance strategies and processes assessed for their validity? (Related to planning system component on Initial Methods/Means Assessment)

<table>
<thead>
<tr>
<th>State</th>
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<tbody>
<tr>
<td>CA</td>
</tr>
<tr>
<td>DE</td>
</tr>
<tr>
<td>FL-IECESP</td>
</tr>
<tr>
<td>FL-IEF</td>
</tr>
<tr>
<td>FL-CFEPF</td>
</tr>
<tr>
<td>FL-FPSF</td>
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<td>MI-SFEO</td>
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<td>NY</td>
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</table>

6. Were alternative state educational finance strategies and processes assessed for their congruence with known practices, valid research studies, and generally accepted theories and principles? (Related to planning system component on Initial Methods/Means Assessment)

<table>
<thead>
<tr>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
</tr>
<tr>
<td>DE</td>
</tr>
<tr>
<td>FL-IECESP</td>
</tr>
<tr>
<td>FL-IEF</td>
</tr>
<tr>
<td>FL-CFEPF</td>
</tr>
<tr>
<td>FL-FPSF</td>
</tr>
<tr>
<td>MI-SFRM</td>
</tr>
<tr>
<td>MI-SFEO</td>
</tr>
<tr>
<td>NY</td>
</tr>
</tbody>
</table>
need is derived from concerns (pp. 1-3)

implied in many passages

many concerns from resource people (Appendix E)

need synonymous with cost factor or cost differential

now: funding cost factors
to go: expenditure relationships in 1972-73

need synonymous with weighted pupil instructional units
dimensions of educational need, concept of need discussed (pp. 128-167)

all needs financial

now only: educational opportunity (pp. 19-66)

now and to go: school population (Appendix A)

now only: state of education (Chapter I)

now only: equality (pp. 2.1-2.13)

now only: low achieving students (p. 2.17)

now and to go: children with special needs (pp. 9.1-9.141)

3. Were educational needs stated in such a way that an objective determination could be made that the needs were resolved or objectives were attained? (Relates to planning system components on Needs Assessment and Objectives Determination)

CA No

DE only for need as a cost differential

FL-IECESP No and yes

FL-IEF Many recommendations were stated so that some determination of implementation could be made, but most of these determinations would be largely subjective.

FL-CFEFPF Yes

FL-FPSF No

MI-SFRM No

MI-SPEOM No

NY No, except for children with special needs

4. Were alternative state educational finance strategies proposed for resolving needs or achieving objectives along with the processes through which these strategies might be implemented? (Relates to planning system component on Methods/Means Analysis)

CA district power equalizing (pp. 216-225)

full state assumption (pp. 214-216)

categorical aid programs (pp. 238-250)
7. Were the alternative state educational finance strategies and processes assessed for potential cost-efficiency and cost-benefit/cost-effectiveness? (Relates to planning system component on Initial Methods/Means Assessment)

<table>
<thead>
<tr>
<th>State</th>
<th>Economic Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>Effectiveness and efficiency (Chapter III0 school district productivity (pp. 265-313) programmatic cost differentials (section 8) implied to be throughout not mentioned financial reporting and program accounting (Appendix B) efficient allocation of educational investment (pp. 2.47-2.51)</td>
</tr>
<tr>
<td>DE</td>
<td>Throughout</td>
</tr>
<tr>
<td>FL-IECESP</td>
<td>School district productivity (pp. 87-126)</td>
</tr>
<tr>
<td>FL-IEF</td>
<td>No</td>
</tr>
<tr>
<td>FL-CFP</td>
<td>Economic-revenue sources (Chapter II) economic (p. 322) educational -- school district productivity (pp. 265-313) economic and political (Chapters II and III) economic (throughout) social and political (implied from citizens' committee) no educational -- school district productivity (pp. 87-126) economic and political (throughout) economic, educational, economic, and social (throughout) economic -- revenue projections (pp. 2.81-2.86 and Appendix 2F) social -- equality (pp. 2.1-2.11) political -- societal problems (Chapter 10) political -- governance (Chapter 11)</td>
</tr>
<tr>
<td>MI-SFRM</td>
<td>Economic and political (throughout)</td>
</tr>
<tr>
<td>MI-SFEOM</td>
<td>Economic and political (throughout)</td>
</tr>
<tr>
<td>NY</td>
<td>Economic and political (throughout)</td>
</tr>
</tbody>
</table>
9. Were the alternative state educational finance strategies and processes simulated by computer, pilot-tested, or field-tested, whichever was appropriate? (Relates to planning system components on Refined Methods/Means Selection and Field Test)

CA       simulation (pp. 263-299)
DE       N.E.F.P. simulation
FL-IECESP calculations made for all districts (pp. 63 and 64)
FL-IEF    simulation (Attachment E)
FL-CFEPF  computer analysis for all districts in study (Appendix C)
FL-FPSF   N.E.F.P. simulation
MI-SFRM   computer simulation (pp. 30-44)
MI-SFEOM  field-test for accounting and reporting system (pp. 389 & 390)
NY       computer simulation (many tables)

10. Was an evaluation conducted of the study's processes and products? (Relates to Appendix F)

CA       product--accountability (pp. 186-209)
                  product--categorical programs (p. 250)
                  draft submitted to sponsor for review
DE       draft submitted to sponsor for review
FL-IECESP draft submitted to sponsor for review
FL-IEF    draft submitted to sponsor for review
FL-CFEPF  draft submitted to sponsor for review
FL-FPSF   draft submitted to sponsor for review
MI-SFRM   draft submitted to sponsor for review
MI-SFEOM  draft submitted to sponsor for review
NY       draft submitted to sponsor for review
APPENDIX B

OPTIONAL QUESTIONS TO BE ANSWERED DURING THE EXECUTION OF THE PLANNING SYSTEM

**Goal Identification**

1. What existing goal statements are applicable to the planning study?

2. To what extent should "Goal Identification" be merged with "Concerns Analysis"?

3. What goal taxonomy, if any, should be used in identifying the goals?

4. What group has the legal authority and responsibility to identify goals?

5. What group has the delegated authority and responsibility to identify goals?

**Concerns Analysis**

6. What concerns have been expressed by the policymakers and planners relevant to the scope of the planning study mission objectives, the system definitions, and the goals for the system?

