

A Study of the Discontinuance of Formula Funding of
Institutions of Higher Education in the Commonwealth of Virginia

by

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(ABSTRACT)

The formula method of allocation was used in the Commonwealth of Virginia to fund institutions of higher education from 1968 until the recession of 1990. Prior to the early 1990s recession, operational funding for institutions of higher education in the Commonwealth was derived from a framework for staffing guidelines, faculty peer-group benchmarks, and a student tuition policy. Revenue shortfalls caused by the recession were insufficient to fund the resources demanded by the guidelines or funding formulas. This led to the discontinuance of the funding formulas that had guided Virginia's higher education funding for more than two decades (Report of the Joint Subcommittee on Higher Education Funding Policies, 1999).

The purpose of the study was to find out how and why the decision was made to discontinue formula funding of institutions of higher education. The decision-making process at the state level is often complex, uncertain, and difficult. The emphasis of the study was to examine the rationale for discontinuing formula funding for resource allocation to institutions of higher education. The study explored why the Commonwealth of Virginia made this important decision.

The subjects of the study are the state-level decision-makers responsible for funding institutions of higher education in the Commonwealth of Virginia. Information on how and why the Commonwealth of Virginia reached the decision to discontinue formula funding could only be obtained by in-depth interviewing of the participants in the decision-making process.

Data were analyzed using the four streams of Cohen and March's decision making model. Triangulation of the data served as a means of data validation. Conclusions and recommendations for future study and practice are included.

The major findings were that there were many complaints regarding the former formula funding model. The model was a demand driven, rigid input based model that was not linked directly to state revenues. The model was not mandated by the Code of Virginia as was K-12 formula.

As required with time-sensitive matters, decisions have to be made to address the issues at hand. The funding formulas were simply discontinued in the face of adversity. Consensus was basically that the demand driven formulas were the wrong methodology given the recession and demands for attention in other areas.

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CHAPTER ONE

INTRODUCTION

The formula method of allocation was used in the Commonwealth of Virginia to fund institutions of higher education from 1968 until the recession of 1990. Prior to the early 1990s recession, operational funding for institutions of higher education in the Commonwealth was derived from a framework for staffing guidelines, faculty peer-group benchmarks, and a student tuition policy. Revenue shortfalls caused by the recession were insufficient to fund the resources demanded by the guidelines or funding formulas. This led to the discontinuance of the funding formulas that had guided Virginia's higher education funding for more than two decades (Report of the Joint Subcommittee on Higher Education Funding Policies, 1999).

Formula funding or budgeting is a technical method of allocating the state's financial resources to the institutions of higher education. By itself, formula driven budgeting does not directly address the issues of higher education; however, it does form the basis for decision-making and a means of quantifying resource allocations.

In the United States, resource allocation using formulas came into popular use following the post-World War II enrollment growth in higher education. From 1961 to 1972, financial support for higher education increased by more than 160% (Sigmon, 1971). The increases in financial resources were required to meet expanding enrollments, expanding scope of operations, and the expanding economy.

As financial resources increased, legislatures and governors recognized a need to develop systematic methods of allocating resources and to assure accountability. According to Hungate (1964) the requirement of accountability is based on the idea that "the public wishes to derive maximum benefits from the funds expended; secure honest, careful and businesslike management and accounting of funds and be assured that just the right amount is being spent" (p. 232).

In contrast with the demands for tax dollar accountability is the desire of institutional autonomy. Institutions attempt to balance the two competing demands within the confines of fiscal controls. In an attempt to solve the apparent conflict, many states developed and implemented funding formulas. Formulas provided a means for estimating resources and allocating the appropriated resources. Robbins (1973) describes a funding formula as a procedure developed to estimate the financial requirements of an institution utilizing predetermined sets of ratios and/or cost parameters.

The concept of funding formulas can be traced back to the 1930s when John Dale Russell developed cost analysis methods for higher education. In 1935, the National Commission on Standard Reports for Institutions of Higher Education issued its publication *Financial Reports for Colleges and Universities*. The Commission's financial standards remained largely unchanged until the 1950s when the American Council on Education (ACE) performed a major revision of the original standards. With the general feeling of adequacy of resources, Russell's methods were not integrated into the budgetary process until the 1950s. Coinciding with Russell's work was the development of uniform accounting principles for higher education.

With the advances and revisions of Russell's concepts, and the standardized accounting guidelines, the foundation for formula funding was established. Implementation of formula funding was first introduced in California and Texas. California developed a faculty staffing formula and used it to estimate 1951 budget requirements. Concurrently, Texas developed a

formula for estimating the financial resources required for its statewide system of higher education.

The most prolific adoption of formula funding by states occurred between 1963 and 1973. During this decade, the number of states using formula funding rose from six to 25. The environment for institutions of higher education was one of expanding enrollments and overwhelming public support. Gross (1973) noted:

Faced with a variety of state-created higher educational institutions, the failure of available state resources to keep up with growth patterns and the public demand for service, the advent of accountability and cost-effectiveness, and the groundswell of public opinion for greater equity in the appropriation of state funds among colleges and universities, it is easy to understand why so many states decided to develop budget formulas to “feed the tigers.” (p.1)

It was during this same period that Virginia adopted formula funding. The original Virginia formula guidelines were developed in 1968 by the Division of Budget to be used as a budgetary evaluation and review technique. During the 1970-72 biennium, the Division of Budget required the institutions of higher education to develop budget requests based on these guidelines. Over the succeeding bienniums, the use of guidelines grew and many revisions were made. Each biennium, state-supported colleges and universities were required to determine financial needs and present operating budget requests. According to the 1984 guidelines, ... not only must the amounts requested, but also the equity with which funds are distributed among institutions must be defended. One effective means by which this can be accomplished is through the use of formulae or guidelines that express and interrelate relevant cost and load measurements. A formula can be defined as a means of estimating the future budgetary requirements of a college or university by using quantitative data about future programs and the established relationships between programs and costs, in such a way as to derive an estimate of future costs. (p. 1)

The guidelines were developed to include five functions. They were to be used to (a) project budgetary needs, (b) justify budgetary requests, (c) clarify the presentation of budgetary information, (d) allocate resources, and (e) standardize budgetary data for comparative analysis.

Virginia’s guidelines included four models to estimate (a) positions, (b) non-personnel unit costs, (c) faculty salary peer group, and (d) tuition policy. Programs such as Eminent Scholars, Funds for Excellence and Commonwealth Centers were funded on competitive grants basis.

Due to the lack of resources to sustain the higher education funding guidelines, they were discontinued in 1990 (Senate Finance Committee, 1997). Between 1990 and 1993, general funding support for Virginia’s institutions of higher education declined by over \$200 million. In an attempt to make-up this shortfall, institutions were granted permission to raise tuition. From 1989 to 1995 tuition at the state colleges and universities increased by 49% (Senate Finance Committee, 1997).

Since the 1990 biennium, the General Assembly has had to decide how best to judge and respond to higher education’s funding requests. The conclusion of a 1997 Senate Finance Committee report stated:

In the absence of funding standards or principles, the General Assembly must grapple each session with how much should be provided to colleges and universities and in what form. In the interim, the Commonwealth has relied upon *ad hoc* approaches to

determining staffing and funding needs, rather than a consistent model that is widely accepted. (p. 18)

It is the desire of the Virginia General Assembly's Finance Committee to have an objective means to judge requests and to allocate resources to institutions of higher education in Virginia.

Research Questions

The research questions that will direct the inquiry in this study are as follows:

1. What problems existed at the state-level that brought about the discontinuance of formula funding of institutions of higher education in the Commonwealth of Virginia?
2. Who were the primary decision makers or participants in the decision making process that brought about the discontinuance of formula funding of institutions of higher education in the Commonwealth of Virginia?
3. What alternatives or solutions were considered instead of discontinuing formula funding of institutions of higher education in the Commonwealth of Virginia?
4. Why was the decision to discontinue formula funding of institutions of higher education in the Commonwealth of Virginia made when it was?

Purpose of the Study

The purpose of the study was to find out how and why the decision was made to discontinue formula funding of institutions of higher education. The decision-making process at the state level is often complex, uncertain, and difficult. This study used the Commonwealth of Virginia's discontinuance of formula funding as an example of how major decisions are made in a bureaucratic and political model. The emphasis of the study was to examine the rationale for discontinuing formula funding for resource allocation to institutions of higher education. The study explored why the Commonwealth of Virginia made this important decision.

Significance

Many important decisions are made by bureaucratic and political organizations each day. While many decisions are routine, some are controversial and fundamental to the strategic plans of colleges and universities. Some of these decisions may change assumptions about what colleges and universities are and how they operate. From the point of view of the college administrator, it is important to understand who makes decisions, the process by which decisions are made, and the other components that enter into the decision-making process. From the point of view of the student, parent, or taxpayer, such decisions have dramatic impact on the quality and quantity of services provided by a college or university. Therefore, it is critical to understand the decision being made as well as the decision-making process. Additionally, there are individuals and interest groups in the business and education fields interested in the state-level decision-making process. Many of these persons seek to understand the process to better influence the decisions being made. Information regarding this process is of great concern to these parties. Formula funding of colleges and universities is an area in which opinions are developed without the benefit of an adequate background in the literature.

State leaders need to know about formula funding, the types of formulas used, and how and why formula funding has been selected by the states using this funding methodology. During the 1998-2000 biennium in the Commonwealth of Virginia, there were three distinct groups preparing funding methodology proposals to be used for resource allocation to institutions of higher education. The groups were the State Council of Higher Education in

Virginia (SCHEV); the Governor's Blue Ribbon Commission on Higher Education; and the General Assembly's Joint Committee on Higher Education Funding Policies. Each group had its own perspectives and objectives on funding, however; there is an obvious desire to return to a more objective methodology of funding higher education.

Currently, there is not a significant amount of work in this area. This study will provide state-level decision-makers with information on changing or establishing college and university funding methodologies.

Theoretical Considerations

Many models have been developed and presented to attempt to explain the decision-making process of an organization. Most models are predicated on a logical, step-by-step basis sequence. Some models account for contingencies that affect the outcome of the decision. Other models better explain the process for certain organizations.

According to Cohen and March (1986), many organizations function in an environment of organized chaos. They present a non-rational model of decision-making in which "decision opportunities are fundamentally ambiguous stimuli" (p. 81). Choice to an entity is defined as "an occasion on which an organization is expected to produce a decision" (p. 81). Given this, a choice opportunity may be viewed as "a garbage can into which various problems and solutions are dumped by participants" (p.81). Several things affect the outcome of the decision, including the nature and number of problems in the garbage can, the number of cans available, and the speed with which garbage is put in the cans. Cohen and March hold that in a Garbage Can Model there are four independent, interacting streams:

1. Problems – Concerns from inside and outside the organization which require attention,
2. Participants – who may come and go, and exert varying amounts of influence,
3. Solutions – an answer to the question and sometimes an answer actively in search of a question, and
4. Choice opportunities – the expectation that a decision will be made.

Within the Cohen and March decision-making model, problems, solutions and participants interact with each other until a choice opportunity is presented to force a decision.

The Cohen and March decision-making model can be useful in guiding a study of the decision made by or accepted by the SCHEV to discontinue formula funding. In applying the model, one must determine the problems that were to be resolved by the discontinuance of formula funding. What were the problems? How were they identified? How severe were the problems? What evidence is there that a solution was needed?

In the field of organization decision-making, Cohen and March (1986) theorize that solutions often precede the problem. The existing solutions are in search of a problem. This premise necessitates the examination of solutions. Were there other solutions to the problems? What were they? Were they seriously considered? If not, why not? If so, what was the result? What types of modifications to the formulas were attempted prior to discontinuance of formula funding?

With problems, solutions, and participants as the primary ingredients churning in the Commonwealth of Virginia's decision-making environment, the choice opportunity was selected. The decision to discontinue formula funding for institutions of higher education was the selected course. An examination of the contents of the garbage is necessary to understand how the decision was made.

Definitions of Key Terms

There are many terms used in this study that may be defined or interpreted in a variety of ways. To avoid possible confusion, several key terms are defined below:

Educational and General Budget. The Educational and General Budget is defined as appropriated funding designated for the support of general administration, instruction and departmental research, libraries, and physical plant maintenance and operations.

General Administration Budget. Funding required for the operation of executive and administrative offices serving the entire institution.

Instruction and Departmental Research Budget. Funding required for the operation of departments, schools, colleges or instructional divisions within an institution. This funding includes amounts for faculty and staff salaries and benefits and general departmental operational funds.

Libraries Budget. Funding required for departmental and general libraries, including salaries and benefits for staff, book acquisitions, and general operating requirements.

Physical Plant Maintenance and Operations Budget. Funding for staff salaries and benefits, supplies and materials and general operating requirements. Also includes building and grounds services, security, and housekeeping services.

Statewide Higher Education Funding Formula. Statewide budget formula or guidelines that provide a systematic means for calculating the resources required by a given program or subprogram. They can be used to (a) project budgetary needs, (b) justify budgetary requests, (c) clarify the presentation of budgetary information, (d) allocate resources, and (e) standardize budgetary data for comparative analysis.

Limitations

Like all research, the present study was not without limitations. The focus of this study was on the decision to discontinue formula funding for institutions of higher education in Virginia. Findings are not generalized to how decisions are made about funding methodologies in other states or how states make other critical decisions.

Secondly, the study included only decision makers who were still residing in the Commonwealth of Virginia. The Commonwealth of Virginia discontinued the use of formula funding for institutions of higher education in 1990. The span of time from 1990 to 2001 may have had an impact on the participant's memory of the pertinent details of this study. In addition, many of the participants are current employees or appointees of the Commonwealth of Virginia and may have been guarded with their responses to the interview questions. The participants who were available for the study may have differed from the individuals who were not locatable or residing in Virginia.

These obstacles must be considered important to the results of the study because of the potential impact on the number of interview participants and the selection of the participants. The people who were interviewed were gracious and accommodating. This study would not have been possible without their cooperation.

Organization of the Study

The research study was presented in a five-chapter format. Chapter 1 provides the introduction, the purpose of the study, the significance, the theoretical considerations, the research questions, the definitions of key terms, and the limitations of the study. Chapter Two presents a review of the related literature on formula funding and decision-making in educational

institutions. In Chapter Three, the qualitative methodology by which this research was conducted is described. This includes the methods and procedures used, the subject of the case study, the data needs, the instruments used, the data gathering procedures, and how the data will be analyzed. Chapter Four presents the findings, which are organized and analyzed in accordance with the theoretical foundations of the Cohen and March decision-making model. Chapter Five presents the summary of the study, as well as conclusions, and recommendations.

CHAPTER TWO

REVIEW OF LITERATURE

This chapter examines the literature regarding the development and use of formula funding in higher education and the decision-making process in educational institutions. Particular attention is given to the roles of decision-makers within the process as well as the attributes of funding formulas in general. Topics under consideration tend to progress from more general information to more specific. Overall, the chapter will move from descriptive or definitional to more analytical content.

According to a 1996 report from ERIC Clearinghouse on Higher Education, finance continues to draw minimal attention in higher education and the amount of literature on the subject is limited. Approximately 6.5% of the literature input into the ERIC database is related to finance. The major themes from 1996 dealt with cost control, reduced student aid, rising tuition, and reduction in funding. Only one literature input was received on formula funding, McKeown's (1996) study on the use of formula funding.

ERIC recognizes that several important issues are not addressed in the literature, but will become increasingly important with creative budgetary strategies. The report concludes that "literature that examines financial decisions within the context of and impact on the entire institution is needed", as well as "literature on creative budgeting strategies."

Role of Statewide Coordinating and Governing Boards

The trend for statewide coordination in higher education has been gaining impetus since the early 1950s (Wilson, 1972). Mortimer and McConnell (1979) identified a nationwide trend in the regulatory function of boards and their scope of responsibilities.

Schachter (1986) noted three basic authorities of governing boards: "(a) appoint and evaluate the chief executive officers of collegiate institutions, (b) intervene, when necessary, in internal campus affairs by approving personnel policies and establishing admission standards, and (c) initiate internal organizational changes in departmental or program responsibilities" (p. 333). By contrast, coordinating boards were described as having responsibilities such as planning, budget review and new-program approval, but as having none of the three basic authorities of governing boards. In categorizing the SCHEV, it may be noted that its mission as outlined in the *Code of Virginia* is to "promote the development of an educationally sound, vigorous, progressive, and coordinated system of higher education" (*Code of Virginia* Section 23-9.9).

The role of statewide coordinating and governing boards is somewhat ambiguous. This is not entirely unexpected since the role and goals of higher education itself are ambiguous and higher education has multiple constituencies, all of who may have varying perceptions of the board's role (Hawkins, 1993). Dressel and Faricy (1972) may have best characterized the delicate balance of perceptions,

For successful operation, a coordinating board must be seen by state officials and the legislature as a control over universities, while seen by the universities as supportive of their aspirations for funds and programs. Should either side be happy with the coordinating board, it is almost certain that the other will become equally unhappy and that the board may shortly become ineffective. (p. 154)

In times of financial austerity, it may be that the actual perceptions of the board are the opposite of those recommended.

Mautz (Kaplan, 1976) indicated that statewide boards allow legislators to deal with broader issues regarding distribution of funds for education at all levels, and recommend that boards “broadly predict future trends in enrollment, discern the educational needs of society, conduct studies to determine the fate of graduates, and reallocate resources to achieve varying and new goals” (pp. 46-47).

Numerous authors identify the development and implementation of a state plan for higher education as the major function of a statewide board. One of the great difficulties for a statewide board attempting to develop a state plan for higher education relates to the composition of the board. Members typically do not have much direct experience in higher education and may have difficulty understanding some of the conflicts and complexities in higher education. Wilson (1972) noted that in most states, the coordinating boards for public higher education are appointed by the governor with the consent of the senate and are intended to represent the general public rather than the individual institutions. In contrast, Morgan (1982) observed that board members often view their roles as representing geographical or institutional interests. There does not appear to be explicit agreement of how the plan should be developed or what it should contain (Breneman & Finney, 1997). However, the general thrust of the literature suggests that the plan should encourage diversity, guarantee quality, provide mechanisms for evaluating programs and institutions by some form of outcome criteria encourage efficiency and assure accountability to the public.

The specific functions of coordinating and governing boards nationwide tend to resemble those of the SCHEV, which will be discussed later in this study. Although the role of the boards and the constituents they serve appear to be ambiguous, the national trend towards increased regulatory control is expected to continue. The first major factor related to increased control is a demand for increased accountability.

Accountability Demands

Public demands for accountability of all public institutions have increased substantially in recent years. During the 1990s, nine states changed their higher education governance structures and 20 other states studied or debated the issue (AASCU, 1999). Changes in the governance of higher education in the Commonwealth of Virginia appear to have resulted in significant increases in state appropriations as legislators and the governor may have more confidence in the ability of higher education to serve the state's needs (McKeown-Moak, 2000). The National Association of State Budget Officers has called performance-based funding the most significant trend in state budgeting (1999). The extent to which public institutions of higher education ought to be accountable is a matter for some debate, but there is no doubt that the public demand is strong.

Ashworth (1979) stated very simply that educators must “explain themselves as they now are and justify what they are doing and why it costs so much” (p.22). McGrath (Budig, 1981) went so far as to state, “One of the most basic and difficult lessons to learn in a publicly supported institution is that the public, through its elected representatives, has the right to tell us how to spend tax dollars” (p.15). Certainly, this perception has serious implications for the balance between accountability and the more traditional views of the necessity for a high degree of autonomy for higher education institutions. Dressel and Faricy (1972) suggested, “when a governing board defines success in terms of meeting social needs, university facilities and administrators will know the ultimate invasion of their autonomy has come about” (p.165). Much as faculty may dread that prospect, the description may not be too far from present reality. For example, the current emphasis in many institutions upon high technology areas and the

associated fiscal support available within those areas may be viewed as directly related to a social need to provide human resources for available jobs in those areas.

Success has been defined to some extent by an institution's ability to meet social needs. In the past, however, those social needs tended to be expressed as a very broad and general goals, such as "to preserve and transmit the culture," "to enhance the human condition," "to develop and disseminate knowledge," and so forth. These goals were sufficiently vague to permit a great deal of institutional autonomy. As has been noted earlier, there is considerable pressure for institutions of higher education to develop far more explicit goals and objectives, which may then become a standard for evaluating the effectiveness of the institution.

There also is a strong possibility that these more explicit goals and objectives will form the basis for decision-making regarding the institution and its programs. The use of such goals and objectives as the basis for funding decisions is viewed variously as a threat or opportunity (Schmidt, 1997; Wagner, 1996). King (1974) has noted numerous difficulties with evaluation and accountability, noting "there is a tendency for persons involved in evaluation and accountability to be concerned only with those elements which are easily measured" (p. 11). These so called hard data give a very limited picture of an institution's success; they may limit institutional diversity; and may ignore the fact that the institution is only a part of a total educational and social system influencing the performance of its students. Peterson, Erwin and Wilson (Folger, 1977) similarly described difficulties of using state-level performance budgeting, including the dearth of information relating resources to outcomes in higher education, difficulties associated with questions of quantitative versus qualitative indicators and the paucity of the latter.

Dressel and Faricy (1972) claimed "The definition of institutional roles, achievement of efficiency, and rationalization of educational planning will be achieved only by limiting the autonomy of individual institutions" (p.158). Berdahl (1971) commented extensively on the issues of autonomy, particularly as they are related to academic freedom. While the issues of academic freedom were noted to be a critical factor differentiating higher education from other enterprises, the essential freedoms were described as unclear at times but definitely not synonymous with university autonomy. In conclusion, Berdahl stated, "The real issue with respect to autonomy, then, is not whether there will be interference by the state but rather whether the inevitable interference will be confined to the proper topics and expressed through a suitably sensitive mechanism" (p. 9).

What are the consequences of limiting autonomy and what is the role of SCHEV in striking a balance between accountability and autonomy? Brewster (1973), in support of institutions, noted "if it were not for the insulation of trustees or regents, standing between faculty and the university's financial constituencies it would be hard to imagine how we would indulge that faculty self-determination which is essential to free inquiry, to discovery and to enthusiastic teaching from conviction" (p.13). Mortimer and McConnell (1979) similarly described the role of the coordinating board as involving the balance of public interest with institutional autonomy. Berdahl (1971) in describing the delicacy of that balance, stated, "If the potential dangers of too heavy an agency involvement with the institutions are inordinate and the reputation of being a holding company for the institutions, then the corollary dangers of excessive agency involvement with state offices are pressures for premature decisions, the possibility of getting caught in the cross fire when state officials oppose one another" (p.192).

In Berdahl's (1971) study, a coordinating board director describing his agency claimed: "We are neither a front for the governor or legislature, nor a front for colleges and universities.

We take an independent position, much as a federal regulatory agency. We gather facts and attempt to arrive at proposals rationally and objectively. We have no close friend, but we always have a defensible position” (pp.186-187).

Thus, a coordinating board may be viewed as an agency that attempts to establish a balance between autonomy and control. The multiple views of the purpose of higher education and the accountability/autonomy struggle provide a major source of conflict in both the governance and funding of higher education. Pressures for accountability will continue to be an important issue as some states are appropriating funds entirely on how well institutions are able to perform (Schmidt, 1997). The budget is particularly crucial, since the implementation of all decisions depends upon the availability and utilization of funds (Healy, 1998).

Unstable Enrollments

Unstable enrollments present a second major factor influencing funding decisions in higher education. These efforts generally have been aimed at maintaining enrollment levels. Hossler and Kemerer (1986) presented several models for enrollment management based upon the concepts of student-institution fit, upon attrition research, and upon strategic planning. These range from a committee model to the creation of an institutional enrollment management division.

The particular interest in enrollments stems from economic reasons (Roherty, 1997). According to Bean (1981), “there is a linear relationship between enrollment and income” (p. 47). This assumption is implicit, if not explicit, in most of the literature. Leslie (Leslie, et al, 1986) has suggested that the economic benefits assumed to accrue from enrollment increases in recent years might have been mythical. Leslie explained:

Nationally, since 1977, the marginal revenue in state appropriations per student has represented only about two-tenths of the average cost of education. In other words, only if your marginal costs are less than two-tenths of your average costs are you going to receive more dollars for additional enrollments than you have to spend. I doubt that any institution has marginal costs that low. Thus, enrollment increases across the country in the past eight or nine years have on average been money-losing propositions, yet institutions are still acting as though enrollment growth is going to save their bacon. (p.52)

In the early days of formula funding, the formulas tended to be very simple and almost always related to mere student headcount. An overall faculty to student ratio, such as 1:15, often was all that was deemed necessary to ascertain funding needs for faculty positions, and the ratio sometimes was used to determine funding levels for other components (such as the library) of higher education budgets.

As enrollment growth began to level off and decline was predicted for the future, these formulas became increasingly complicated. Program demands were seen as different for various levels and disciplines. Other factors sometimes included for consideration in establishing formulas were: the relative costs of full time versus part time faculty; the relationship among the teaching, research and service missions of an institution and its programs; physical plant characteristics and requirements; and other factors. Multiple-factor formulas which establish funding needs not purely based upon headcount are said to “decouple” funding from enrollment information; they attempt to avoid the use of enrollment numbers as the sole basis for funding. This particularly serves to minimize the effects of enrollment decline on funding levels and it recognizes that costs do not necessarily disappear when students do.

Another response to minimize the effects of enrollments decline is “buffering”, which retards or limits the rate of loss of funds. For example, for a funding adjustment based on enrollment changes to be made in either direction, the increase or decrease must exceed a set percentage of the total enrollments of the institution in question. This procedure avoids the necessity for making constant budgetary accommodation to minor shifts in enrollment.

A third response includes the concept of “marginal costing.” This recognizes that some of the costs are fixed, while others may vary in relationship to enrollments. Some costs lie between the two. Room costs may be relatively stable regardless of the number of students in them, up to a point. Except in dire circumstances, tenure policies, staffing requirements, and salary scales cannot be ignored in establishing minimum funding requirements, regardless of the number of students. Identifying those costs that vary directly with enrollments (marginal costs) and those which do not (fixed costs) is a more complicated process than simply counting the number of students and dividing by 15. It is much easier to build buildings and add faculty and programs in times of growth than it is to do away with them in times of decline.

Buffering, decoupling and marginal costing assist in dealing with problems associated with enrollment decline, but only partially (McKeown, 1982).

State Funding of Higher Education

Fiscal year 1999, the first year of the new millennium, was marked by extraordinary support for higher education from state government. Higher education, for the first time in many years, experienced a rising share of state budget appropriations and has continued to benefit from the longest period of national economic expansion in 30 years (McKeown-Moak, 2000). This was the first time in 15 years that no states reported reductions in state appropriations for higher education from one year to the next (McKeown-Moak, 2000).

The current trend in funding has not always been the case. This fact leads to the third major factor that appears to be causal in the increased regulatory function of boards is the marked decrease in funds available for higher education. During the 1980s and early 1990s, significant federal cuts in funding and in many cases, state funding cuts as well, seriously affected many institutions. One of the earliest and most dramatic scenes of state budget cuts was in the University of Wisconsin system in the early 1970s. The cuts resulted in massive layoffs of faculty and in system-wide program review and reduction. In the past few years, revenue shortfalls in many states produced similar, if not always so drastic, results. The two basic response categories in these states were (a) income generation (raising tuition, etc.) and (b) expenditure reduction (maintenance, capital construction, library acquisitions, equipment, supplies and other operating expenses, position and employee reductions, hiring freezes, adjustments to salaries, reduction in enrollments and termination of programs) (Kaufman and Berve, (1982).

Perhaps the best analysis of the causes and effects of contraction/budget cuts is that of Morgan, published in 1982. Although the emphasis is upon institutional rather than statewide response, the information may be generalized to statewide systems. Morgan identified four categories of contraction and for each the most common causes and characteristic institutional response. These are:

1. Slowed institutional growth and possibility of contraction.
Most common causes: externally imposed fiscal constraints, e.g. recession, government spending limits; stable enrollments or decline in enrollment growth rate; inflation above rate of rate of budget increase.

- Characteristic institutional response: Efficiency measures; deferral of planned programs and buildings; self-study; increased student marketing efforts; increased fund raising activities.
2. Moderate, temporary contraction.
Most common causes: Externally imposed budget cuts; high rates of inflation; decline in enrollment.
Characteristic institutional response:
Intensified efficiency measures, deferral of certain types of expenditures; some staff redeployment; program reviews as a basis for selective cuts; intensified student marketing and fund raising activities; early retirement policies.
 3. Substantial contraction over a relatively short time.
Most common causes: Fiscal crisis, e.g. severe recession or depression or fiscal insolvency; sharp decline in enrollments; reorganization or merger of institutions.
Characteristic institutional response: Crisis personnel policies; redundancies; suspension of capital expenditures; intensive mission/program studies; reduction or closure of selective programs.
 4. Long-term contraction.
Most common causes: Permanent state of uncertainty surrounding institutional viability; organizational political or economic entropy.
Characteristic institutional response: Program closures; heavy emphasis upon personnel policies' planned disposal of assets (p. 556).

Glenny (1976) similarly suggested the first round of cuts are absorbed by slack and across-the-board reductions, but that further cuts usually result in institutions doing their own program reviews and making cuts based on program priorities. Berdahl (1971) concurred saying that "...educational criteria operate only when selective cuts are made within institutions; flat reductions accepted among institutions remain essentially political in nature" (pp. 107-108).

In relating concepts of shared authority to statewide coordination in times of financial austerity, the tendency of boards to become more regulatory has been noted. This suggests attempts to move more bureaucratic forms of governance and toward so-called rational forms of decision-making.

Characteristics of Formula Budgeting

Currently, over 27 states use funding formulas or guidelines to allocate resources to institutions of higher education. The use of the funding formulas or guidelines by these states ranges from application to one or several program areas. Each state's formulas or guidelines attempts to reflect its own specific goals, mission, or situation in the allocation of state resources. While states may borrow or adapt basic design features of formulas or guidelines from other states, there is no one best funding methodology (MGT of America, 2000). Several emerging trends in formula funding design by the states include the search for streamlined or more simplistic approaches; greater focus on accountability or performance funding; and greater use of non-formula funding categories (MGT of America, 2000).

According to Moss and Gaither (1976) the modern use of formulas to develop higher education budgets is fairly recent with its roots traced to the development of a faculty-staffing formula in California in the early 1950s. The earliest efforts are traced to John Dale Russell's efforts at institutional analysis in the 1930s.

Formula budgeting has been described as an "objective procedure for establishing the future budgetary requirements of a college or university through the manipulation of objective

(quantitative) data about future programs and the relationships between programs and costs in such a way as to derive an estimate of future costs” (Miller, 1964). In theory, formula budgeting is a method of budgeting that reduces the complex political process of allocation of state funds for higher education to a rational, pragmatic and standardized method. Its basic structure consists of a method in which standard unit costs are multiplied by projected loads to equal estimated fiscal requirements (Halstead, 1974).

Robins (1973) defined the formula as a procedure that has been devised to estimate the anticipated expenditures of institutions of higher education using predetermined sets of ratios and/or cost parameters. According to Rourke and Brooks (1966), a funding formula is a set of program cost relationships used to estimate future budget requirements for one or more institutions of higher education. Gross (1973), asserts that a funding formula is a set of statements which specify a procedure for manipulating pertinent variable data through the use of pre-established fixed data in order to estimate the future funding requirements of one or more institutions of higher education.

Several notions are common to each of these definitions. Funding formulas are quantitative in nature and are used as a means of estimating future financial requirements of one or more institutions of higher education. Implicit in each of these definitions is the notion that a unique funding formula may be developed to estimate the financial requirements of certain functional budget areas within an institution. In effect, formulas are models, and like all models, at any given time they capture only a portion of reality (Brinkman, 1984).

Some of the advantages of formula usage are (a) the lessening of the political warfare among, and open lobbying by state supported institutions for scarce funds; (b) the assurance of annual operating appropriations for institutions based on quantifiable objective measures; (c) the provision to state officials of a reasonably simple and understandable basis for deciding upon the appropriation requests of individual institutions; and (d) the representation of a reasonable compromise between state control over line item budgeting and institutional fiscal autonomy (Millet, 1972).

Writing in the Association of Institutional Research (AIR) Professional File, Gross (1973) identified the following seven characteristics of budget request formulas:

1. Budget formulas are complex.
2. Budget formulas recognize few base factors.
3. Budget formulas utilize one or more of three computational methods:
 - (a) rate per base factor unit
 - (b) base factor position ratio with salary rates
 - (c) percentage of base factor
4. Budget formulas are zero-based.
5. Budget formulas lack differentiation among institutions.
6. Budget formulas assume linear relationships between base factors and resource requirements.
7. Formula budgeting is more prevalent than formula funding. (pp. 1-2)

The distinction between a funding formula and a cost analysis procedure should be noted. Miller (1968) observes that a cost analysis study is a procedure that utilizes objective data to define relationships between programs and costs. He further states that such procedures are applied after the fact and are typically quite detailed, whereas funding formulas are developed prior to the budgetary process and are used as a basis for the estimation of future financial requirements.

Stated more simply, cost analysis procedures measure past expenditures, while funding formulas estimate future financial needs.