7. What values have been expressed by the policymakers and planners relevant to the scope of the planning study mission objectives, the system definitions, and the goals for the system?

**Status Analysis**

8. What is the present status of the educational, economic, political, and social variables which can be relevantly associated with the identified concerns and values?
Antecedent Analysis

9. What previously identified educational, economic, political, and social variables and parameters have established trends during the last decade?

10. What specifically are the trends which have been established?

11. What basic socioeconomic forces have been occurring in conjunction with these trends?

12. Which of the groups of actors participated in interest promotion and political demanding activities?

13. Of those which participated, which ones were initiators, supporters, or opponents?

14. Of those which participated, what was the scope of their interest and/or demands?

15. Of those which participated, what was the frequency of their participation?

16. To which actors is the state education policy system open?

17. On what issues is the state education policy system open?

18. To what political demands is the state education policy system open?

19. What recent policy modifications have been made in the state educational finance system being planned and in its state educational system environment?

20. How are these recent policy modifications viewed by (1) the legal policymakers, (2) those with delegated authority and responsibility for policy making and decision making, and (3) the extra-legal policy and decision influencers with respect to (A) perceived degree of change, (B) the degree of information grasp possessed by each group, and (C) the degree of congruence between the systemic agenda and institutional agenda?
Needs Assessment

21. Based upon the antecedents, the facts, and the values for each identified concern, what are the needs of the state educational system?

22. For each identified need, what are the criteria for need resolution?

23. For each identified need, what is its priority in relation to the other identified needs?

Long-Range Objectives Determination

24. Based upon the identified needs for the state education system, their criteria for need and their priorities, what are the long-range objectives for the state educational system?

Objectives Determination

25. Based upon the identified needs, their criteria for need resolution, their priorities, the long-range objectives, and the limits and constraints for the state educational system, what are the objectives for the state educational system?

Methods/Means Analysis

26. What alternative state educational finance methods exist for achieving the objectives of the state educational system?

27. What alternative state educational finance means exist for implementing the methods?

28. What modifications, combinations, simplifications, expansions, rearrangements, and other changes should be made in the alternative methods and means for the purpose of improving them?

29. What are some of the advantages and disadvantages associated with the alternative methods and means?

30. What grand strategies and overall designs for producing information for structuring decisions are evident to the planners?
REFERENCES FOR THIS COMPONENT

Advisory Commission on Intergovernmental Relations

Center for the Study of Educational Finance (Illinois State University) Drs. G. Alan Hickrod and Ben C. Hubbard

Education Finance Center (Education Commission of the States) Dr. Allan Odden

Educational Finance and Management Institute, Inc. (University of Florida) Dr. R.L. Johns

Institute for Educational Finance (University of Florida) Drs. Kern Alexander and Jim Hale

Legislators' Education Action Project (National Conference of State Legislatures) Drs. John J. Callahan and William H. Willken

Library of Congress, Dr. K. Forbis Jordan

League of Women Voters

National Education Association

National Institute for Education Program on Educational Finance, Dr. David Mandel

Professors of Educational Administration at many state and some private universities where educational finance is taught and researched

State Departments of Education

United States Office of Education School Finance Staff, Dr. Thomas L. Johns and Dexter A. Magers
Initial Methods/Means Assessment

31. To what extent would each specific method and means resolve the need(s) and/or achieve the desired objective(s)?

32. What are the corresponding estimates of likelihood that these specified extents would be attained?

33. What congruities and incongruities exist between each of the alternative state educational finance methods and means and the legal restraints existing in the state?

34. What congruities and incongruities exist between each of the alternative state educational finance methods and means and similar known practices in other states?

35. What congruities and incongruities exist between each of the alternative state educational finance methods and means and valid research studies?

36. What congruities and incongruities exist between each of the alternative state educational finance methods and means and generally accepted theories and principles?

37. Who among the scholars of educational finance will be the best sources to contact with respect to the issues raised in the preceding three questions?

38. What cost-efficiency assessment can the planners make with respect to each of the alternative state educational finance methods and means?

39. What cost-benefit/cost-effectiveness assessment can the planners make with respect to each of the alternative state educational finance methods and means?

40. How economically feasible do each of the alternative state educational finance methods and means appear to be?

41. How socially feasible do each of the alternative state educational finance methods and means appear to be?

42. How politically feasible do each of the alternative state educational finance methods and means appear to be?
Priority Alternative
Methods/Means Selection

43. How many alternative state educational finance methods and means should be selected to undergo a "Refined Methods/Means Assessment" for each objective or combination of objectives?

44. What methods will the planners use to determine which alternative state educational finance methods and means should be selected?

45. Which alternative state educational finance methods and means should undergo a "Refined Methods/Means Assessment"?

Refined Methods/Means Assessment

46. To what extent would each specific method and means resolve the need(s) and/or achieve the desired objective(s)?

47. What are the corresponding estimates of likelihood that these specified extents would be attained?

48. How do the priority alternative methods and means compare with each other when simulated and/or pilot-tested?

49. What modifications should be made in the priority alternative methods and means as a result of the simulations and/or pilot-testing?

50. What assessments can be made of the predetermined validities and functional reliabilities of the priority alternative methods and means as a result of the simulation and/or pilot-testing?

51. What unanticipated outputs or side-effects from the priority alternative methods and means have resulted from the simulation and/or pilot-testing?

Methods/Means Selection

52. What methods will the policymakers and the planners use to determine which alternative state educational finance methods and means should be selected?
53. Which alternative state educational finance methods and means possess the greatest likelihood of achieving each objective or combination of objectives?
APPENDIX C

ANALYSIS OF THE SETTING FOR
THE PLANNING STUDY

Introduction

A number of environmental circumstances will have a significant impact on the designing of the planning study. Models illustrating some of the situations in which the planning study may take place are given in this Appendix. The utility of the models is intended to illustrate varying situations. The models are not intended to allow for an accurate assessment of any particular situation, since the necessary behavioral indicators allowing their implementation do not exist.

The degree of change foreseen in the state educational finance system as perceived by the policymakers and the grasp they possess for information about this change will have a great impact on the depth and the thoroughness of the planning study as expressed by the type of group selected to conduct it. Similarly the degrees of formality and internality/externality intended for the planning study will play a role in determining the type of group selected to conduct it. Also affecting the designing of the planning study will be the degree of congruence in content and priori-
ties between the systemic agenda and the institutional agenda for the planning study. The systemic agenda is the set of legitimate concerns for the planning study, while the institutional agenda is the set of concerns formally being considered.
Perceived Degree of Change Foreseen

The degree of change discerned in the state educational finance system as perceived by the policymakers is composed of two factors. The primary consideration is the relative importance attached to the variables involved in the planning study as perceived by the policymakers. The secondary consideration is the probable magnitude of change in these variables as a result of the planning study as perceived by the policymakers. Note that these considerations are both based upon the perceptions which the policymakers have about something, not the something itself.¹

If unimportant variables are involved in the planning study as perceived by the policymakers, then the degree of change would be considered insignificant. If important variables are involved, but their probable magnitude of change is small, then the degree of change might possibly become significant. However if important variables are involved in the planning study as perceived by the policymakers and their probable magnitude of change is large, then the degree of change would be significant.
Fig. 6. Degree of Change
Degree of Information Grasp

The information grasp that the policymakers have of the change discerned in the state educational finance system is composed of two factors. The primary consideration is the availability of relevant information to the policymakers. The secondary consideration is the policymakers' capacity to utilize this relevant information to make decisions.\(^2\)

If relevant information is relatively unavailable to the policymakers, then the planners will have a major mission ahead to obtain this relevant information. Even if this relevant information is relatively available, they may have a major mission ahead to provide the policymakers with it if their capacity to utilize it is lacking.

<table>
<thead>
<tr>
<th>Availability of Relevant Information</th>
<th>Capacity to Utilize Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Low</td>
</tr>
<tr>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Large</td>
<td>Moot</td>
</tr>
</tbody>
</table>

Fig. 7. Information Grasp
Planning Study Setting Based Upon Degree of Change and Information Grasp

The first two of these environmental circumstances can be combined as the intersection of two continua to illustrate the four fundamental policy-making settings in which the planning system will be operating. A relationship exists between these settings and the type of a group selected to conduct the planning study.  

![Diagram](image)

Fig. 8. Planning Study Setting
Setting Based Upon Formality and Internality/Externality

The degree of formality desired by the policy-makers for the planning study and the degree of internality/externality which they want it to possess are related to the type of group selected to conduct it.⁴

<table>
<thead>
<tr>
<th></th>
<th>Internal</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal</td>
<td>Staff</td>
<td>Consultant</td>
</tr>
<tr>
<td>Formal</td>
<td>Committee</td>
<td>Commission</td>
</tr>
</tbody>
</table>

Fig. 9. Planning study setting based on type of group to conduct planning study.
Degree of Congruence Between Systemic Agenda and Institutional Agenda

The systemic agenda for the planning study mission would be the set of alternatives perceived by those actors involved in it as being legitimate concerns for the mission. The institutional agenda for the planning study mission would be the set of alternatives which actually are scheduled for formal consideration for the mission. The fundamental issue is the degree to which the content and the priorities of the former received expression in the latter.\textsuperscript{5}

To the degree that demands for change become unrecognizable alternatives for consideration on the agenda for the mission, the policymakers or contractors may enjoy stability in the short run. But they do so by permitting social frustrations and conflicts to fester.\textsuperscript{5}

However, to the degree that demands for change dominate the considerations for the agenda of the mission, the policymakers may be headed towards immediate and enervating stress.\textsuperscript{5}

Some degree of congruence is necessary between the systemic agenda and the institutional agenda for the mission of the planning study, because these two agendas will be in dynamic tension. That degree will have to be determined carefully by the policymakers in conjunction with the planners.\textsuperscript{5}
Antecedent Causing Planning Study

In analyzing the setting, the planners conduct an abbreviated antecedent analysis. An antecedent analysis is the process of analyzing the more significant of the educational, economic, political, and social trends and movements causing a planning study of a state's educational finance system. This analysis should be conducted on those variables and parameters which are introduced in the process of designing the planning study. In this work package the trends established by these variables and parameters and the movements associated with these trends will be analyzed to the extent necessary for designing the planning study.6

The analysis of the antecedent movements associated with the trends in the educational, economic, political, and social variables and parameters is more complex than the analysis of the trends. However a careful analysis should reveal important considerations which would allow for a greater likelihood of success in the design of the planning study. In other words, a study of the antecedent movements causing the planning study should lead to a better product.

The identification of the antecedent trends established by identified educational, economic, political and social variables and parameters should be relatively easy
to establish. With each variable and parameter, the planners have only to specify their status periodically over a period of time; for example, one, three, five, and ten years ago; or perhaps every year for the last decade. An antecedent trend is a tendency or pattern over a period of at least several years in one of the identified variables.

Footnotes - Appendix C


2Ibid., pp. 66, 67.

3Ibid., pp. 61-63.