Berdahl (1971) notes that cost analysis data are rarely used as the sole basis for statewide higher education budgeting because of the danger of misleading high-cost programs within a particular institution. However, cost analysis procedures do convert basic financial data into information that can be used for interpretive and planning purposes.

A National Center for Higher Education Management Systems (NCHEMS, 1971) publication stated that:

...One of the perennial dilemmas in developing funding formulas is the tradeoff that must be made between accuracy and simplicity. For formulas to be made acceptable they must be reasonably accurate reflection of reality...but the more accuracy a formula represents a complex enterprise, the more complex the formula becomes. This violates the political requirements that formulas be easily understood...since a price will have to be paid with respect to simplicity, it is vital that consensus and understanding be sought in the early stages of any revision process. (pp. 65-69)

Thus, while simplicity is the goal of and one of the major criteria for the development of formulas as the systems become more complex and formulas are used to address more complex funding issues, it becomes inherent that simplicity must be replaced with communication. As formulas become more complex, communication becomes a major criterion for acceptance. The NCHEMS (1971) report concludes that “the simplicity of the formula allows it to be readily explained to the political authorities and the public...the balance between simplicity and accuracy will necessarily shift toward accuracy during the coming years” (pp. 1-2).

Miller (1964) presents seven criteria for an effective formula. His criteria are:

1. A new process should show promise of providing some meaningful benefit to most of all of the major participants in the budgetary process and not just to a few of them.
2. All parties should understand that the procedure is to be used only for detailed budget preparation and not for detailed budgetary control.
3. There should be sufficient flexibility either in the formula itself or in its administration to provide recognition not only for the differences among institutions in existing programs, but also (a) for differences among institutions in educational philosophy and administrative style; and (b) for differences which inevitably will develop after the formula is first adopted.
4. The procedure should be capable of describing in quantitative terms the types of programs and institutions in the particular state for which it is designed.
5. Insofar as possible, data should be collected, analyzed and presented in such a way so as to permit and even facilitate comparisons among institutions and programs within state and with data available from other states.
6. The normative data reflect national trends as well as present standards at the local institutions for which the budget is prepared.
7. In dealing with each of the functional activities within institutions the methodology that is employed should be chosen on the basis of its appropriateness to the specific activity in question. (pp. 163-164)

In 1964 Miller stated, “...formulas and cost analysis procedures deal almost exclusively with the category of educational and general activities” (p. 94). He delineated these categories into the following activities: general administration, general expense, instruction and departmental research, organized activities relating to educational departments, organized

research, extension and public service, libraries, and operation and maintenance of the physical plant. Gross (1973) broke them into the following functional budget areas: instruction, libraries, student services, organized research, public service, physical plant, and institutional support.

In general such areas as capital expenditures, one-time grants, new programs, and items of a non-recurring nature were not included within the formula. Formulas then, in the main, form the foundation of the state's support for the institutions. Because of this, formula budgeting may or may not determine the level of funding available for an institution. The areas of funding outside the formula can be used to generate funds that normally would not be contained in a rational, strictly numerical, or mathematical approach. The amount of funding that is contained is subject to negotiation but may well be based on an analytical study as well. Thus, while a state may have a well-developed mathematical formula-funding model, the model may not tell the whole story of the funding to the institutions of that state. With this caveat, the researcher will now consider the methods of calculation used for formulas nationally.

Formula Structures

Meisinger (1976) reported that a formula is nothing more than a mathematical relationship that can be separated into two parts, (a) the variables which provided the basis for the budgetary formulas and (b) the coefficients, or rate schedules, which determine the level of funding associated with each formula. The possible variables come in all forms, the following among the most frequently used: student/faculty ratio, by level of student or level of instruction; student credit unit per weekly faculty contact hours; student credit unit per faculty FTE; unit cost either instructional dollars per student credit unit or instructional dollars per FTE student with direct or indirect base; cost per degree; and state economic conditions (percent of state personal income).

Meisinger (1976) further posited that the potential bases, or points of departure, in setting coefficient levels are historical perspective (the continuation of the level plus or minus allowances for price and technological changes and new programs over time) and interinstitutional or interstate comparisons (response to a societal or student requirement for a particular program, with relatively less consideration of given cost factors).

Boling (1961) identified two basic types of statewide higher education funding formulas: base formulas and functional formulas. A base formula estimates the future funding requirements of a specific budget area by applying a predetermined percentage factor to a specified base (usually the projected instructional budget). For example, an institution's budget for libraries might be estimated as eight percent of the institution's instructional budget. When a base formula is utilized, some procedures must be developed to establish the base budget. A functional formula estimates future funding requirements of a specific budget area through the consideration of certain factors directly related to the area itself. For example, an institution's budget for library acquisitions might be based on data related to the average cost per volume purchased during some previous time period, coupled with the projected number of volumes to be added to the collection.

In his study of formula usage throughout the country, Gross (1973) enumerated the following three basic computational methodologies in the formulas used in the 25 states he identified as using formulas:

1. Rate per base factor unit (RBFU) where given rates (formula factors) are multiplied by institutional descriptors (base factors) to calculate resource requirements. The rate per base factor method starts with an estimate of a given base, such as credit hours or full-time equivalent students (FTES), and then multiplies that base by a specific unit rate. Unit rates have usually been predetermined by cost studies, and may be

- differentiated by discipline, level, and type of institution. An example would be to multiply student credit hours by a fixed dollar rate.
2. Base factor position ratio with salary rates (BFPR/SR) where given position ratios (faculty/student, faculty/support staff, etc) are used to determine justified FTE positions which in turn are multiplied by given salary rates to calculate resource requirements. BFPR/SR is based on a predetermined optimum ratio between a base factor and the number of personnel. The resulting number of faculty positions determined at each salary level is then multiplied by the salary rate for that level, and the amounts totaled to give total budget requirements. Additionally, BFPR/SR is commonly used in plant maintenance requirements. BFPR/SR is the most complex of the computational methods. An example would be to divide FTE enrollment by 20 (faculty/student ratio) to obtain the number of FTE faculty positions justified and then to multiply a given salary rate to obtain the total instructional salary budget request.
 3. Percentage of base factor (PBF) that represents the simplest formula application in that the resource requirement or a given functional area is expressed as a percent of the total amount calculated for another functional area. PBF assumes that there is a specific relationship between a certain base factor like faculty salaries and other areas like departmental support. Reportedly, PBF was developed because of the perception that all support services are related to instruction, the primary mission of a college or university (Boling, 1961). For example, institutional support staff might be limited to twelve percent of the total instructional budget request. (p. 3-27)

Gross (1973) also found that in preparing formula models very few base factors are used and that “most formulas restrict base factors (instructional need predictors) to enrollment attributes such as student credit hours, student FTE’s, student headcount, and to continuing education units, or to physical plant characteristics such as square feet or building space and acres of ground” (pp. 3-27).

Square footage or acreage is used most often in maintenance and operation of the physical plant. Credit hours, FTES, or positions are the most prevalent bases in instruction, academic support and institutional support areas. Head count is used primarily as a basis for student services, scholarships and fellowships.

Formulas may differentiate among academic disciplines (i.e., education, business, and engineering), levels of enrollment (upper and lower levels), and types of institutions (two-year, senior, etc.). Other differentiation in Alabama and Kentucky includes a category for historically black institutions.

States have introduced factors that differentiate among institutions because each institution is unique in its mission and program mix. Differentiation is utilized to recognize the legitimate differences in certain costs of operation brought about by unique reasons. Recognized reasons include economies or diseconomies of scale, method of instruction, and class size. Differentiation is especially common in the calculation of funding requirements for the instructional program areas. To implement differentiation, accurate accounting and costing systems must be in place to provide reliable basis information.

Typically, formulas reflect one of two computational approaches, the all-inclusive approach or the itemized approach. The all-inclusive approach determines the calculation of the total allocation or entitlement for the program area by one calculation. The itemized approach utilizes multiple calculations to determine the allocation to each budget area (McKeown, 1996).

Advantages of Statewide Funding Formulas

The implementation of a higher education funding formula within a state system of higher education offers many potential advantages. Some of these potential advantages affect officials of the state government. A publication of the Southern Region Educational Board (SREB, 1966) stated that a funding formula helps alleviate much of the confusion caused by extraneous details so that policy-makers outside the immediate higher education community can readily identify basic issues. This same publication stated that another advantage of a funding formula is that everyone knows how budgetary decisions are made.

Berdahl (1971) observed that the implementation of a funding formula may reduce legislative conflict regarding the total financial resources to be allocated to a state's system of higher education. He also notes that a funding formula increases the coordinating agency's intimate knowledge of each institution and that this knowledge facilitates master planning and program review. Hungate (1964) explained that the implementation of a funding formula can reduce the likelihood that a state budget officer might make significant decisions regarding the portion of an institution's budget request the legislature should even consider. Glenn (1955) noted that the implementation of a statewide higher education funding formula helps dispel the belief of some legislatures that institutions have misrepresented certain types of income, hidden financial reserves, and carried forward surpluses without legislative approval.

Rourke and Brooks (1966) observed that statewide higher education funding formulas offer three potential benefits: (a) reduction of tension and bickering among higher education institutions, (b) assurance of a predetermined level of funding, and (c) maintenance of role differentiation among institutions within the state's higher education system. A publication by the Western Interstate Commission for Higher Education (WICHE, 1959) cited five potential benefits which might be derived from implementing a statewide higher education funding formula: (a) economy in state government, (b) efficiency in institutional operations, (c) equity among institutions, (d) simplicity in budget computations, and (e) objectivity in the analysis of financial needs.

Van Wijk and Levine (1969) suggested several additional advantages of implementing a statewide funding formula. These authors stated that a funding formula not only helps an institution analyze the need for financial resources, but also assists in the orderly presentation of budgetary data. They further suggested that a statewide higher education funding formula allows an institution suitable flexibility in course design and gives it certain autonomy in setting internal priorities. Van Wijk and Levine (1969) also pointed out that funding formulas provide assurance to an institution's private donors that their gifts are in addition to and not a substitute for public financial support.

A report by the Task Force on Coordination, Governance, and Structure of Post-secondary Education of the Education Commission of the States (1973) noted that statewide formula funding could be helpful in implementing long-range objectives, which have been established for a state system of higher education by various groups such as coordinating boards, governing boards and legislative committees.

In the 1996 publication, *State Funding Formulas for Public Four-year Institutions*, McKeown summarized the advantages of funding formulas as follows:

1. Formulas provide an objective method to determine institutional needs equitably.
2. Formulas reduce political competition and lobbying by the institutions.

3. Formulas provide state officials with a reasonably simple and understandable basis for measuring expenditures and revenue needs of campuses, and determining the adequacy of support.
4. Formulas represent a reasonable compromise between public accountability and institutional autonomy.
5. Formulas enable institutions to project needs on a timely basis.
6. Formulas ease comparisons between institutions.
7. Formulas permit policymakers to focus on basic policy questions.
8. Formulas promote efficiency in institutional operation. (p.8)

Equity among institutions may be achieved by using state funding formulas. Brinkman (1984) viewed a two-fold advantage of formula funding. One is the salutary effect that formulas enhance the uniformity and ease of budget preparation and presentation. The second effect is ease of decision rules. A formula removes part of the uncertainty from the decision-making process and establishes an objective basis for the institutional fair shares. Horizontal equity, defined as the equal treatment of equals, may be achieved by providing a fixed dollar amount for one credit hour of instruction regardless of which institution provides the instruction. Vertical equity, defined as unequal treatment of unequals, may be achieved by providing differential funding based on actual differences. An example would be providing a different amount for frame buildings than for brick buildings.

Criticisms of the Formula Approach

Critics of formulas suggest that formulas cannot measure higher education or its needs because higher education is unique. It cannot be compared to such activities as road building or welfare program (WICHE, 1959). It also has been charged that formulas do not recognize the complexities of the systems of higher education and cannot measure quality. Other critics, particularly those in the “flagship” institutions of a state, feel that the formula approach tends to be average to the educational system.

Recent and valid criticism involves the linear approach to funding that most formula models utilize. Formulas were developed and implemented in the main during the 1950s and 1960s when higher education was experiencing massive enrollment increases. Most of these formula models were based on linear mathematical relationships with zero intercept terms, such as “one teacher per twenty students.” Such practices do not recognize the economies of scale principle--the greater the level of production (up to a point), the lower the unit costs. All other factors remaining constant, enrollment increases result in average program costs decreasing due to economies of scale (Moss & Gaither, 1976, pp. 555-556).

Thus, formulas have been the most advantageous to institutions during periods of enrollment growth. In the 1970 s experts in higher education began projecting the advent of steady state or declining enrollments in higher education. However, “...during periods of declining enrollments unit costs increase as funds received per program decreases. But there are major commitments that are not reduced when enrollments decrease” (Moss & Gaither, 1976, p. 556). This aspect of formula modeling generates concern from many in higher education. If enrollments drop in an institution, it is going to be hurt by a strict application of most formula models as costs will not decrease in direct proportion to unit losses.

Miller (1965) stressed that a statewide higher education funding formula is not specifically designed for an institution’s internal use. Berdahl (1971) stated that even though funding formulas are not intended to influence an institution’s internal policies, there is a tendency for administrators to allocate resources in a manner that would generate the most

revenue under the formula. He further noted the opportunity for the higher education coordinating agency to weight certain factors within a formula to informally influence institutional policies.

Cope (1968) found that a serious limitation of a funding formula lies in the failure to periodically re-evaluate and revise it. He asserted that without such periodic assessment, funding formulas that were based on historical data may in fact perpetuate an undesirable situation and pertinent changes within an institution cannot be accommodated. Glenny (1965) suggested that periodic assessment helps guard against significant changes in the assumptions upon which the formula was based.

Glenny (1955) and McKeown (1992) observed that even though statewide funding formulas appear to contain considerable objectivity, they in fact contain a large amount of hidden subjectivity. For example, many funding formulas are based on the formula builder's opinions regarding an appropriate average faculty-teaching load or they are a borrowed benchmark from some other institution or group of institutions that seem reasonable.

Two other cited disadvantages of formulas are their failure to:

...react quickly to rapid fluctuations in the national market and to recognize and fund nontraditional learning, continuing education activities and other such innovations that attract older students (Glenny, 1955; McKeown, 1992).

This is a growing concern to many because the average age of students seems to be increasing and the older student is becoming a larger part of the higher education sector. However, while some oppose formulas and decry the inability of formulas to react well to downturns, others view this as a challenge that can be met. Better formulas would be hybrids of necessity. Harold Enarson (1965) felt the key is to "develop an approach to budgeting that will preserve the advantages of a formula while not affecting the base programs of an institution in arbitrary and unintentional ways. If this is to happen, reductions in enrollment need to be looked at separately from potential cost reductions or other policy decisions" (p. 2). Thus, Enarson (1965) saw the formula approach as part of the foundation of budgeting for higher education, a foundation that needs to evolve and adapt to conditions. The use of cost analysis and formula is part of an ever-changing process. Formulas, because of their strong reliance on quantitative methods can easily be seen as being among the most inflexible of approaches; however, they are also subject to the same manipulations and change as less quantitative approaches. McKeown (1996) summarized shortcomings of formulas as follows:

1. Formulas may be used to reduce all academic programs to a common level of mediocrity by funding each one the same, since quantitative measures cannot assess the quality of a program.
2. Formulas may reduce incentives for institutions to seek outside funding.
3. Formulas may perpetuate inequalities in funding that existed before the advent of the formula since formulas may rely on historical cost data.
4. Enrollment driven formulas may be inadequate to meet the needs of changing client bases or new program initiatives.
5. Formulas cannot serve as substitutes for public policy decisions.
6. Formulas are only as accurate as the data on which the formulas are based.
7. Formulas may not provide adequate differentiation among institutions.
8. Formulas are linear in nature and may not account for sudden shifts in enrollment and costs. (p. 9)

An interesting note on the development of state formula funding is that the original perception of formula funding as an "objective procedure" has shifted more to one which is seen as a mix of analytics and politics (Jones 1984, Caruthers 1989). Jones (1984) cited:

...one senses an increasing lack of clarity regarding what formulas are designed to do, what their characteristics are, and how they are supposed to relate to state policy. Instead, the focus has shifted to the mechanistic... There is little evidence in the literature of a fundamental reassessment of formulas. (p. 46)

Criteria for Adoption

In 1964, Miller produced the first major study of formulas for higher education entitled *State Budgeting for Higher Education- The Use of Formulas and Cost Analysis*. Several other comparative studies of formulas in other states have provided theoretical explanations for how, why and with what substantive content such procedures develop and then either succeed or fail. Several studies (Meisinger, 1976, and Glenny, 1969) have also studied the development of formulas in various states.