6Ibid., pp. 13, 14; and Phi Delta Kappa National Study Committee on Evaluation. . ., p. 153.
APPENDIX D

LIMITS, CONSTRAINTS, AND POLICIES
FOR THE PLANNING STUDY

Introduction

The limits and constraints for the planning study are the conditions, boundaries, obstacles, and other restrictions which may affect the accomplishment of the mission. The limits are usually imposed by the policymakers while the constraints are usually imposed by the planners. The policies for the planning study are the principles, guidelines, and procedures which will control the components involved in producing useful information.¹

Limits

The limits imposed by the policymakers on the planning study are fiscal, legal, time, spatial and facility, personnel and staff, materials and supplies, capital outlay, and other restrictions. Each of these should be thoroughly communicated to the planners.²

Constraints

The constraints imposed by the planners on the planning study are existing research and knowledge, technical feasi-
bility, realistic expectancy, planner performance, and other restrictions. Each of these should be thoroughly understood by the policymakers.
Policies

The policies involved in producing information include the determinations of the following:

1. What it is the planners want to know:

   The information needed for descriptive purposes
   The information needed for comparative purposes
   The information needed for explanatory purposes
   The information needed for predictive purposes

2. How it is the planners are going to find out what it is they want to know:

   The methods to be used in the analysis of the data
   The methods to be used in the measurement of the data
   The methods to be used in the sampling of the data
   The methods to be used in the treatment of the data

3. What assumptions are going to be made:

   The assumptions to be made in the analysis of the data
   The assumptions to be made in the measurement of the data
   The assumptions to be made in the sampling of the data
   The assumptions to be made in the treatment of the data

   The policies and the procedures to be followed in collecting, organizing, storing, retrieving, analyzing and reporting the data:

4. Data Access

   The existing data sources and the existing data bases to which the planners will have access
   The data sources and the data bases which will have to be developed by the planners
   The data collected by the planners to which those external to the planning study will have access

5. State agency/organization cooperation

   The state agencies with which the planners will be working and the degree to which they will be working
   The state organizations with which the planners will be working and the degree to which they will be working
6. Quality Control

The policies and the procedures to be implemented for quality control

7. The reporting setting

The date the information is needed
The intended audiences for the information
The level of information which should be reported
The degree of formality desired
The degree of internality/externality desired

8. The reporting methods

The style and format which should be used in reporting
The characteristics which the report contents should have
The reporting media which should be used

Footnotes - Appendix D

1Desmond L. Cook, Educational Project Management (Columbus: Merrill, 1971), p. 127.

2Ibid.

3Ibid.


5Ibid.

6Ibid., pp. 159, 160.
Although reporting may appear to be a terminal activity in the planning study, it should actually be an ongoing process throughout the entire study. The initial determination to have a planning study, the designing of it, the assessment of needs, the determination of objectives, the priority alternative methods/means, the selection of final methods/means, and the field test should all possess some useful information which should be communicated at least with the policymakers or contractors if not with other audiences too.

Information which is too late cannot be very useful. The report of the best planning study is not of much value if it arrives after the legislative education committees have drafted final copies of bills to change the state educational finance system.

The reporting setting follows from the setting analysis in Appendix C. In that component the roles of the various actors involved in the planning study are delineated. The policies regarding their involvement are specified in
"Limits, Constraints, and Policies" in Appendix D.
The task of identifying the reporting audiences should now be an easy one.

The task of depicting the appropriate level of information will follow from the identification of the reporting audiences. Different audiences may require different levels of detail. Policymakers may require only a broad summary report, whereas operational level decision-makers may require a great deal more detail.

The methods selected for reporting would best be determined in consultation with a media specialist. The agency for which the planning study is being done or the organization performing the study should have professionals with publication expertise.

The published report must meet the criteria agreed upon by the planners and the policymakers or contractors, although these may be amended through mutual agreement. Of primary concern to the planners should be the effectiveness of the information provided. This information must be written in such a way that it communicates with the target audience. If different target audiences are intended, perhaps reports with differing levels of details, formats, and styles should be prepared. If a considerable amount of quantitative information is to be conveyed, graphic and tabular presentations should be utilized.
The methods and means used to publish and disseminate the report should be determined in conjunction with the policymakers or contractors. In all probability they will have a means for publishing and disseminating it. In fact since the report is theirs, they may prefer to disseminate it.
APPENDIX F

EVALUATION OF PLANNING STUDY

Introduction

Every planner should employ some methods and means to evaluate his planning study. A planning study can be viewed two ways for the purpose of evaluating it: its processes and its products. Evaluating the processes is an assessment of the component activities while in progress. Evaluating the products is an assessment of the degree of attainment the planning study has based upon its mission. Evaluating both processes and products provides feedback for the purpose of controlling the planning study. As the planning study begins, evaluating the processes predominates. But as the planning study progresses, evaluating the products emerges.
Evaluating the Processes

Evaluating the processes should:

1. monitor the component activities as they are being performed,
2. maintain a record of the component activities as they occur,
3. detect potential defects in the design of the planning study,
4. assess potential discrepancies in the planning study,
5. correct for any defects of discrepancies as the planning study occurs, if necessary.

As the planning study is in progress, the planners should be monitoring the components and the work packages. While monitoring these, a record can be made for the purpose of helping to determine later why the mission succeeded or failed. As the monitoring is being conducted, potential defects in the design of the planning study may be detected. Also discrepancies with the management profile may be assessed to determine if a correction is necessary. Thus, evaluating the processes leads ultimately to decisions about changing the planning study while it is in progress.
Evaluating the Products

Evaluating the products should (1) assess the degree of attainment the planning study has based upon the mission and (2) assess the information being produced against the criteria of usefulness.3

The criteria of usefulness for information come in three classes. First the information must be applied to scientific criteria that assess the adherence of the information as closely as possible to whatever it is that is represented by the information. Second, the information must be applied to practical criteria that assess the informativeness which it possesses for the policymaker. Third, the information must be applied to a prudential criteria of cost-efficiency and cost-benefit/cost-effectiveness.4

The scientific criteria are:

1. a one-to-one correspondence between the information and the phenomena that it represents (internal validity),
2. the generalizability of the information (external validity),
3. the consistency of the information (reliability), and
4. free from human bias (objectivity).

The practical criteria are:

1. the purposes which the planning study was to serve (relevance),
2. the significance which the information possesses (importance),

3. the range of information (scope),

4. the quality of trust or belief held for the information (credibility),

5. providing the information when it is required (timeliness), and

6. all of those who should, do in fact, know about and use the information (pervasiveness).

The prudential criteria are:

1. the planning study processes based upon their respective costs are realistic (cost-efficient), and

2. the planning study outputs based upon their respective costs are realistic (cost-benefit/cost-effective, depending upon the degree to which the outputs can be quantified in dollar units).