The trend to formulas has been termed by Miller (1964) as "an attempt to rationalize the budget preparation process." One of the major causes for their support by institutional officials and state officials is that the use of formulas "has put an end to a great deal of institutional rivalry" because of their past success in the "...achievement of an acceptable degree of equity among institutions" (Miller, 1964).

Miller (1964) and Meisinger (1976) stated hypotheses as to the atmosphere and conditions that need to exist within a state for the suggested adoption of a formula budgeting model. Miller (1964) suggested that the two that must act as a catalyst are:

1. The problem of securing an equitable distribution of funds among institutions.
2. The problem of providing sufficiently objective budget justification to satisfy state budget offices and legislatures. (p. 152)

Meisinger (1976) suggested that there are four conditions necessary for the introduction of a formula budgeting process: (a) sources of support for the formula concept; (b) an organizational framework, (c) an organizational framework for implementation; and (d) a technological framework base upon which to ground the formula. His study of three states (Texas, California and Illinois) indicated that the process might be initiated or promoted by different actors but that each of the three elements is present to differing degrees within the system regardless of who is promoting the new budgeting process.

Halstead (1974) cited the following four main reasons for the development of formulas: (a) political complexities, (b) the need for a more equitable distribution of resources, (c) inadequate revenues, and (d) increased demands for accountability. Policy-makers credit politics as being the major factor for the usage of formulas for higher education in recent years. In addition, policy makers feel that formulas tend to reduce the "power politics" and the "subjective nature of decision based on power politics.

Criteria for Evaluating Formula Effectiveness

Several authors have suggested criteria for determining the effectiveness of a statewide higher education funding formula. Halstead (1974) listed the following criteria for evaluating a statewide funding formula:

1. The formula must measure what it purports to measure. If it does not have validity it will be of little value in estimating budgetary needs and may, if sufficiently inaccurate, perpetuate gross deficiencies, surpluses and inequities.
2. The formula should be expressed in measurable terms to avoid bias, errors, of judgment and differences of opinion normally encountered in subjectively derived values.
3. The formula should be constructed in a manner that allows for adjustment or changes in workload, resource demands and growth rates.
4. The formula should permit the inclusion of important differences in existing programs, as well as differences among institutions in educational philosophy and operating style.
5. Formula definitions should be standardized and formula units designed to facilitate comparisons among institutions and programs.
6. Formula procedures should be sufficiently simple and straightforward that users can readily understand them. (pp. 663-664)

Walton (1967) identified the following set of criteria for assessing the effectiveness of a funding formula:

1. The formula should provide methods for financing educational innovation.
2. The formula should distribute funds in a manner that does not destroy an institution's initiative, flexibility, individuality and diversity.
3. The formula should not be used for internal allocations.
4. The formula should utilize data available from official reports of the institution.
5. The formula should make some provision for financing special needs. (p. 36)

Van Wijk and Levine (1969) suggested that an effective funding formula for higher education should have the following attributes:

1. The formula should be carefully defined and well understood by all concerned.
2. The formula should allow for differences among institutions in educational methodologies and administrative practice.
3. The formula should contain incentives for educational effectiveness and administrative efficiency.
4. The formula should be sensitive to relevant cost variables.

Gross (1973) cited the following performance objectives for identifying an effective funding formula:

1. The funding should recognize the diverse financial needs of the institutions, as indicated by its sensitivity to the mission, role, institutional complexity, location and other factors which differentiate the financial requirements of the individual colleges and universities.
2. The funding formula should be broad-based and addressed to the total financial operating needs (exclusive of auxiliary services) of the institutions, as shown by its recognition of the individual functional areas of operation and where appropriate should utilize quantitative data directly related to the financial requirements of each functional area to be funded.
3. The funding formula should take into account the varying costs of instruction, as demonstrated by its recognition of the funding requirements for individual disciplines and for different levels of instruction.

4. The funding formula should provide for the equitable treatment of all institutions of like types, as evidenced by its capability for treating data on similar programs in a uniform and comparable manner.
5. The funding formula should be objective, as indicated by its utilization of quantitative data in determining the financial needs of the colleges and universities.
6. The funding formula should recognize the qualitative efforts of the individual institutions, as demonstrated by its built-in incentive of additional funds for the successful completion of institutionally defined goals and objectives.
7. The funding formula should promote efficiency and economy in operation, as indicated by its ability to facilitate comparisons among similar institutions and programs on a state, regional or national basis.
8. The funding formula should be designed to accommodate the dynamic nature of higher education, as evidenced by its flexible design and its provision for the periodic revision of fixed inputs.
9. The funding formula should lend itself to comprehension by all parties concerned, as shown by its straightforward construction which clearly demonstrates the relationship between its fixed and variable components.
10. The funding formula should not be used for the detailed control of expenditures, as demonstrated by its being applicable only for justifying budget requests or allocating funds to college and universities, and for limited internal budgeting between functional areas, discipline areas and levels of instruction.

Finally, the formula should relate to the budgeting process. To facilitate that process, formulas should be clear and understandable (Halstead, 1974), be as simple as possible so that they can be presented to laypersons (McClintock, 1980), show some benefits to all major participants in the budget process (Miller, 1964), be adequate for displaying institutional needs to the legislative and executive branches (Stumph, 1970), and inject objectivity into the budget process (McClintock, 1980).

Impetus for change

A publication by NCHEMS outlined some of the issues and pressures for change in formulas that developed in the late 1970s as well as conditions that would be necessary for change in the 1980s. The publication stated that, "Conditions need to be significantly different than those existing in the 1950s, 1960s and 1970s when the existing formulas were developed and refined. Enrollment declines will put great pressure on formulas" (p. 34).

In Florida, which came close to changing its formula recently, the impetus for change did not come from predictions of a large enrollment decline and resultant financial dislocation, but rather from an intellectual desire on the part of the professional staff and elected officials to improve the formula (NCHEMS, pp. 65-67).

Meisinger (1976) stated that certain conditions must be present for the impetus for change or dissolution of formulas: (a) a bleak economic situation; (b) a deterioration of trust and confidence that is speeded by a breakdown in interorganization communications; and (c) a degree of manipulation by the various actors within the process. He attributed the demise of the formulas in California and Illinois to these factors.

The trend in formula development in many states involves refinement of procedures, greater detail and reliability in the collection and analysis of information, and improvement in the differentiation between programs and activities. Some states appear to have used different methods to develop formulas. Adaptation rather than development of new formula appears to be

the preferred method because of the time and cost required to do a good cost study (McKeown, 1996).

Accounting procedures are not refined enough in some states to permit the calculation of costs differentiated by academic discipline and level of student, and to separate professional time into multiple work products generated by carrying out the institution's three major missions: research, teaching and public service (Sanchez-Penley, Martinez and Nodine, 1997). States continue to adapt formulas from other states because methods that work in one state may work equally well in another with the benefit of saving considerable time and resources (McKeown, 1996). Thus, it is as remarkable as it is unsettling that formula funding remains today one of the most important and widespread mechanisms for funding public higher education (Ahumada, 1990).

Organizational Process

Formulas not only change the method of allocating funds for higher education in a state, but they also tend to impact on organizational structures within the institutions and the state agencies responsible for higher education. Miller (1964) found that state organizational structure was affected in two ways: (a) the need for an ongoing staff and administration to work with formulas will move the state to a stronger coordinating agency if one presently exists or the development of one if does not exist, (b) the use of reports generated by the cost analysis and the formulas will provide information that point up "irrationalities" in the assignment of programs and activities. In addition, Miller found that "one further effect which formulas and cost analysis have on the decision-making process has been to cause some shifting in the locus of decision-making. The use of formulas tends to bring those that are involved into the budgetary process sooner and tends to keep them involved longer." It is Miller's (1964) contention that these organizational changes tend to promise more communication within the system of higher education that then tends to promote a more open group decision-making process. While Miller (1964) did not carry it to the next logical step, it can be said that this group decision-making may be done whether through a formal organization, through informal communication channels with the systems, or by both. Thus, while there may exist a formal structure for the discussion and decision-making process involved in developing, maintaining and refining the formula because of the impact of the formula those that are affected will keep a closer eye on it, will tend to react and provide input, and will confer amongst themselves on an informal basis whether they have direct responsibility for the formula or not.

The formula approach in funding appears to be the best available method developed to date to achieve a satisfactory relationship between state government and state universities in the allocation of tax payers' dollars. While formula funding may not be perfect, it provides for a system of equity and adequacy, and is objective in scope by removing, inasmuch as possible, the political overtones of the funding process (Noe, 1986).

Decision-Making

The classical decision-making model tends to be classified as a rational model. The rational model, predicated on the predictable and rational human behavior, dominates the decision-making theories. One obvious weakness of this model is how rational or not humans may behave. Frederick Taylor and Henri Fayol modeled the rational decision-making process with their foundational work in management science. In the rational model, a decision maker's objective is to make a decision that maximizes efficiency and effectiveness. Impartiality is an assumption in the rational model. In practice, however, the process is often difficult to observe

and does not follow the stages clearly identified by the theoretical models (McCall & Kaplan, 1978). This resulting situation is characterized as disorderly or ambiguous process (Cohen & March, 1986).

Dahl (1961) and Hunter (1953, 1980) recognized in their research of community power that as the issues change, so do the participants in and the approaches to decision-making. Under the rational model's assumptions it is assumed that the decision maker has the competence to identify the goals, alternatives, and the consequences of each alternative decision. These problems often increase when the decision is to be made by the public sector. Lindblom (1957) was among the early critics of the application of the rational decision-making model in the public sector.

Other models have been developed to explore the non-rational processes in the public sector. In Perrow's (1986) *Complex Organizations: A Critical Essay*, he stated, "They attempt to be rational but their limited capacities and those of the organization prevent anything near complete rationality. For one thing, they do not have complete knowledge of the consequences of their acts" (p. 121). Hoy and Tarter (1995) denoted that the lack of rationality of the human being is believed to be the natural state in decision-making.

Cohen and March (1986) dismiss the rational model's "primacy of rationality." They argued that the rational model dismisses decisions based on intuition, faith and tradition. Additionally, they argue the rational model "assumes the existence of a set of consistent goals" (p. 218). This assumption is often untrue, especially in organizations that operate in an environment of uncertainty. Cohen and March (1986) offered the Garbage Can Model as a theoretical basis of organizational decision-making.

In *Administrators Solving the Problems of Practice*, Hoy and Tarter (1995) explained how this model relates to educational institutions:

The so-called garbage can model of decision-making is most likely to occur in organizations with extremely high uncertainty. Such organizations are typically characterized by problematic preferences, unclear technologies, and fluid participation. Problematic preferences are ambiguities that prevail in the decision process. Unclear technology simply means that cause and effect relationships within the organization are virtually impossible to determine. There is a lot of random activity. The notion of fluid participation underscores the rapid turnover in participants and the limited time available for any one decision. (p. 60)

While Cohen and March decision-making model may not perfectly describe an organization's decision-making process, it attempts to bring about understanding of irrational organizational behavior. Additionally, it attempts to explain "why solutions are proposed to problems which do not exist, why choices are made which do not solve problems, why problems exist in spite of solutions, and why so few problems are solved" (Hoy & Tarter, 1995, p. 61).

Cohen and March (1986) have identified four independent streams within their decision making model. The four streams are referred to as problems, solutions, participants and choice opportunities. The intertwining of these streams may produce solved problems. In practice, the chaotic conditions that may exist in state government and educational organizations, many problems are not solved. Hoy and Tarter (1995) recognized that "the garbage-can metaphor is a description of how things sometimes happen, it is not a suggestion for action" (p. 61).

When state financing strategies are reexamined, those analyzing the existing state of affairs and alternative strategies need to utilize a broad framework that considers the evolving state role and other factors that influenced a state's ability to finance public higher education.

Higher education is vital to human and economic development, yet the way many states manage their higher education resources can have a large influence on their economic fortunes (St. John, 1991).

CHAPTER THREE

INTRODUCTION

The purpose of this chapter is to describe the methodology and procedures that was used in this study. The following topics are discussed: (a) an introduction, (b) the method, (c) the subject of the case study, (d) the data needs, (e) triangulation, (f) the instrumentation, (g) the data gathering, and (h) the data analysis.

Method

The method used is investigative social field research. There are several reasons for the selection of this method. The investigative social field research method is not limited to traditional means of gathering and analyzing data. It allows the development of friendly and trusting relations to get at the inner, emotional and symbolically meaningful experience that corresponds to the needs of this study. Investigative social research can also include data not limited to quantification. Investigative social research permits the researcher to focus on one site that is studied thoroughly. The method is flexible enough that it “includes all forms of study of society in natural situations by means of natural social interaction” (Douglas, 1976, p. 16). The non-participant field research method involves little or no direct interaction with the people, acts or social products being observed in their natural setting and is flexible enough to be used to study a variety of human endeavors. Goffman (1963) indicated that non-participant field research does rely upon interaction or participation for its crucial data, the imputed social meanings...it uses previous, general cultural participation...not participation with people actually being studied. Investigative social research method is not, however, without limitations as a research method.

Some problems inherent in investigative social research method are problems often associated with social science research in general:

1. Participants may modify their role to be seen in a more favorable light. It is difficult to determine a participant’s actual intentions as opposed to their reported intentions.
2. Researcher bias or error may affect the outcome in a number of ways: (a) by not asking the right questions, (b) by not determining if the data might not support other interpretations, (c) by suppressing, dismissing, or failing to gather data because of bias.
3. There are often concerns about reliability and generalization (Yin, 1994; Spierer, 1980).

On the whole, however, investigative social research allows the investigation of many areas of study not otherwise available to researchers, and encourages a high degree of realism in research.

The qualitative or naturalistic research model was designed by anthropologists and has been used in the educational field only in recent years. Qualitative and quantitative research models are grounded in very different sets of assumptions (Borg & Gall, 1989). Lincoln and Guba (1985) have suggested five basic underlying assumptions for qualitative or naturalistic research model. Following is a discussion of those assumptions:

1. The first assumption is concerned with the nature of reality and the notion of generalization. Each subject of study is considered to be different and should be researched holistically, disallowing the formation of generalizations. A level of understanding of a particular phenomenon may be achieved by examining subjects

- through the use of "why" questions that lead to an understanding of the participant's perspectives. Nothing is perceived as trivial, and everything may be a piece of information that will lead to greater insight into the subject being studied. (Bogdan & Biklen, 1982)
2. The relationship of the researcher to the research subject is the focus of the second assumption. The qualitative model suggests that the researcher and the subject interact in such a manner that they influence each other and become inseparately interconnected. The researcher's ability to gain entry into the thoughts and feelings of the research subjects is crucial in qualitative research, but is important that provisions be made to control for personal bias and interpretation. (Borg & Gall, 1989)
 3. The next assumption of qualitative research focuses on the possibility of generalization. The aim of qualitative research is to develop a body of knowledge unique to the research subject that can be used to form hypotheses regarding the subject. At times information derived in qualitative research findings may be transferred to different situations in terms of policy making and organizational theory. (Marshall & Rossman, 1989)
 4. The fourth assumption is concerned with causal linkages. The qualitative model suggests simultaneous interaction occurs between situational elements, making it impossible to distinguish cause and effects. (Borg & Gall, 1989)
 5. The final assumption focuses on values. The qualitative research model highlights the belief that research is value-bound. Values of the researcher, the theoretical framework, methodology, and existing values within the context of the inquiry are inevitable influences on the research outcomes. (Borg & Gall, 1989, pp. 151-153)

Erikson, Florio, and Bushman (1980) noted that examination of the relationship of what is happening in a certain situation to the wider context of that setting might be carried out most effectively through the qualitative design. The flexibility of the qualitative paradigm was needed to accommodate the investigation of this complex field of the proposed study.

Direct observation of the decision makers gave a more accurate account of what was really going on than using a quantitative measure such as a questionnaire. Smith (1978) had pointed out it is much more difficult for participants to "mask" reality in an actual observation than in a questionnaire.

The boundaries of this study limit it to the decision-making process in the Commonwealth of Virginia regarding the decision to discontinue formula funding. The study is limited to the events that led up to the decision to discontinue formula funding and adopt a different funding methodology for publicly funded institutions of higher education.

The Subject of the Study

The subjects of the study are the state-level decision-makers responsible for funding institutions of higher education in the Commonwealth of Virginia. The decision-makers identified for the purpose of this study are individual decision makers within the following state agencies: (a) the State Council of Higher Education for Virginia, (b) the Department of Planning and Budget, and (c) the Commonwealth's Senate and House Finance Committees, (d) the Governor's Office and Cabinet.