Footnotes - Appendix F

1Phi Delta Kappa National Study Committee on Evaluation, Educational Evaluation and Decision-Making, pp. 213, 224, 225.

2Ibid., pp. 213, 229-232.

3Ibid., pp. 232-235.

APPENDIX G

PANEL OF EXPERTS WHO REVIEWED DRAFTS OF THE PLANNING SYSTEM AND ITS ENVIRONMENTAL POLICY FORMATION SYSTEM

In addition to the doctoral dissertation reading committee, criticisms were sought from the sources below of the planning system and/or its environmental policy-formation system.

These reviewers were given an introduction to the study which included the study's background and purpose. They were asked to revise, refine, and extend the planning system and/or its environmental policy-formation system. Their proposed alternatives for change were accepted either in writing or orally.

Dr. Kern Alexander, Director
Institute for Educational Finance
University of Florida

Mrs. Nancy Benda, Consultant
Research and Development Section
Florida Department of Education

Mr. R. Stephen Browning, Counsel
Lawyers' Committee for Civil Rights under Law

Mr. Donald E. Ferguson
Planning and Management Consultant
North Carolina Department of Education
Dr. Robert Garvue  
Professor of Educational Administration  
Florida State University

Dr. Gilbert L. Gentry, Chief  
Bureau of Finance and Business Services  
Florida Department of Education

Mr. Michael Knight, Consultant  
Educational Innovations Section  
Florida Department of Education

Dr. Clem Lausberg  
School Finance Task Force  
United States Office of Education

Dr. William L. Malloy, Executive Director  
Florida Governor's Citizens Committee on Education

Dr. Dave Montgomery, Director of Planning  
Board of Regents  
Florida Department of Education

Mr. Herman O. Myers, Associate Commissioner  
Budget Planning and Development  
Florida Department of Education

Mr. Julian Roberts, Administrator  
District Planning Section  
Florida Department of Education

Mr. Lee Roberts, Chief  
Bureau of Planning  
Florida Department of Education

Dr. Stan Rumbaugh  
Director of Research and Evaluation  
Michigan Department of Education
APPENDIX H

PANEL OF EXPERTS WHO ASSESSED THE
USEFULNESS OF THE INFORMATION
PRODUCED IN THE TWO TESTS OF THE
PLANNING SYSTEM

The planning system was tested in a Florida setting. Two applications of the planning system were developed by the author, and presented to a panel of experts. These experts were selected based upon their potential to judge the usefulness of the information produced by the planning system for policymakers to use in judging alternatives about the Florida Education Finance Program. The panel members, as indicated in the list below, received one or both of the applications ("B" indicates the application involving deficiencies in basic skills, and "V" indicates the application involving vocational occupational supply and demand information.):

B, V  Dr. Kern Alexander, Director of the Institute for Educational Finance, University of Florida

B  Dr. Tom Fisher, Administrator of Student Assessment, Florida Department of Education

B, V  Dr. Jim Hale, Professor of Educational Administration, University of Florida

B, V  Dr. Marshall A. Harris, Staff Director of the Florida Education Council, Florida Department of Education (formerly an Educational Finance Economist with
the Education Finance Center of the Education Commission of the States

B,V Dr. Link Jarrett, Associate for Policy Analysis, Office of Educational Planning, Budgeting, and Evaluation, Florida Department of Education

B,V Dr. R.L. Johns, President, Educational Finance and Management Institute, Inc., University of Florida

B,V Dr. Roger A. Kaufman, Director of the Center for Needs Assessment and Planning, Florida State University

B,V Mr. Michael Knight, Associate with the Center for Needs Assessment and Planning, Florida State University

B Mr. John W. Patrick, Administrator of Middle and Secondary Education, Florida Department of Education

B Mrs. Ada P. Puryear, Administrator of Early Childhood and Elementary Education, Florida Department of Education

B,V Mr. Julian Roberts, Administrator of Planning, Research, and Evaluation, Florida Department of Education

B,V Mr. Lee Roberts, Chief of Bureau of Management Systems and Services (formerly Chief of Bureau of Planning), Florida Department of Education

B Mr. Phil Rountree, Administrator of Compensatory Education, Florida Department of Education

V Mr. John Sojat, Director of Vocational Planning, Programming, and Budgeting, Florida Department of Education

V Mr. Jim Williams, Specialist in Vocational Planning and Budgeting, Florida Department of Education

The two pages which follow illustrate the cover memoranda which accompanied each application of the planning system when it was presented to the panel of experts.
Subject: A Plan for Proposing Alternative Changes in State Funding of Basic Education

During the past several years I have been developing a planning system for producing useful information for policymakers to judge proposed alternative changes in a state educational finance system. My present stage of development is that of pilot-testing the planning system. One of the pilot-tests involves applying the planning system to the area of basic education. My request of you is to assess the usefulness of the information produced in this application for state level policymakers to judge the alternative changes proposed for the Florida Education Finance Program. "Usefulness" can be defined to include validity, reliability, objectivity, relevance, importance, scope, credibility, and other similar criteria which you may wish to include.

As you read through the attached pilot-test application, please jot down your ideas on it freely. Please do not feel that it is necessary to reply to me formally in writing. By combining your notes with a phone conversation or brief visit, I can save you valuable time during this busy legislative season. I shall be calling you in two weeks to obtain your assessment. If you have any questions before then, please feel free to call me at 487-2280. Please sign, date, and time the enclosed Behavioral and Survey Research Form and return it to me.

For your information, the development of this planning system is a part of my doctoral dissertation. Your assessment of the attached pilot-test is one of the final stages in this part of the dissertation. The planning system (1) begins with a state's goals for education; (2) identifies concerns, values, and expectations within the framework of these goals; (3) analyzes the present status of variables identified by the values and expectations; (4) assesses needs based upon the difference between "where we should be" expressed by values and expectations and "where we are now" expressed by the present status of the value and expectation variables; (5) formulates alternative strategies to resolve these needs; (6) analyzes these alternative strategies; and (7) reports the alternative strategies having the greatest likelihood for resolving the needs to policymakers for their consideration. The determination of need in the planning process facilitates an accountability determination following the implementation of any of the alternative strategies by the policymakers.