One reason for choosing Virginia for this study was the researcher's knowledge of Virginia's system of higher education. Another was the regional proximity of Richmond, Virginia, the site of the study. According to Spierer, (1980) the use of convenience sampling is usually the most common method of selecting a site; and it is the least desirable reason in the

absence of other rationale for site selection. Other rationale for why the Commonwealth of Virginia is an excellent choice for this study are:

1. Virginia used formula funding for institutions of higher education from 1968 to 1990.
2. The governmental structure of the Commonwealth of Virginia is considered to be a highly centralized.
3. Currently, there exists a contingent that would like to return to some type of formula funding.

The site was, therefore, an excellent example of the adoption and implementation of an important, fundamental decision made by state decision-makers.

Data Needs

Information on how and why the Commonwealth of Virginia reached the decision to discontinue formula funding could only be obtained by in-depth interviewing of the participants in the decision-making process. These data needs include an analysis of the problems identified in the state that led to changing the funding methodology as a solution, other possible solutions to these problems that may have been considered to resolve these problems, and the rationale for changing the methodology.

A widespread misconception regarding data collection is that they are endowed with magical properties, “out there” waiting to be collected. Merriam (1998) maintains that data are “nothing more than ordinary bits and pieces of information found in the environment” (p. 69). Unless data are first noticed by the researcher and treated as such “for purposes of his or her research” (Dey, 1993, p. 15), they never transcend their commonplace characteristics. “The data collection techniques used, as well as the specific information considered to be data in a study are determined by the researcher’s theoretical orientation, by the problem and purpose of the study and by the sample selected (Merriam, 1998, p. 70).

Merriam (1998) recognizes interviewing as the most common form of data collection. As conversations “with a purpose” (Dexter, 1970, p. 136), interviews allow the researcher to gather descriptive data in the words of study participants so that insights can be developed as to how they interpret “some piece of the world” (Bogdan & Biklen, 1992, p.96). According to Patton (1990),

We interview people to find out from them those things we cannot directly observe... We cannot observe feelings, thoughts and intentions. We cannot observe behaviors that took place at some previous point in time. We cannot observe situations that preclude the presence of an observer. We cannot observe how people have organized the world and the meaning they attach to what goes on in the world. We have to ask people questions about those things. The purpose of interviewing, then, is to allow us to enter into the other person’s perspective. (p. 196)

Goetz and LeCompte's (1984) guidelines for conducting interviews in qualitative research were followed in this dissertation:

1. Use language that is clear and meaningful to the subject when phrasing questions.
2. Each question should contain only one idea.
3. Open-ended questions elicit richer qualitative responses.
4. Probing may be useful in obtaining more complete information.
5. During the interview the respondent should talk more than the interviewer.
6. Complex questions should be asked during the latter part of the interview after rapport has been built.

7. Use a conversational mode during the interview to establish an atmosphere of trust and understanding.

Individual needs of each participant were considered, and an attempt was made to arrange each interview in a quiet, comfortable setting.

To understand how and why the Commonwealth of Virginia discontinued formula funding, informed decision-makers at the state-level were interviewed. Interviews were with decision-makers and others knowledgeable about the making of a decision. These persons included former appointees, agency heads, agency staff, and others who were involved in the decision to discontinue formula funding.

A purposeful sampling procedure was used to select participants representing a wide range of backgrounds and affiliations. Purposely selecting a wide range of subjects to observe enhances the researcher's likelihood of uncovering a complete array of "multiple realities" pertinent to the inquiry (Borg & Gall, 1989).

Several different terms have been used in discussing purposeful sampling. Schatzman and Straus (1973) have used the term selective sampling and maintained it is used for practical reasons since obviously everyone concerned with a particular topic cannot be interviewed. Goetz and LeCompte (1984) referred to this strategy as criterion-based sampling because criteria or standards must be established for the purpose of selecting participants.

Goetz and LeCompte (1984) reported that for qualitative researcher, their purposes include using strategies to expand the scope of the study, refine the questions or constructs under investigation, or generate a new line of inquiry. Although some phenomena can be identified and characterized as salient prior to entering the field, many others emerge only as the fieldwork proceeds. Consequently, selection in qualitative research is a developmental, ad hoc procedure rather than a priori parameter of research design. (p. 69)

The subjects who were interviewed were asked about the problems, solutions, participants, and the choice opportunity that forced the decision to be made when it was. Specific questions asked are on the interview instrument. The researcher allowed for ample opportunity for the interviewee to expand on each question or to offer new information.

Triangulation

Deriving information from multiple sources of data has been referred to as triangulation of methodology (Shipman, 1981). Triangulation, a term taken from surveying, implies that if three points of a triangle are known, there is a measure of agreement. Conversely, if only one or two points are known, then the size and shape of the triangle is in question (Miles & Huberman, 1994). Using data from different sources to corroborate or illuminate research questions can enhance the study's usefulness and generalizability (Rossman & Wilson, 1985). The use of the term in qualitative research refers to the use of multiple sources to document findings. In qualitative research there are several kinds of triangulation. According to Miles and Huberman (1994, p. 287) triangulation can be achieved:

1. by method of gathering, such as interviews or observation,
2. by researcher, each researcher observing the same phenomena or reaching the same conclusion,
3. by data source, i.e., persons, places, times, etc.,
4. by theory, or
5. by data type, such as quantitative or qualitative.

The purposeful sampling technique allowed for triangulation as participants were selected from multiple associations with the study. The main goal is to “pick triangulation sources that have different biases, different strengths, so they can complement each other” (Miles & Huberman, 1994, p. 267).

In this study, triangulation of the data was achieved by asking interview questions to participants who were in favor of discontinuing formula funding as well as those who were against it. Participants were found at various levels of the decision-making process, including formal and informal channels. Some of the interviewees were from within the decision-making process while others were merely observers of the process. Some of the persons interviewed are no longer appointed officials, or are no longer employed by or appointed to positions within the Commonwealth of Virginia. The interview respondents were grouped into three groups: State Council of Higher Education in Virginia appointees and staff, Department of Planning and Budget and the General Assembly appointed officials and staff, and other individuals referred to as the Collective Data Group. Triangulation was achieved primarily by data source. This was achieved by comparing the responses of the groups and to challenge the data that could not be verified.

Instrumentation

An interview protocol was developed to gather basic information from each subject to be interviewed. It consists of questions in the following areas: rationale for discontinuing formula funding, forces causing the decision, and alternatives that received consideration. The questions on the instrument are related to the four Garbage Can Model streams of problems, solutions, participants and choice opportunities that lead to the decision. The list of questions used in the interview process is presented in Appendix A.

Gathering the Data

This research employed a naturalistic design for the collection of interview data from decision makers. A naturalistic design is used when the researcher does not intend to manipulate or control the research setting (Patton, 1990). In a naturalistic design, the researcher is oriented toward discovery, and its approach is holistic. The experience of the decision makers was therefore explored as a complex, independent phenomenon situated in a social and historical context (Patton, 1990).

The research was focused on in-depth understanding on how and why the decision was made to discontinue formula funding. Typically, such qualitative inquiry uses relatively small, purposefully selected samples (Patton, 1990). Purposefully sampling uses “information rich cases” for study, those that enables the researcher to learn in detail about the phenomenon of interest (Patton, 1990, p. 169).

Criteria for Sample Selection and Sample Size

Participants in this research must have been a state-level decision maker responsible for funding institutions of higher education in the Commonwealth of Virginia. The decision-makers identified for the purpose of this study are: (a) the State Council of Higher Education for Virginia, (b) the Department of Planning and Budget, and (c) the Commonwealth’s Senate and House Finance Committees, (d) the Governor’s Office and Cabinet.

In this study, the criteria for selection of the interviewees were: (a) the interviewee must have been directly involved with the funding decisions of public higher education between 1989 and 1992; (b) the interviewee must have been a state employee or appointee within State Council

of Higher Education of Virginia, the Department of Planning and Budget, or the Commonwealth's Senate and House Finance Committees, or the Governor's Office or his Cabinet, (c) and the interviewee was willing to devote time and effort in taking part in the study. The selection processes were dynamic, phasic, and sequential rather than static.

After eight interviews, the researcher believed the interviewing process had reached data saturation. Data saturation is reached when no new or relevant data appear to emerge. It is always wise to continue to collect one or two more interviews beyond the point at which data saturation is believed to be reached (Strauss & Corbin, 1990). Therefore, the researcher planned to collect two more interviews to insure that data saturation had indeed been reached. Therefore, the final sample size of this study is ten.

Sample Description

This section briefly describes each of the participants. The researcher interviewed these ten participants through ten in-depth interviews. The interviews ranged from 55 minutes to over two hours with the median length of about 1-1/2 hours. Table 1 presents a brief description of each participant. All were senior level staff with extensive experience in their respective positions and considered by players in the state level processes connected with financing Virginia's higher education. All were critically involved in the development and implementation of Appendix M and the decision to discontinue formula funding.

Data Collection

The data was gathered from interviews. Interviews were conducted with the decision-makers as well as those knowledgeable about the making of the decision. Information was gathered from various participants whether they were for or against the decision.

Interview participants were identified in December 1999. Data collection did not begin until March, 2000, and in the meantime the researcher communicated by telephone with participants to keep them updated on the progress of the study. Interview appointments were made with participants approximately one to two weeks prior to the interview.

Strauss and Corbin (1990) recommended that data collection and analysis be done in a sequential and interactive fashion, particularly at the beginning of data collection. Therefore, each of the ten interviews was conducted, transcribed and almost completely analyzed by the researcher before continuing to the next interview. The researcher interviewed participants in their offices to triangulate by data source (Patton, 1990). This process will be described below. All interviews were in person at the participant's current office. Introductory telephone calls were made to all subjects to establish an interview appointment. All subjects were offered strict confidentiality. The researcher prepared an informed consent release form that indicated that participation in the interviews was completely voluntary and could be terminated at any time by the interviewee. All persons interviewed were asked to sign the release document to acknowledge the voluntary nature of the interview. Nine of ten participants have opted for confidentiality on the release document. Anonymity was a primary concern of the persons who are either still employees or appointees of the Commonwealth of Virginia.

As each interview progressed, the researcher wrote down the responses to the interview questions. Permission to tape the interviews was requested; and all participants granted permission to tape the interviews. Audio-taping of each interview ensured accuracy in reporting the findings and allowed the researcher to establish better eye contact and maintain a closer

Table 1
Interview Participants

Participant	Agency/Organization	Level	Interview Location
1	State Council of Higher Education in Virginia	Executive	Office Richmond, Virginia
2	State Council of Higher Education in Virginia	Executive	Office Richmond, Virginia
3	Governor's Cabinet	Executive	Office Richmond, Virginia
4	General Assembly Staff	Managerial	Office Richmond, Virginia
5	General Assembly Staff	Managerial	Office Richmond, Virginia
6	Governor's Cabinet	Executive	Office Richmond, Virginia
7	Department of Planning and Budget	Executive	Office Richmond, Virginia
8	State Council of Higher Education in Virginia	Executive	Office Richmond, Virginia
9	Virginia Community College System	Executive	Office Richmond, Virginia
10	Virginia Community College System	Managerial	Office Richmond, Virginia

rapport with participants during the interview process. The tapes were transcribed and reviewed following each interview. The tapes provided a valuable resource during the data analysis process.

Constructivist inquiry requires the establishment of a “respectful and interactive researcher-respondent(s) relationship” (Manning, 1997, p. 95). In this research, the researcher established such a relationship by corresponding regularly by telephone and email throughout the research; and sharing personal stories about his own higher education operational experience.

Data Analysis

Analysis is crucial to the usefulness of research. Meanings and explanations are the end result of this process. Yin (1994) recommended the development of analytic approaches early in the formation of the study. He states “he knows colleagues who have simply ignored their study data for a month after month, not knowing what to do with the evidence” (Yin, 1994, p. 102). Miles and Huberman (1994) recommended an interactive model of analysis wherein the data collected is subjected to three types of analysis activities: reduction, display, and conclusion drawing/verifying. “The researcher steadily moves among these four nodes during data collection and then shuttles among reduction, display, and conclusion drawing/verification for the remainder of the study” (Miles & Huberman, 1994, p. 12). Merriam (1989) suggested that qualitative data analysis involves the establishment of a sense of order to the data through topical or chronological presentation.

The four streams of Cohen and March (1986) decision-making model were the basis of the development of the interview protocol. The model's four streams are problems, solutions,

participants, and choice opportunities. All but one of the interview questions can be categorized in one of the four streams.

Each of the transcribed interviews was read through once, without coding (analysis). Each interview was then coded and summarized by each categorical structure or stream on a data reduction sheet that groups the responses according to Cohen and March decision-making model's four streams (problems, solutions, participants, and choice opportunities) and by the three interviewee groups. A response or comment was defined as a sentence or group of sentences that addressed in issue or topic within each of the four streams. In this study, there were a total of 106 responses or comments within the four streams. The employment of the data reduction sheet facilitated data reduction and data display and the creation of data tables. An additional goal of the data display was to maintain anonymity and confidentiality of the participant's responses. The interviewee's rank number displayed responses for each of the four streams. This display was developed as a table that graphically depicts the frequencies and type of responses for each stream.

The matrices were organized according to Cohen and March decision-making model's four streams. Each matrix included direct quotations on the components identified. The matrices facilitated the formulation of conclusions. The conclusions are presented in Chapter Five.

By employing this method of data analysis, Cohen and March decision-making model's four streams are described. The four streams were utilized to explain the decision-making process in the discontinuance of formula funding for institutions of higher education in the Commonwealth of Virginia.

CHAPTER FOUR

FINDINGS OF THE STUDY

Research findings are presented in this chapter. Cohen and March decision-making model holds that there are four streams of activities flowing through an organization that influence the making of decisions. These streams of activities are problems, participants, solutions and choice opportunities. While these streams are independent, they may be linked when an opportunity for a decision is presented. Cohen and March (1986) stated that most often this does not occur. Organizations may in fact focus on a solution that does not address the problem.

The general themes of each of the streams of Cohen and March decision-making model that were used to guide the interviews were used as sub-headings for the purposes of organization and clarity in presenting the interview findings. Participants were coded into three segments according to their relationship to the study: (a) State Council of Higher Education in Virginia (SCHEV) appointees and staff, subsequently referred to as Group A; (b) Department of Planning and Budget (DPB) and the General Assembly appointees and staff subsequently referred to as Group B, and other individuals referred to as the (c) Collective Data Group, subsequently referred to as Group C. Table 2 provides the details of the participants' responses by each stream of Cohen and March decision-making model.

Table 2

Statements by Participant by Theme—Frequency of Informant Comments Across Information

Informant	Problems	Participants	Solutions	Choice Opportunities	Total
1	5	2	1	2	10 (9%)
2	7	2	3	1	13 (12%)
3	4	2	4	1	11 (10%)
4	4	3	3	2	12 (11%)
5	5	1	3	2	11 (10%)
6	6	3	3	1	13 (12%)
7	4	2	3	1	10 (9%)
8	5	3	2	4	14 (13%)
9	3	1	2	1	7 (7%)
10	2	1	1	1	5 (5%)
Total	45 (42%)	20 (19%)	25 (24%)	16 (15%)	106 (100%)

General Observations

This section of the study reviews the observations of the data collection process. All pre-identified participants agreed to participate in the research. In general, all participants were responsive to the task. The interviews were held at an agreed upon time in the current office of each participant.

Interviewees were participatory and appeared to provide genuine responses to the questions. The research noted that nine of the 10 participants requested confidentiality. The data collected was rich and descriptive providing substantial information for this research project. The interview protocol was unchanged during the data collection process.

The Site

The Commonwealth of Virginia has 15 four-year public institutions of higher education (six doctoral, nine comprehensive), one two-year college, and 23 community colleges that are part of the Virginia Community College System. Individual boards of visitors, appointed by the Governor, govern Virginia's higher education institutions. The State Council of Higher Education (SCHEV) serves as a coordinating board for Virginia's public institutions of higher education.

The development of the public higher education budget has always been a focus of SCHEV's efforts. Prior to 1968, budgeting for higher education was done on an incremental basis, that is building upon a base budget without the use of formal formula guidelines. The Division of Budget (forerunner of DPB) for the 1968-1970 biennial began a system of general formulae to help establish operating expense guidelines for public institutions of higher education. This formula or guideline approach was initiated in the mid-1960s as a way of managing the significant growth of higher education and the continuing conflicts between SCHEV and the Division of Budget over the expanding higher education budget (Kellogg, 1974).

Later in 1968, the Division of Budget outlined to SCHEV the requirements for guidelines that it needed for the 1970-1972 biennial budget. The collective set of formulae and guidelines was henceforth referred to as "Appendix M" titled "Guidelines and Special Requirements for Institutions of Higher Education." The common name, "Appendix M" arose from the guidelines location in the 1970-1972 Commonwealth Budget Manual. Appendix M constituted the first formal set of formulae or guidelines published for solely for higher education.

Although the budget guidelines were not written into law or binding on the General Assembly in making appropriations, they have been generally accepted by that body (Department of Planning & Budget, 1985). The 1974 report of the General Assembly Commission on Higher Education described the guidelines as the "expression of educational needs in financial terms" (Department of Planning & Budget, 1985).

Prior to the recession of the early 1990s, operating funding for higher education flowed from four basic policies: (a) Staffing Guidelines: Formulas driven primarily by enrollments; (b) Tuition Policy: Predicated on Virginia resident students paying 25% of the instructional costs, and out-of-state students paying 75%; (c) Peer Group Benchmarks: Utilized for determining faculty salary goals (60th percentile); and (d) Special Studies: to address selected needs. (i.e., equipment, technology, etc.). Funding for special, institution-specific initiatives took place outside of this framework.

The guidelines known as "Appendix M" were driven by enrollment projections. They addressed personal services or staffing needs (classified staff, instructional, and administrative) and non-personal service requirements such as library resources, computing, equipment, and plant operation. Policies inherent in the guidelines recognized that the mission and program mix of each individual institution determined the cost of education at a college or university. As an example, the guidelines were used to indicate how many faculty and staff should an institution have for a given enrollment and how many physical plant staff should it have for a given number of square feet and volume of traffic.

Funding or revenues for the institutional educational and general (E & G) expenditure budget sources were the state general funds and non-general funds. Student tuition and fees are appropriated as a non-general fund revenue source. These policies were based on the premise

that the diverse missions and program mix of each individual Virginia institution determined the cost of education at a college or university.

Funding requests or actual appropriations were often expressed in terms of a percentage of the guidelines. For example, requests were stated as 90% of the staffing guidelines or 100% of library book and periodical guidelines.

The Decision

The decision to make a movement from formula funding of institutions of higher education in the Commonwealth of Virginia is far from an overt action. The following is a brief summary as provided by the interview participants of the decision to discontinue formula funding of institutions of higher education in Virginia.

The “way the budget was put together when Governor Baliles was in office was a very full budget, including what we viewed as a premier higher education budget for the 1990-92 biennium” (Participant C1). The fact the recession was at hand “did not appear until the first part of 1990” (Participant A1). This fact was “a particularly very problematic” because of the “completed Baliles budget” (Participant A3). The reports from “the leading indicators and state economists noted that revenue growth was non-existent, it was flat” (Participant B2). The feeling was “this is just the first quarter of 1990 and it is too soon to get a feel for the results” (Participant B1). The state grappled with its revenue forecasting models “by bring in a select committee of the governor’s advisory board of economists who were from various Virginia institutions of higher education, state economists and consultants who reviewed the models; concluding the models were valid” (Participant B3).

Governor Wilder “announced in late 1990 that he thought we were in a recession” (Participant C3). The revenues shortfall “revision was calculated to be \$2.1 billion over a two-year period” (Participant B2). The path “was clear, the revenue projections on which the Balilies budget was based upon were not going to be realized and that we were going to have to cut the budget” (Participant C2).

Plans were established to deal with the impact of revenue shortfalls. The “governor and the general assembly reviewed what they considered to be the highest priority” (Participant C3). The priorities of “public safety, Medicaid, and school aid were the highest” (Participant C1). Budget cuts were necessary “for all lower priorities and higher education was included in that mix” (Participant A1). The governor’s office perspective “was if higher education could bear the same proportional share of statewide budget reduction or not...yes, they would bear the same amount” (Participant B3).

The revenue forecasts continued to be bleak. The Governor “[Wilder] had some of his own initiatives that he wanted to do and it became very obvious that he would not be able to do them” (Participant C4). The focus by the governor was “spending time on dealing with how to cut the budget, rather than focusing on new initiatives” (Participant C3). The driving values during these times were “having a balanced budget, maintaining the continuity of essential public services, avoiding a tax increase, and protecting the Commonwealth’s AAA bond rating” (Participant C2).

There were various alternatives presented other than across-the-board budget cuts. Governor Wilder was “facing pressure from a lot of legislators to raise taxes and to offset some of the cuts that way” (Participant C3). The reason for inclusion of higher education in the cuts “was there was an alternative source for higher education, namely tuition and fees” (Participant A2). The climate was a “time of radical change in the economic environment that induces irrational behavior, with a preference for the pragmatic approach” (Participant B2).

With respect to formula funding of higher education, “the discontinuance of formula funding was a continuum process” (Participant B2). An important fact “was the formulas were never in the appropriations act, simply guidelines, not a matter of law” (Participant B3). With the recession, “it became ridiculous to spend a whole lot of time to run the formulas when you knew they were not going to be funded” (Participant A2). Funding desires for higher education “became a desire to preserve the base” (Participant A3).

The State Council of Higher Education chose to discontinue presenting the formulas since “no one clamored for it” (Participant A2). In comparing the formula’s output with the amount higher education was funded, “the amounts were getting out of kilter” (Participant A3). The formulas “just fell into disuse” (Participant A2).

The Problem Stream

Problems are the concern of people inside and outside the organization (Cohen & March, 1986). Regardless of the issue, all problems require attention. Problems are distinct and may not be resolved when choices are made (Cohen & March, 1986, 1990).

Of the 10 persons interviewed who were considered knowledgeable of problems that led to the decision of discontinuance of formula funding, all offered opinions on the problems that may have guided the decision. Table 3 provides the details on the number of comments, and the number of participants who offered those comments related to each stream of Cohen and March decision-making model. Overall, Group A made 17 comments, Group B made 13 comments, and Group C made 15 comments for a total of 45 comments assigned to the problem stream. The participants identified a total of 12 problems.

Of the ten interviewees all agreed that a central problem leading to the decision to discontinue formula funding was inadequate resources to allocate (due to the recession) for the 1990-1992 budgets, however, there were no specific opinions or understandings on how the shortfalls specifically effected formula funding for higher education. Overall, Group A made three comments, Group B made three comments, and Group C made four comments indicating inadequate resources as a problem.

Examples of the comments made by the interviewees that suggested that a central problem leading to the decision to discontinue formula funding was inadequate resources included:

It became clear that again, revenue growth was not going to keep pace with appropriation obligations and serious cuts were then proposed in biennial budgets for 1990-1992 and 1992-1994. I recall during this period that higher education budgets were cut 5% I believe each year. (Participant C4)

It was a resource allocation tool and when you don’t have the resources to allocate, it loses its worth. That’s the main reason. You have to be realistic. We could have kept running it, but it wouldn’t have made much sense to do it. (Participant A2)

It was at some time between the formulation of the last budget in the Baliles' administration, at least it is my understanding that this was the case, and when Governor Wilder took office that they realized there was a significant mismatch between expenditures and revenues. (Participant B3)

We had just finished putting together what we thought was the premier budget for higher education for the 1990-1992 biennium. Our first task upon taking office was to start cutting that budget. (Participant A3)

...then it became quite clear that the revenues were not going to meet the original forecast upon which we built Governor Baliles' last budget. (Participant C1)

I didn't think that we had any real realization until we until the Wilder team got started in January 1990 and we did a reevaluation of the revenue estimate around January or February of that year. Then we realized that the revenue projections on which the Baliles' budget had been based were not going to be realized. (Participant C2)

We did not think that we really had a recession until the first part of 1990 and the dates are a little fuzzy. What I do recall is that a number of us were concerned that the revenue growth was not keeping pace with expectations. That was a particularly problematic time because we were assembling Governor Baliles' final budget. (Participant B1)

Low and behold, there was a billion dollar shortfall... Surprise, surprise. (Participant A1)

You're asking in the normative, that's so much that's bothers me, because so much of the thing it gets down to values of the people at the time, the personalities, the situation. I guess my premise is that radical change in the economic environment can bring about irrational behavior but a preference for the pragmatic approach, a preference for the episodic, sort of the piecemeal approach that emphasizes survival, albeit with sacrifice. (Participant B2)

Eight respondents indicated that the increase in funding requirements for entitlement programs and prisons was a problem that may have led to the decision. Overall, Group A made three comments, Group B made two comments, and Group C made three comments indicating funding requirements for entitlement programs and prisons was a problem.

Examples of comments made by the interviewees that suggested funding requirements for entitlement programs and prisons was a problem included:

...But really it was corrections and Medicare that were going sky high. It displaced some of the attention from higher education. (Participant A1)

There were demands from the area of public safety and Medicaid that also were increased. (Participant B3)

There were tremendous increases of the cost of Medicare/Medicaid pieces of the budget that we had to match. That was mandatory. It was tremendous cost shift from the federal government to the states. (Participant A3)

One thing you have to bear in mind is that higher education is a fairly significant portion of the budget and its one of the few relatively discretionary portions of the budget. Medicaid and other such programs are non-discretionary because they were mandated programs. (Participant C4)

We were very concerned about prisons for one thing. Not that it was an important initiative to build more prisons or hire more guards. It was just that the risks associated with prison riots, prison breakouts and escapes were so high that no governor could afford not to protect the corrections budget from reductions. It was a perennial problem all throughout the 1980s and early 1990s. Prison inmates were being double and triple bunked in the maximum-security prisons. There were a lot of assaults on prisoners, assaults on guards. There were some escapes, not many, but there was always a concern in the summer when the prisons weren't air-conditioned that there was going to be a riot. (Participant C1)

Table 3

The Problem Stream: A Tally of Responses of Interviewees Who Cited Particular Problems in the Commonwealth of Virginia at the Time of Decision

Interviewee	Inadequate Resources to Allocate	Increase in entitlement programs and prisons	Formulas were voluntary, not mandated	Rigid Input Model	Formulas did not reflect reality	Lot of distrust of higher education
Group A						
Person 1	X	X			X	X
Person 2	X	X	X	X		
Person 3	X	X	X	X		X
Group B						
Person 1	X		X			
Person 2	X	X	X	X	X	
Person 3	X	X	X			
Group C						
Person 1	X	X	X			
Person 2	X	X		X		X
Person 3	X			X	X	
Person 4	X	X				
Total	10	8	6	5	3	3
Comments						

Table 3 (continued)

The Problem Stream: A Tally of Responses of Interviewees Who Cited Particular Problems in the Commonwealth of Virginia at the Time of Decision

Interviewee	Formulas became an embarrassment	Formulas not connected to revenues	Formulas were reactive rather than strategic	Formulas always meant increases	No predictability from biennium to biennium	Formulas were not decremental
Group A						
Person 1		X				
Person 2			X			
Person 3	X		X			
Group B						
Person 1				X		X
Person 2						
Person 3		X				
Group C						
Person 1					X	
Person 2	X			X		
Person 3						
Person 4						
Total	2	2	2	2	1	1
Comments						

Early on it was not a question of what was more important to fund, but a question of what were the mandatory things that had to be funded. At the same time that the state was going through an economic recession, the federal government was also going through an economic recession. So they did an awful lot of cost shifting to the states and there were tremendous increases of the cost of Medicare/Medicaid pieces of the budget that we had to match. That was mandatory. It was a tremendous cost shift from the federal government to the states. This was a time when there was a tremendous increase in projected need for prisons and there was a tremendous amount of concern that we needed more space for prisons. So between K-12, between health care and the prison, those were givens and there wasn't anything left over for higher education. (Participant B2)
Corrections, Medicare and public education. (Participant A2)

Mandatory funding for corrections and healthcare. (Participant C1)

Six respondents indicated that acceptance of the formulas were voluntary, not legislatively mandated that was a problem which may have led to the decision. Overall, Group A made two comments, Group B made three comments, and Group C made one comment indicating formulas were voluntary was a problem.

Examples of comments made by the interviewees that suggested that acceptance of the formulas were voluntary, not legislatively mandated that was a problem included:

Formula funding is not required by state code. (Participant B2)

The formulas served as guidelines without a mandate. (Participant C2)

Higher education is a significant portion of the budget and that is one of the more discretionary elements of the budget. (Participant C4)

The code mandated K-12 funding, not higher education. (Participant A1)

There was no such constitutional provision for higher education. (Participant B1)

The guidelines were not a matter of law. Frankly that was one of their weaknesses. (Participant B3)

Five respondents expressed that the funding formulas were considered to be too much of a rigid input model, which disallowed flexibility in the output. Overall, Group A made two comments, Group B made one comment, and Group C made two comments indicating a rigid input model as a problem.

Examples of comments made by interviewees that suggested that the funding formulas were considered to be too much of a rigid input model included:

It was based on discrete pieces. That's how we did it. (Participant C1)

When you have a model, it is a bit more prescriptive. (Participant A1)

Appendix M was an input driven, FTE enrollment driven model. (Participant A2)

There were problems with an input model...that it's rigid. (Participant C4)

It prescribes production that might not be optimal. It's of one-size fits all across the system. (Participant C3)

Three respondents expressed the general distrust of higher education as being a problem with level of funding generated by the funding formulas. Overall, Group A made two comments and Group C made one comment indicating general distrust of higher education was a problem.

Examples of comments that suggested the general distrust of higher education was a problem included:

I don't really think that they thought that higher education was under funded. I think that they didn't see that discontinuing formula funding would harm something. (Participant A3)

This is national, this is not only Virginia. There is a lot of distrust of higher education. The legislature said we would like to help you some more. We know you're budget has been cut, but you've got to show us and the public that you are running a tight ship, you're making every dollar count. (Participant B1)

The general assembly and other leaders said in no uncertain terms, we don't think higher education is very efficient. It's always been that way. Some years it's blatant and some times it's overt. As the financial pressures are beginning to develop, it's a natural response that people have. (Participant C4)

Three respondents expressed opinions that the formulas did not reflect reality in projecting resource needs for institutions of higher education. Overall, Group A made one comment, Group B made one comment, and Group C made one comment indicating formulas did not reflect reality was a problem.

Examples of comments that suggested the formulas did not reflect reality as a problem included:

They didn't mirror where we wanted to go perhaps. They didn't mirror the efficiencies that the governor and the council felt could be achieved at that time. (Participant A3)

They truly felt that the guidelines were not an adequate representation of needs. (Participant A1)

Higher education has got to show us and the public that you are running a tight ship. (Participant B1)

Two interviewees stated that the funding formulas were not connected to revenue projections. The product of the funding formulas was expressions of resources required, regardless of state revenue projections. Overall, Group A made one comment and Group B made one comment indicating funding formulas were not connected to revenues was a problem.

Examples of comments made by interviewees that suggested the funding formulas were not connected to revenue projections were a problem included:

To employ formulas you have to have state general fund money to drive the formulas. If you don't have that, the formulas are useless to you, so you don't use them per se. (Participant B1)

There was no connection between formula output and state resources. (Participant C3)

Two of the ten respondents stated that the formulas were reactive rather than strategic. The funding formulas were driven by enrollment projections. The opinions expressed lack of a link to statewide strategic planning for higher education. Overall, Group A made two comments indicating the formulas were reactive rather than strategic was a problem.

Examples of comments made by interviewees that suggested the formulas were reactive rather than strategic was a problem included:

The formulas were enrollment driven, not tied to strategic planning. (Participant C1)

It was more reactive than strategic. (Participant C3)

Two participants stated that the funding formulas became an embarrassment. The resources projected by formula funding were substantial in light of the state's fiscal condition. Overall, Group A made one comment and Group C made one comment indicating funding formulas became an embarrassment was a problem.

Examples of comments made by interviewees that suggested the funding formulas became an embarrassment was a problem included:

They became an embarrassment. Let me add one thing to that. The lack of funding was the initial reason for during it. (Participant A3)

As the percentages slipped down, it got to such an embarrassing level that it was discontinued. (Participant C2)

Another problem that was raised by two respondents was that the formulas always meant increases in revenues. The funding formulas' primary input was enrollment. Increased enrollments generated additional resource requirements. Overall, Group A made one comment and Group B made one comment indicating formulas always meant increases was a problem.

Examples of comments made by the interviewees that suggested the formulas always meant increases in revenues was a problem included:

Enrollment driven formulas meant increased resources with increased headcount.

(Participant B1)

Formulas did not reflect reality. Revenues are earned by increasing enrollments.

(Participant B2)

Only one respondent identified as a problem that there was no predictability of state revenues from biennium to biennium. Group C made one comment indicating there was no predictability of state revenues was a problem.

The comment made by an interviewee that suggested there was no predictability of state revenues from biennium to biennium was a problem was:

Good times support rational decision-making. If people have money they gravitate to a rational way of doing things. Good times give rise to those kinds of mathematical formulas and ideas. Bad times don't. Bad times you are going to the roots of your human emotions and your human values and saying we're going to protect the most vulnerable. (Participant B2)

The last problem identified by a single respondent was that the funding formulas were not decremental. The funding formulas were never designed to be used as a means of reducing resource allocations, just as tool for projecting resource requirements based on discrete input variables. Group B made one comment indicating funding formulas were not decremental was a problem.