I shall appreciate very much any comments you may have. Much of my original work from several years ago has changed significantly because of suggestions from others, and I would like very much to have yours.

Note: Because this paper is a draft, many footnotes have been omitted. They will be included in the final draft.
Subject: A Plan for Proposing Alternative Changes in State Funding of Vocational Education

During the past several years I have been developing a planning system for producing useful information for policymakers to judge proposed alternative changes in a state educational finance system. My present stage of development is that of pilot-testing the planning system. One of the pilot-tests involves applying the planning system to the area of vocational education. My request of you is to assess the usefulness of the information produced in this application for state level policymakers to judge the alternative changes proposed for the Florida Education Finance Program. "Usefulness" can be defined to include validity, reliability, objectivity, relevance, importance, scope, credibility, and other similar criteria which you may wish to include.

As you read through the attached pilot-test application, please jot down your ideas on it freely. Please do not feel that it is necessary to reply to me formally in writing. By combining your notes with a phone conversation or brief visit, I can save you valuable time during this busy legislative season. I shall be calling you in two weeks to obtain your assessment. If you have any questions before then, please feel free to call me at 487-2280.

For your information, the development of this planning system is a part of my doctoral dissertation. Your assessment of the attached pilot-test is one of the final stages in this part of the dissertation. The planning system (1) begins with a state's goals for education; (2) identifies concerns, values, and expectations within the framework of these goals; (3) analyzes the present status of variables identified by the values and expectations; (4) assesses needs based upon the difference between "where we should be" expressed by values and expectations and "where we are now" expressed by the present status of the value and expectation variables; (5) formulates alternative strategies to resolve these needs; (6) analyzes these alternative strategies; and (7) reports the alternative strategies having the greatest likelihood for resolving the needs to policymakers for their consideration. The determination of need in the planning process facilitates an accountability determination following the implementation of any of the alternative strategies by the policymakers.

I shall appreciate very much any comments you may have. Much of my original work from several years ago has changed significantly because of suggestions from others, and I would like very much to have yours.

Note: Because this paper is a draft, many footnotes have been omitted. They will be included in the final draft.
APPENDIX I

RESPONSES FROM PANEL OF EXPERTS TO TWO TESTS OF PLANNING SYSTEM

Respondent "A", response to both tests:

1. After our telephone conversation the other day I decided not to mail the letter which I had previously written to you; I have reflected everything I had to say. I do think your paper is an excellent summary of recent actions taken by the Legislature and the Department of Education.

2. I plan to keep the paper and use it for my own information; however, I still do not see the overall thrust of the discussion and how each of the components fit together into a dissertation. I am sure that once you get the entire paper together that this will be quite clear but presently I have several missing pieces.

Respondent "B", response to first test:

1. The three goals identified in the first section do not completely encompass the scope of K-12 public education.

2. The principal verb in all three goals should be "shall".

3. The last sentence in the Vocational Competencies goal should read "to assure that the needs of Florida's workers are met."

4. The statement quoted for Section 230.2311, F.S., is the present context, not that which was enacted in 1971.

5. The competencies identified in the Minimum Student Performance Standards are not those required for everyday living.
6. The last sentence in the last paragraph of the section on Analysis of Concerns and Values should be rewritten to place the phrase "needs can be identified" at the beginning of the sentence.

7. In the last sentence of the seventh paragraph of the section on Analysis of Present Status the conjunction should be "as well as" rather than "both . . . and."

8. The thirteenth paragraph of the section on Analysis of Present Status is redundant.

9. The first sentence of the fifteenth paragraph should be rewritten to read "As can be seen, Florida students on the average outscored about 40 percent of their national counterparts . . . "

10. The compliance percentages for the Minimum Student Performance Standards should be combined with the statements of the standards.

11. In the statement of need, 25% or 50% is too low.

12. In the first, third, and fourth paragraphs of the section on Formulation of Alternative Strategies, no comma should appear before the "or" in each series.

13. In alternative A, students do not have deficiencies; they have needs.

14. In the eighth paragraph of alternative A the fourth sentence should read "Most of the early grades' curriculum emphasizes communications, thereby making assessment in mathematics difficult."

15. In the eighth paragraph of alternative A a sentence should be added to point out that since 1974 more emphasis has been made at the state level in early childhood and elementary education.

16. At the end of alternative B it should be pointed out that elementary principals in the state are against many of the proposed alternative restructurings of the grades.

17. In alternative D the use of the word "improvement" is good.

18. In alternative F the reference to early and middle childhood education programs should be to the early childhood and elementary along with the middle and secondary education programs.
19. In alternative F it should be pointed out that because of the program compliance and performance audits, there may not be sufficient staff to offer technical assistance too.

20. In alternative F it should be pointed out that other more conventional means of offering technical assistance exist also.

21. In the findings and conclusions section, why cannot multiple alternatives be considered?

Respondent "C", response to first test:

1. In the section on "1977-78 Florida Assessment Program Results," the word 'Unfortunately' was a poor choice of words. National averages are not necessarily good, and the state moves too slowly compared with national averages to show much change. State standards are better than national ones.

2. Comments by Gene Glass should be deleted. He never defined "arbitrary" in his criticism of the Florida Assessment Program. The 70% cutoff had to be made somewhere.

3. The 25 and 50 percent criteria in the need statement is too low. 100% would be better, but it would probably cost out at about $200 million.

Respondent "D", response to first test:

1. Paper is quite interesting, but needs a more precise lead-in to tell the reader exactly what you intend to do.

2. Several of the alternatives appear to have merit, but a lack of analysis would potentially prevent me from reaching the same conclusion reached in the paper.