The comment made by an interviewee that suggested there was no predictability of state revenues from biennium to biennium was a problem was:

The formulas never allowed for inadequate resources. (Participant B3)

Analysis of the problem stream

The interview participants were grouped into three groups: State Council of Higher Education in Virginia staff (Group A); the Department of Planning and Budget (DPB) and the General Assembly appointees and staff (Group B); and the Collective Data Group (Group C). Overall, Group A made 17 comments, Group B made 13 comments, and Group C made 15 comments for a total of 45 comments assigned to the problem stream.

As previously mentioned, the summary of the responses is presented in Table 3. Responses to the problem stream identified by all three groups were (a) inadequate state resources (b) increase in funding for prisons and entitlement programs (c) formulas were voluntary, not mandated and (d) formulas did not reflect reality, and (e) rigid input model. One or more groups identified other problems. Only Group A and Group B identified "formulas were not connected to revenues" as a problem. While there was no agreement by the three groups on this problem, it represents an important point about what these two groups viewed as problems facing higher education formula funding.

Only Group A and Group C identified “lot of distrust of higher education” and “formulas became an embarrassment” as problems. While there was no agreement by the three groups on these two issues, they represent important points about what these two groups viewed as problems facing higher education formula funding.

Only Group B and Group C identified “formulas always meant increases” as a problem. While there was no agreement by the three groups on this final issue, it represents an important point about what these two groups viewed as problems facing higher education formula funding.

Finally, single groups identified three other problems. Group A mentioned “formulas were reactive rather than strategic” as a problem. Group B mentioned “formulas were not decremental” as being a problem. The last problem cited by a single group, Group C, was “no predictability from biennium to biennium.”

A review of the data in Table 3 by group reveals that of the 12 problems identified by the groups, participants of Group A presented nine. All three groups were in agreement on five of the problems. The only problems not mentioned by this group were that there was no predictability from biennium to biennium; formulas always meant increases; and formulas were not decremental.

Group B named eight of the 12 problems. All three groups were in agreement on five of the problems. This group was in agreement with the two groups on one additional problem, respectively.

Group C named nine of the 12 problems. All three groups were in agreement on five problems. This group was in agreement with Group A on two additional problems and with Group B on one additional problem.

The Participant Stream

Cohen and March (1986, 1990) recognize that participants come and go. The participants in the decision of discontinuing formula funding were viewed to be state officials or agencies. There were no outside groups exercising significant influence since there were no public hearings, public votes or other type of constituency input on the decision. All interview participants were asked to identify persons or agencies that were the key participants in the making of the decision to discontinue the use of formula funding. Table 4 provides the details on the number of comments, and the number of participants who offered those comments related to each stream of Cohen and March decision-making model.

The interview participants were grouped into three groups: State Council of Higher Education in Virginia staff (Group A), the Department of Planning and Budget (DPB) and the General Assembly appointees and staff (Group B), and the Collective Data Group (Group C). Overall, Group A made seven comments, Group B made six comments and Group C made seven comments for a total of 20 comments assigned to the participant stream.

Of the ten interview respondents, eight identified the Department of Planning and Budget and the governor's office as the offices responsible for making the decision to

Table 4

The Participants Stream: A Tally of Responses of Interviewees Who Cited Particular Participants in the Commonwealth of Virginia at the Time of Decision

Interviewee	Department of Planning and Budget and Governor	State Council of Higher Education in Virginia (SCHEV)	Never a formal process of abandonment	A consensus
Group A				
Person 1	X	X		
Person 2	X	X	X	
Person 3	X	X		
Group B				
Person 1	X		X	X
Person 2		X		
Person 3	X	X		
Group C				
Person 1	X		X	
Person 2	X		X	X
Person 3				
Person 4	X		X	
Total	8	5	5	2
Comments				

discontinue the use of formula funding. Overall, Group A made three comments, Group B made two comments, and Group C made three comments indicating the Department of Planning and Budget and the governor's office was a participant.

Examples of comments made by interviewees that suggested the Department of Planning and Budget and the governor's office were participants included:

There are two entities that make recommendations or would have made recommendations with respect to Appendix M guidelines. That would have been the governor's office and the Department of Planning and Budget. That decision had to originate where we implemented it through one of those entities. (Participant A3)

It's just that since those are the two agencies that would have made recommendations on the budget for higher education, they had to be involved. The Department of Planning and Budget would have acted in its capacity within the Executive Branch, so they would have been pursuing the Governor's...or implementing the Governor's initiatives and proposals. The State Council of Higher Education is set up as a more independent agency. They would have found themselves more in between the legislature and the executive. (Participant B3)

The Department of Planning and Budget and the governor's office. (Participant C2)

Fundamentally you have to start with the governor and his staff who make the overall decisions about things. They are the ones...but even their world is conditioned. The revenues were going down, so they have the realisms of life to deal with also. So it's not like they have complete freedom of choice, but they are the ones in a state like this one which is strong, particularly in terms of budget power. The governor, they are the ones that make those choices. So they are the ones that made these choices basically. The rest of us were just coping. (Participant B1)

I think they were set primarily at a very high level in the governor's office where the governor would look at his entire general revenue forecast he would then allocate certain things that were a given like public safety, entitlement programs, like Medicaid and then he would allocate some funding for certain high priority areas that were important to his administration and initiatives. What was left over, he would allocate based on their historic share of the pie. The colleges fell into that general area—their share of the pie that remained after some of the upper level decisions were made. You could argue well that constituted abandonment of the guidelines. Still often I know the State Council and the general assembly often used the guidelines to help allocate that target funding across the colleges and often used the guidelines to determine issues having to do with fairness and equity. (Participant C1)

The governor and his staff. Definitely, the governor. When he says hey I know we've got a revenue shortfall but I'm not increasing taxes. So that means that some other people have to make some hard choices. (Participant A2)

The governor's office with close contact with the Department of Planning and Budget would have made the decision. (Participant C3)

Another major decision maker identified by the respondents was the State Council of Higher Education of Virginia (SCHEV). Of the ten interview participants, five identified SCHEV as a major decision maker leading to the discontinuance of formula funding. Overall, Group A made three comments and Group B made two comments indicating the State Council of Higher Education of Virginia was a participant.

Examples of comments made by interviewees that suggested the State Council of Higher Education of Virginia (SCHEV) was a participant included:

I would assume that it would have to be the staff at the Council of Higher Education. In discussions with the council members themselves, in terms of the politics of the decision themselves, but I was not privy to those discussions, so I certainly couldn't say for sure whom those folks were. (Participant A3)

I don't think it originated in any one place because I don't think it was a conscious decision. It was a process. If it originated anywhere it probably originated at SCHEV by their decision to quit displaying the information.

(Participant A2)

You can identify three or four people who were instrumental in maneuvering us through this difficult time. So I'm sure that they talked about the implications of whatever they were doing. It was more maneuvering through difficult times rather than sitting around a table and discussing discontinuing a formula. (Participant C1)

There are two entities that make recommendations or would have made recommendations with respect to Appendix M guidelines. That would have been the State Council of Higher Education and the Department of Planning and Budget. That decision had to originate where we implemented it through one of those entities. (Participant C2)

I would guess that if the decision was made, it was probably made by the Secretary of Education and Deputy and the Department of Planning and Budget. I suspect that they consulted with the SCHEV. I don't know what position the council would have taken on that. I guess that they would have resisted it. I'm sure that the decision rested with the State Council. (Participant B2)

Five respondents stated that there was never a formal process of discontinuance of the formula funding. While this is not a specific identity of participants who would have been involved in the discontinuance of formula funding, it brings attention to the fact that the decision was in fact informal. Overall, Group A made one comment, Group B made one comment, and Group C made three comments indicating there was never a formal process was a participant.

Examples of comments made by interviewees that suggested there was never a formal process of discontinuance was a participant included:

I really can't think of any individuals that were advocating the discontinuance of it.

When you have a \$2 billion hole in the state budget, it dictates what you can and can't do. Different people over the years, the guidelines, wanted to tweak it and make changes here and there, I can't think of anybody who was on a mission to eliminate it. (Participant B2)

There was just a consensus reached between the governor's office and the general assembly during those years. (Participant B3)

You might be supposing more rationality to that or prospective strategic planning to that decision than was probably the case. I think it was pure reaction to the circumstances, that it became politically embarrassing to fund higher education at I'm making these percentages up, but at 65% of the formulaic assessment of need as opposed to 85% which may have been the case in the past. (Participant C2)

The point I was getting at - SCHEV, the Council didn't vote to eliminate, it wasn't a formal elimination process per se. (Participant B1)

Then with the recession we weren't there and it got to the point that it was ridiculous for the Council to spend a whole lot of time to prepare the formula when you knew it wasn't

going to be funded. So we just stopped doing it. No one clamored for us to do it.
(Participant A1)

Two participants stated that the decision participants operated informally as a consensus group. Overall, Group B made one comment, and Group C made one comment indicating a consensus group was a participant.

Examples of comments that suggested a consensus group was a participant included:
I think it was a consensus. We were getting direction in a fiscal crisis from DPB, from the governor and other groups. (Participant A2)

The problem with your premise is that no one ever sat around a table and said let's go after formula funding in higher education. In fact, what they did was to say let's look at the constitutional responsibilities of state government. They wouldn't talk like that but they would say what must we do? You must, for example, protect life and property. You have a policy function in state government. You must have a system of free public instruction that is constitutionally mandated. K-12. We have been dealing with the Medicaid spiral where Medicaid is growing 3 1/2 times the overall budget during the 80s. You must provide health care to the poorest people. You must provide higher education. But what was true in Virginia as well as all other states. All the states were the same. You've got the major budget drivers—K-12, Medicaid, corrections, mental health, higher education. In all of those cases there are no alternatives. When you get to higher education there is an alternative. The alternative is called tuition. (Participant B2)

Analysis of the participant stream

The interview participants were grouped into three groups: State Council of Higher Education in Virginia staff (Group A); the Department of Planning and Budget (DPB) and the General Assembly appointed officials and staff (Group B); and the Collective Data Group (Group C). The summary of the responses is presented in Table 4. Responses to the participant stream identified by all three groups were (a) Department of Planning and Budget and the Governor's Office and (b) never a formal process of abandonment.

Only Group A and Group B identified "the State Council of Higher Education in Virginia" as a participant. While there was no agreement with the three groups on the stated participants, it represents an important point about what these two groups viewed as participants facing higher education formula funding.

Only Group A and Group C identified "a consensus decision" as one of the participants. While there was no agreement by the three groups on the stated participants, it represents an important point about what these two groups viewed as participants facing higher education formula funding.

A review of the data in Table 3 by group reveals that of the four participants identified by the groups, participants of Group B presented all four. All three groups were in agreement on two of the named participants. Group B was in agreement with Group A on one additional participant.

Group C named three of the four participants. All three groups were in agreement on two of the participants. This group was in agreement with Group B on one additional participant.

Group A named three of the four participants. All three groups were in agreement on two participants. This group was in agreement with Group B on one additional participant.

The Solution Stream

A solution is somebody's product and may be proposed even when problems do not exist (Cohen and March, 1986, 1990). The whole point of solutions is to be connected to some problems to be solved.

The interviewees were asked to discuss solutions to the problems of formula funding for institutions of higher education in Virginia. All 10 interviewees expressed solutions. Overall, there were seven solutions presented. Table 5 provides the details on the number of comments, and the number of participants who offered those comments related to each stream of Cohen and March decision-making model. The interview participants were grouped into three groups: State Council of Higher Education in Virginia staff (Group A), the Department of Planning and Budget (DPB) and the General Assembly appointees and staff (Group B), and the Collective Data Group (Group C). Overall, Group A made six comments, Group B made nine comments, and Group C made 10 comments for a total of 25 comments assigned to the solutions stream.

All ten interviewees stated as a suggested allowing colleges and universities control over tuition and fees was a unanimous solution to the problem. This solution was viewed as a means of mitigating the impact of diminishing state resources. Overall, Group A made three comments, Group B made three comments, and Group C made four comments indicating college and university control over tuition and fees was a solution.

Examples of comments made by interviewees that suggested allowing colleges and universities control over tuition and fees as a solution included:

I think some of the principles of formula funding, equitable allocation of resources, access and quality for instance; we tried to address them in different ways. They became more tuition dependent and private funding dependent. But we still tried to aim for equitable, fair allocation of resources and tried to maintain the focus on the adequacy of funding. It just happened to be from tuition and fees, other sources. (Participant C4)

The primary one was of course that during the Wilder administration Gov. Wilder chose to allow tuition to increase and as I said before the tuition authority that was provided to the colleges. (Participant A3)

I don't think it was a knee-jerk. Particularly during the Wilder Administration, the option was to allow tuition to offset some cuts as opposed to discontinuing formulas as a statement of need. (Participant A1)

When you rule out increases in the revenues and you rule out raising taxes, the plea was if you are going to cut us, cut us but let us raise tuition. (Participant B2)

By defraying the cuts through increased tuition, we were passing on some our fiscal problems onto the middle class, who were not eligible for financial aid. Middle class parents having to pay the rising tuition. In fact, I can remember after it was all over, I was introduced to a neighbor down the street. As it turned out, he had two children at Virginia Tech and he was raving mad at Governor Wilder for making that choice. It became a campaign issue. (Participant C1)

The primary one was of course that during the Wilder administration Governor Wilder chose to allow tuition to increase and as I said before the tuition authority that was provided to the colleges was done primarily through the use of formulas, so I think during the Wilder administration there was some attempt to hold onto formula funding. Once we got into the Allen administration there was much less of a sense of loyalty...folks were much less wedded to the notion of sticking to the

Table 5

The Solution Stream: A Tally of Responses of Interviewees Who Cited Particular Solutions in the Commonwealth of Virginia at the Time of Decision

Interviewee	Increase tuition/fees	Program elimination	Increase taxes	Across board budget cuts	Revamp formulas	Incremental funding	Increase student financial aid
Group A							
Person 1	X						
Person 2	X		X				
Person 3	X		X		X		
Group B							
Person 1	X		X	X			
Person 2	X			X		X	
Person 3	X	X			X		
Group C							
Person 1	X	X	X				X
Person 2	X	X		X			
Person 3	X	X					
Person 4	X						
Total	10	4	4	3	2	1	1
Comments							

formulas. Again, I think that by that time the administration was feeling that the formulas were outdated. So at that point, we really went to incremental funding and that's when it really began...folks were looking at incentives. At one point the governor proposed performance based budgeting. There were a number of things they were looking at...different ways to incentivize, if that's such a word, the colleges and universities to do certain things and to behave in certain ways by using what little money was there to put them in different directions. It was really the notion that perhaps we could use additional funds as rewards rather than formulas. (Participant C3)

At no time did people think that anything was more important than funding education, but they clearly intend to differentiate K-12 from higher education. The notion was that politically speaking, when you've got a school district in every legislator's district. If you reduce state aid, that is automatic invitation to increase the taxes, nobody wanted to go down that path. There were reductions in K-12 later on but not at the offset. In higher education the notion always was if they must they could raise tuition. If they must they could consider things to be more efficient, more economical. I think in the area of Corrections there were reductions in public safety but would you shut down a prison and abdicate the early release of convicted felons to protect higher education? No, I don't think so. I answered it that way is that to say that public safety is more important than education? No. That is a question that is very interesting in this whole budget game, because again it gets to the values. I've always been fascinated by this. (Participant C2)

Our recommendation to the general assembly will be that the lid comes off tuition. It's not going to be 25% or 20% of the cost anymore. It will have to go up to the 35%, 36% whatever. So our recommendation was you're in an irrational situation. You don't have the general fund money to drive these formulas. So you're going to have to let the institutions charge whatever they think that the market will bear in tuition increases. (Participant B1)

Four of the respondents stated that college program elimination was presented as a possible solution to the problem. Overall, Group B made one comment and Group C made three comments indicating program elimination was a solution.

Examples of comments made by interviewees that suggested program elimination as a solution included:

At one point you had to consider severe cutbacks in programs vs. increasing tuition and possibly disproportionate amount than what we were used to. (Participant A1)

I thought that first of all, the colleges were probably in just as well a position to absorb their reductions as other state agencies were. Even though no one enjoyed it. (Participant C1)

Four of the interviewees stated that increasing taxes would have a viable solution to the problem. Overall, Group A made two comments, Group B made one comment, and Group C made one comment indicating raising taxes was a solution.

Examples of comments made by interviewees that suggested increasing taxes as a solution included:

The only way to continue funding higher education would have been to increase taxes or to cut other agencies more. (Participant B2)

Tax increase discussed very, very briefly and rejected. (Participant C4)

The only option to funding higher education was to increase taxes to do it. And that was an absolute anathema. (Participant B3)

Three participants stated that across the board budget cuts as a solution. Overall, Group B made two comments and Group C made one comment indicating across the board budget cuts was a solution.