3. The information base for the alternatives should be expanded.

4. Goals for education should be related to statute.

5. Define need at the beginning of section on needs assessment.

6. Need should be more closely tied to values.
7. Need statement is almost an objective.

8. Develop a program policy structure to broaden the analysis of the alternative strategies.

9. Alternative B could be expanded to consider a state program structure.

10. Alternative C needs more analysis on potential cost.

11. Alternative D was well treated as an alternative strategy. I am not sure how you arrived at the conclusion that alternatives D, E, and F are superior alternatives. What have other states and districts found in E.S.E.A., Title I programs? I really think that your alternatives need more work; perhaps a limited review of the literature on each alternative would help.

Respondent "D", response to second test:

12. Consider other factors determining program offerings besides supply-demand, for example, delivery system considerations, social demand, and rate of return. Individual choice is still important.

13. A question of governance regarding what level should make decisions about courses to be taught may cause problems.

14. Rather than using discounts for over supply courses, a course fee might be established.

Respondent "E", response to first test:

1. I have read through your plan and cannot add, delete, or modify it in any way.

2. While I understand that the state has basic skill goals and objectives (standards), I do not know whether I could accept them as valid and useful unless they were derived from an "alpha" type needs assessment. As you know, they were not. But one uses what one has to work with.
Respondent "E", response to second test:

3. Needs assessment is an alpha or beta type.

4. The approach used in assessing needs is sound.

5. Respondent read the proposal twice, but found no problems with it.

6. Respondent considered information presented to be useful.

Respondent "F", response to second test:

1. More work needs to be done before this proposal could be presented to policymakers.

2. The ideas in this proposal need more input from researchers.

3. The 400 occupational titles now available for interfacing with vocational education programs will be expanded to 1200 in the fall of 1978.

Respondent "G", response to first test:

1. In alternative D, state compensatory funds are presently going largely to the upper grades because E.S.E.A., Title I funds are going largely to the lower grades.

2. Needs assessment approach was good and logic was sound.

3. Analysis of data in alternative D was good.

Respondent "H", response to both tests:

1. More background on the Florida Education Finance Program should be presented.

2. The relationship of funding to goals and needs is good and is needed.

3. The information produced is useful.
Respondent "I", response to first test:

1. Work is coming along well in my opinion. In one parlance, this is describing an internal type of needs assessment, and perhaps a delta variety at that—which is O.K.

2. The user should be cued about the scope and limitations of this model, perhaps showing that this effort relates only to inputs, processes, and products, and not to outputs and/or outcomes.

3. Goals are processes which are external to the educational system, that is survival outside of school.

4. Table 4 is unclear; label it better.

5. Good not to use "need" as a verb, only use it as a noun.

6. In alternative D why differentially fund differences in staffing patterns if differences in results cannot be detected?

7. In alternative D you are costing out input and process. What about pricing output and outcomes?

Respondent "I", response to second test:

8. A fast review of the attached document convinced me to read it again. It is a careful, well-thought-out document, and should be a vast improvement over previous ways and means. I particularly liked the desire to predict future requirements, and the fact that you used the definition of need as a gap in results, not just gaps in processes, inputs, or products.

9. I do have some concerns with your method, but most of which I have not a ready solution. One of these is a referent which is more than looking at jobs and job placements, but to add a referent for survival and contribution. Another problem might arise in the way in which future occupational requirements are generated— from extrapolations from current business trends. While this is the "only game in town" currently, it does restrict us from considerations of very rapid changes in social and technological requirements which have not been generated within industry and the military as of this writing—remember our "sudden" change in
energy as a result of the Arab oil embargo? Some such projections might be worth considering in future needs assessment models.

10. Again I think you are making a significant contribution to the state of the art. Most of my concerns are related to future activities and models, and I just do not want to see future models foreclosed by the adoption of a model which does not have "growth" amendments possible. I see this as not a problem of yours or your model, but one which should be the subject of attention and provision by those above you who adopt and implement your model. I would ask you to consider making a recommendation that future requirements and procedures would be considered for adoption periodically, perhaps every two years.

Respondent "J", response to first test:

1. Needs exist above the Minimum Student Performance Standards also, but they have not been considered. All students have needs.

2. Statement of need should qualify that the public school students who are being addressed are those who are educable.

3. Some authorities believe that the higher achieving students should receive more funds than the lower achieving ones, for example, Dr. J. Alan Thomas at the University of Chicago.

4. Limitations of categorical funds should be discussed. In most states a categorical program such as that presented in alternative D would be disequalizing. Because Florida is fairly well equalized, such a categorical approach is acceptable.

5. The first criterion of supplementation discussed in alternative D permits the gaps in E.S.E.A., Title I funding to be filled.

Respondent "J", response to second test:

6. The projection for occupational supply is based upon an assumption that "growth will occur in such a way as to make straight-line interpolations meaningful." Such an assumption is unsound because growth in a straight line is not too common.
7. Limitations of categorical funds should be discussed with alternative C.

8. This respondent believed that the methodology used in these two tests was worthy of being pursued for proposing changes in state funding formulas.

Respondent "K", response to second test:

1. In developing a cross reference system to relate occupational codes to Office of Education program codes, the Bureau of Vocational Planning and Budgeting involved other Department of Education staff from the Commissioner's Office, the Division of Community Colleges, and other bureaus of the Division of Vocational Education.

2. The problems which exist with the projections as summarized in the needs assessment section apply for state level funding purposes but not for other purposes.

3. The 400 occupational titles now available for interfacing with vocational education programs will be expanded to 1200 in the fall of 1978 to provide a more accurate disaggregation of the database.

4. Two existing practices related to alternative E are Computer Assisted Placement Service and Vital Information for Education and Work.

Respondent "L", response to first test:

1. Assessment data is needed along with actual expenditures to make valid cost estimates for alternative D.

2. The estimate of $300 per full-time equivalent student used in alternative D as a minimum amount appears to be sound based upon available data.

3. The test data used to establish a need has been logically presented and appears to establish a need soundly.

4. The assumption that the number of full-time equivalent students for 1978-79 will be double that for 1977-78 in alternative D is sound.
Respondent "M", response to first test:

1. With respect to the analysis of the educational finance alternatives, right on!

2. The exemplars (educational finance alternatives) used are good, but they should be qualified so that the reader knows that they are just that. In other words, the reader should be told that the purpose of the exemplars was not exhaustive analysis.

3. Why are some exemplars analyzed so much more thoroughly than others?

4. Alternative C has the quality of fiscal modification which alternative D does not possess. Hence, it should perhaps be considered more seriously.

5. The analysis of test data and the needs assessment sequence was good.

6. Other program related alternatives should be considered; for example, program reviews of inefficient and ineffective programs to determine better reallocation of existing resources, disaccreditation of a school which is not using resources wisely, etc. Perhaps an "other" alternative is needed just to keep the reader brainstorming new ideas.

7. More policy analyses should be done with needs assessments in school finance studies.

8. Useful information has been produced.

Respondent "M", response to second test:

9. Too much is based upon tenuous projections of manpower demand data.

10. Funding discounts would create staffing problems for small districts.

11. Provision should be made for use of revised projections during training periods developed with existing projections.
A number of the responses by the panel of experts could not be added to or deleted from the two applications of the planning system. Each of these responses will be listed below. The reason(s) why each was not used will be given.

A,1 No explanation necessary.
A,2 No explanation necessary.

B,2 All official publications of the Florida Department of Education which state the goals for education use the same words which this study uses. Perhaps the verb should be "shall" to be consistent with the other goals' verbs, but it is not.

B,3 All official publications of the Florida Department of Education which state the goals for education use the same words which this study uses. Perhaps the proposed change is better grammar than that which is used.

B,11 A need percentage of more than 50% is in the opinion of this author not politically feasible because of the cost.

B,21 Multiple alternatives can be and are considered in the findings and conclusions.

C,2 The respondent indicated that the application as presented was in good form for a dissertation. However, if the issues presented were to represent the Florida Department of Education, then this change should be made.

C,3 This author did not choose a need criterion above 50% because of the political realities of the cost. For example, the 100% level would cost out at about $200 million as the respondent indicated. This is about 19 times the cost of the 50% level, about 44 times the cost of the 25% level, and about 7 1/2 times the cost of the 1977-78 State Compensatory Education Program.

D,1 A more precise lead-in is provided in the dissertation. The author was attempting to keep the two applications as brief as possible in order to improve the likelihood of their being read by the respondents.
All of the alternatives have merit or they would not have become alternatives. Some have more merit than others; those that did in the author's judgment were given an initial analysis as well as a refined analysis. It is quite likely that another analyst might arrive at different conclusions. However, the purpose of this application was to test the planning system by involvement of just the author. If a test could have been arranged with a team of analysts, perhaps different results would have been produced.

The author was working under the constraint that only available data would be needed. If more data would have been available, more information could have been produced. A number of comments in each application refer to possible data which would have been useful. In addition it was considered desirable to keep each application brief enough not to discourage respondents from taking their valuable time to read through them. For this reason, the information presented was kept to a minimum.

The values used were the Minimum Student Performance Standards. The need statement was very closely tied to these. Other values related to national assessments were purposely not used in the need statement for reasons given.

Right! The author would have preferred an objective, but did not use it because of previous objections from Florida Department of Education administrators. The less related to an objective the need statement becomes, the less accountable educators will be for the funds appropriated.

The author was working under the constraint that program or curriculum alternatives and analyses would be required, although several were used to present a more rounded set of alternatives.

A state program structure was proposed in 1974 and 1975 to Florida Department of Education administrators and rejected as being infeasible. This author was a member of the team who developed it. Therefore, it was not considered a viable alternative here.

An analysis on potential cost is only performed on those alternatives which are selected for the refined analysis. Even then if the potential cost is small, little analysis is done.
D,11 Refer to the discussion above under D,2; D,3; D,8; D,9; and D,10.

E,1 No explanation necessary.

E,2 The author had no choice but to use the accepted goals if they were to be used at all. Not using them might have caused more problems than using them, since most policymakers recognize them as valid.

E,3 No explanation necessary.

E,4 No explanation necessary.

E,5 No explanation necessary.

E,6 No explanation necessary.

F,1 In the needs assessment section of this application the author identifies much of the work which does need to be done before this proposal should be presented to policymakers.

F,2 Refer to F,1 above.

G,2 No explanation necessary.

G,3 No explanation necessary.

H,1 More background is presented in the dissertation. The author assumed that every member of the panel of experts would have a good foundation on the Florida Education Finance Program since all were from Florida. In addition the author was attempting to keep the applications as brief as possible to improve the likelihood of their being read by the respondents.

H,2 No explanation necessary.

H,3 No explanation necessary.

I,1 No explanation necessary.

I,2 The first application does not relate to outputs and/or outcomes, the second application does.

I,3 The author saw no reason to include this point in the application.
I,5 The author did not use "need" as a verb, only as a noun.

I,6 As stated in alternative D, differences in results were not available at the time the analysis was performed. Also as stated such results would have been very desirable for analysis purposes.

I,7 Refer to the discussion above under I,6.

I,8 No explanation necessary.

I,9 The author agrees with the respondent, but the respondent also recognizes the author used the "only game in town."

I,10 No explanation necessary.

J,8 No explanation necessary.

L,1 The author agrees and so stated the issue in the application.

L,2 No explanation necessary.

L,3 No explanation necessary.

L,4 No explanation necessary.

M,1 No explanation necessary.

M,2 In the introductory part of the chapter in the dissertation where the two applications are presented the author does point out that the applications are pilot-tests of the planning system.

M,3 The planning system has an initial assessment and a refined assessment. Those alternatives which are judged superior in the first one are then subjected to the second one. The priority selection process in the planning system explains this procedure.

M,4 In 1974, the Florida Legislature enacted a compensatory supplement to the Florida Education Finance Program which was similar to alternative C. However this supplement was never appropriated. In 1977 when the Legislature finally appropriated a compensatory program, they repealed the compensatory supplement and funded a categorical program. Therefore the author believed this alternative to be politically infeasible.
M,5  No explanation necessary.
M,6  Refer to D,8 above.
M,7  No explanation necessary.
M,8  No explanation necessary.
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