Examples of comments made by interviewees that suggested across the board budget cuts as a solution included:

You've got this thing that was created by the formulas, you just keep reducing it by x percent over a period of two years as the revenues fall further and further from projections. (Participant B1)

We didn't have the luxury of going back and re-building the budget from the bottom up because a lot of decisions had been made as they always are in the course of building the governor's recommended budget. We only became certain of the revenue shortfall rather late in the fall so the idea was we can do several things, one we can apply the management savings concept across the board concept evenly to everybody or we can go back and re-build the budget from the ground up--we chose to do the board. (Participant A3)

There were across the board cuts and different scenarios of cuts--two, four, six percent. (Participant A2)

Two respondents stated that revamping the funding formulas in order to allow for diminishing resources would have been a viable solution. Overall, Group A made one comment and Group B made one comment indicating revamping funding formulas was a solution.

Examples of comments made by interviewees that suggested revamping the funding formulas as a solution included:

One of the things they did, during the time that the president's paper was produced and creative ways of looking at what we can and can't do during this time. The message was that the recession was not just a one-year thing or two-year thing. It was a multi-year; we were in for the long run, for the foreseeable future. We have to make some hard choices and do the best we can. It's not something that we'll do for a year and then go back to 90% of the guidelines, or 94%. They made that case, with the presidents. Everybody bought into the best they could. (Participant C2)

There were discussions of modifying the formulas to allow for the new paradigm. (Participant A3)

One participant stated increased student financial aid as a solution. Group C made one comment indicating increase financial aid was a solution.

The comment made by an interviewee that suggested increase student financial aid as a solution was a solution was:

With each succeeding level of cuts, there was more financial aid put on the table to mitigate the impact. (Participant B2)

The last solution named was to employ incremental funding. Incremental funding would establish a baseline funding for each institution, while allow for additional institution-specific initiatives. Group B made one comment indicating incremental funding was a solution.

The comment made by an interviewee that suggested incremental funding as a solution was:

Folks were much less wedded to the notion of sticking to the formulas. Again, I think that by that time the administration was feeling that the formulas were outdated. So at

that point, we really went to incremental funding and that's when it really began...folks were looking at incentives. (Participant A3)

Analysis of the solutions stream

The interview participants were grouped into three groups: State Council of Higher Education in Virginia staff (Group A); the Department of Planning and Budget (DPB) and the General Assembly appointed officials and staff (Group B); and the Collective Data Group (Group C). The summary of the responses is presented in Table 5. Responses to the solutions stream identified by all three groups were (a) increase tuition and fees and (b) increase taxes.

Only Group A and Group B identified “revamp formulas” as one of the solutions. While there was no agreement by the three groups on the stated solution, but it represents an important point about what these two groups viewed as a solution to higher education formula funding.

Only Group B and Group C identified “increase taxes” and “across the board budget cuts” as solutions. While there was no agreement by the three groups on the stated solution, it represents an important point what these two groups viewed as solution to higher education formula funding.

Only a single group provided the remaining two cited solutions. Group B identified “incremental funding” as one of the solutions. Group C identified “increase student financial aid” as the last solution.

A review of the data in Table 5 by group reveals that of the seven solutions identified by the groups, participants of the Group A presented three. The three groups were in agreement with two of the solutions.

Group B named six of the seven solutions. All three groups were in agreement on two of the solutions. This group was in agreement with Group A on another two solutions, and in agreement with Group C on two additional solutions.

Group C named five of the seven solutions. All three groups were in agreement on two solutions and this group was in agreement with Group B on two additional solutions.

The Choice Opportunity Stream

A choice opportunity occurs when an organization has a situation that presents itself requiring a decision. These are times when an organization must come up with a decision to make for various reasons. These decisions are unrelated from any actual problems or solutions that are pressing at the time, although these problems and solutions may be included in it (Cohen & March, 1986, 1990).

The specific situation or situations that forced the choice opportunity on the Commonwealth of Virginia decision makers may never be factually known. The majority of the participants of this study failed to identify why the decision was made when it was made. Table 6 provides the details on the number of comments, and the number of participants who offered those comments related to each stream of Cohen and March decision-making model. The interview participants were grouped into three groups: State Council of Higher Education in Virginia staff (Group A), the Department of Planning and Budget (DPB) and the General Assembly appointees and staff (Group B), and the Collective Data Group (Group C). Overall, Group A made seven comments, Group B made five comments, and Group C made four comments for a total of 16 comments assigned to the choice opportunity stream.

Seven respondents stated that the decision was made due to demand for immediate action. Overall, Group A made two comments, Group B made two comments, and Group C made three comments indicating demand for immediate action was a choice opportunity.

Examples of comments from interviewees that suggested demand for immediate action was situation leading to the decision included:

Waiting was not an option. You had to make a decision. You had to deal with what was in front of you. (Participant B2)

So we didn't have a great deal to consider alternatives. We didn't have the luxury of going back and re-building the budget from the bottom up because a lot of decisions had been made as they always are in the course of building the governor's recommended budget. (Participant C2)

So our recommendation was you're in an irrational situation. You don't have the luxury of time to consider alternatives. (Participant A1)

I didn't feel good about it myself, even though it was our creation. We were just doing the best we could with the situation at hand. (Participant C3)

Six of the participants indicated that the decision was made due to financial exigency. The Commonwealth of Virginia was experiencing a recession and funding decisions had to be addressed. Overall, Group A made two comments, Group B made three comments, and Group C made one comment indicating financial exigency was a choice opportunity.

Examples of comments made by interviewees that suggested financial exigency the situation leading to the decision included:

Wilder was greeted upon his inauguration with a fairly significant discrepancy between revenues and expenditures. There was a mad rush to address that issue which necessitated 20% cuts across the board and that type of thing. So that's when the decision was made and why it was made. (Participant C2)

It was just the budget exigency. It was an emergency at the time and the Constitution required the governor to balance the budget and he wasn't going to raise taxes. (Participant B1)

We basically said that there is no money to run this system and do what it should be doing—growing, developing, and moving ahead, and paying faculty. (Participant A3)

Two respondents cited that the decision was made due to the Virginia's constitutional requirement to balance the budget. Group A made two comments indicating constitutional requirement to balance the budget was a choice opportunity.

An example of a comment from an interviewee that suggested it was a constitutional requirement to balance the budget was the situation leading to the decision included:

Our job was to make these two balance. So we would have a balanced budget. (Participant B2)

The last choice opportunity cited was the element of political pressures upon the decision makers. Group A made one comment indicating political pressures was a choice opportunity.

The comment made by an interviewee that suggested political pressure as the situation leading to the decision was:

There was a lot of pressure on the governor (Wilder), a lot of legislators were asking him to raise taxes and to offset some of the cuts that way. He refused to do that. Instead he chose to resolve the budget problem through reductions. (Participant C2)

Table 6

The Choice Opportunity Stream: A Tally of Responses of Interviewees Who Cited Particular Choice Opportunities in the Commonwealth of Virginia at the Time of Decision

Interviewee	Demand for immediate action	Financial exigency	Constitutional requirement to balance budget	Political pressure
<u>Group A</u>				
Person 1	X		X	
Person 2	X	X	X	X
Person 3		X		
<u>Group B</u>				
Person 1	X	X		
Person 2	X	X		
Person 3		X		
<u>Group C</u>				
Person 1		X		
Person 2	X			
Person 3	X			
Person 4	X			
Total	7	6	2	1
Comments				

Analysis of the choice opportunity stream

The interview participants were grouped into three groups: State Council of Higher Education in Virginia staff (Group A); the Department of Planning and Budget (DPB) and the General Assembly appointed officials and staff (Group B); and the Collective Data Group (Group C). The summary of the responses is presented in Table 6. Responses to the choice opportunity stream identified by all three groups were “financial exigency” and “demand for immediate action.”

Only a single group provided the remaining solutions. Group A identified “political pressures” and “constitutional requirement to balance budget” as choice opportunities.

A review of the data in Table 6 by group reveals that of the four choice opportunities identified by the groups, participants of Group A presented four. Agreement by the three groups was achieved with two of the choice opportunities. In addition, this group named two additional choice opportunities.

Group B named two of the four choice opportunities. All three groups were in agreement on two of the choice opportunities.

Group C named two of the four choice opportunities. All three groups were in agreement on two solutions.

CHAPTER FIVE

CONCLUSIONS

This chapter is divided into the following sections: (a) summary of the study, (b) discussion of research findings, (c) implications, and (d) limitations.

Summary of the Study

The purpose of the study was to find out how and why the decision was made to discontinue formula funding of institutions of higher education in the Commonwealth of Virginia. This purpose was accomplished using a naturalistic qualitative research approach with information gathered through personal interviews.

The decision-making process at the state level is often complex, uncertain, and difficult (Cohen & March, 1986). In such an organization, an opportunity to make a decision is described as a garbage can into which many types of problems and solutions are dropped independently of each other by participants as these problems and solutions are generated. The problems, participants and solutions are not necessarily related to each other. They move from one decision opportunity to another in such a manner that the solutions, the time needed and the problems seem to rely on a chance alignment of components to complete the decision. These components are the combination of options available at a given time, the combination of problems, the combination of solutions needing problems, and the external demands on the decision makers (Cohen, March & Olsen, 1972).

The emphasis of the study was to examine the rationale for discontinuing formula funding for resource allocation to institutions of higher education in Virginia. The study explored why the Commonwealth of Virginia made this important decision. Four general research questions guided the research:

1. What problems existed at the state-level that brought about the discontinuance of formula funding of institutions of higher education in the Commonwealth of Virginia?
2. Who were the primary decision makers or participants in the decision making process that brought about the discontinuance of formula funding of institutions of higher education in the Commonwealth of Virginia?
3. What alternatives or solutions were considered instead of discontinuing formula funding of institutions of higher education in the Commonwealth of Virginia?
4. Why was the decision to discontinue formula funding of institutions of higher education in the Commonwealth of Virginia made when it was made?

The research method selected for this study was the investigative social field research (Douglas, 1976). This method allows the development of friendly and trusting relationships to get at the inner, emotional, and symbolically meaningful experience that corresponded to the needs of this study.

Data were collected through open-ended interviews. A purposeful sampling procedure was used to select ten participants representing a wide range of backgrounds and affiliations with the study. Interviews were conducted with the decision-makers as well as those knowledgeable about the making of the decision to discontinue formula funding.

Interview sessions were audio taped and then transcribed. To give a sense of order to the data, four categories or streams were established for discussion purposes. The four streams

(problems, participants, solutions, and choice opportunities) were based on Cohen and March decision-making model.

Subsequent to the interviews, the responses were summarized on a data reduction sheet that grouped the responses according to Cohen and March decision-making model's four streams (problems, solutions, participants, and choice opportunities) and by the three interviewee groups. The use of the data reduction sheet facilitated data reduction and data display and the creation of data tables. The interviewee's rank number displayed responses for each of the four streams. This display was developed as a table that graphically depicted the frequencies and type of responses for each stream.

The matrices were organized according to Cohen and March decision-making model's four streams. Each matrix included direct quotations on the components identified. The matrices facilitated the formulation of conclusions.

By employing this method of data analysis, Cohen and March decision-making model's four streams were described. The four streams were used to explain the decision-making process in the discontinuance of formula funding for institutions of higher education in the Commonwealth of Virginia.

Deriving information from multiple sources of data has been referred to as triangulation of methodology (Shipman, 1981). Triangulation, a term taken from surveying, implies that if three points of a triangle are known, there is a measure of agreement. Conversely, if only one or two points are known, then the size and shape of the triangle is in question (Miles & Huberman, 1994, p. 287). Using data from different sources to corroborate or illuminate research questions can enhance the study's usefulness and generalizability (Rossman & Wilson, 1985). The use of the term in qualitative research refers to the use of multiple sources to document findings.

The purposeful sampling technique allowed for triangulation as participants were selected from multiple associations with the study. The main goal was to "pick triangulation sources that have different biases, different strengths, so they can complement each other" (Miles & Huberman, 1994, p. 267).

In this study, triangulation of the data was achieved by asking interview questions to participants who were in favor of discontinuing formula funding as well as those who were against it. Participants were found at various levels of the decision-making process, including formal and informal channels. Some of the interviewees were from within the decision-making process while others were merely observers of the process. Some of the persons interviewed were no longer appointed officials, or were no longer employed by or appointed to positions within the Commonwealth of Virginia. The interview respondents were grouped into three groups: State Council of Higher Education in Virginia appointees and staff (Group A), Department of Planning and Budget and the General Assembly appointed officials and staff (Group B), and other individuals referred to as the Collective Data Group (Group C).

This was achieved by comparing the responses of the groups and to challenge the data that cannot be verified. This evidence was then treated in a converging manner, by applying the concept of triangulation, to establish the facts of the case. As distinct from a linear approach to data analysis, in which each data source is analyzed separately and leads to findings and conclusions independent of the other sources, Yin (1994) views each source as potentially contributing to identification of a central fact which is supported by the convergence of evidence. A robust fact may be considered to have been established if evidence from three (triangulation) or more different sources all coincides. To get such convergence, it was necessary to ask the same questions of the three or more sources. Use of a diverse array of evidence to converge on

the facts of a case leads to satisfaction of one element of the basic definition of case studies, reliance on multiple sources of evidence (Yin, 1994). Data triangulation refers to the collection of varied data on the same phenomena, e.g. from different participants.

Discussion of Research Findings

What problems existed at the state-level that brought about the discontinuance of formula funding of institutions of higher education in the Commonwealth of Virginia?

In Cohen and March (1986) decision-making model, problems were independent from the participants and solutions. Of the many problems that existed prior to the decision to discontinue the use of formula funding for institutions of higher education, none of the ten study participants directly linked the problems to the solution selected.

This study revealed 12 problems that the Commonwealth of Virginia was facing during the time of the decision. The problems identified by all three groups or triangulated by the three groups were (a) inadequate state resources to fund the formulas, (b) increase in funding for prisons and entitlement programs, (c) formulas were voluntary, not mandated, (d) formulas did not reflect reality, and (e) rigid input model. The problems identified by two of the three groups were (a) formulas were not connected to revenues, (b) lot of distrust of higher education, (c) formulas became an embarrassment, and (d) formulas always meant increases.

All three groups and each interviewee identified the problem of inadequate state resources to fund the formulas. In the early 1990s, the Commonwealth of Virginia, like the rest of the nation, had experienced substantial reduction in revenue collections caused by soft economic conditions. Indeed, the literature points out that a valid weakness of formula funding is the inability of formulas to react well in economic downturns (Earnson (1965), McKeown (1996). In addition, Messinger (1976) identified a "bleak economic situation" as one certain condition that must be present for the impetus for change or dissolution of the formula funding.

The second problem identified by the three groups was increase in funding for prisons and entitlement programs. During the early 1990s demand for prisons and cost shifts from the federal government levied a heavy burden on the Commonwealth of Virginia. The federal government shifted the financial burden of the costs of Medicare and Medicaid to the states. The costs of prisons and entitlement programs coupled with the recession placed the Commonwealth of Virginia in a realm described by Cohen and March (1986) as "irrational organizational behavior" where there is limited time for any one decision.

The third problem identified by the three groups was that the formulas were voluntary, not mandated. In the Commonwealth of Virginia, the *Code of Virginia* never mandated the use of formula funding for institutions of higher education. Without this mandate, all of operational funding for institutions of higher education was deemed as discretionary. Noe (1986) recognized that the formula approach appears to be the best available method to achieve a satisfactory relationship between the state government and state-supported colleges in the allocation of tax payer's dollars, however, McKeown (1996) noted that the formulas cannot serve as substitutes for public policy decisions. The budget is particularly crucial, since the implementation of all decisions by institutions of higher education depends upon the availability and utilization of funds Healy (1998).

The fourth problem identified by the three groups was formulas were a rigid input model. Similar to the problem stated above, this problem supports Gross (1973) and McKeown (1996) who indicated that funding formula models fail to meet the dynamics of present higher education requirements.

The final problem identified by the three groups was formulas did not reflect reality. The funding formulas utilized by the Commonwealth of Virginia were comprised of staffing guidelines, which were driven primarily by enrollments; a tuition policy based on Virginia resident students paying 25% of the instructional costs, and out-of-state students paying 75%; peer group benchmarks, which determined faculty salary goals; and special studies to address selected needs, such as for instructional equipment. The funding formulas was a merely a model applied to all institutions to determine resources required. Gross (1973) recognized that funding formulas are a set of statements that specify a procedure for manipulating pertinent variable data through the use of pre-established fixed data. This finding supports Brinkman (1984) that in all models at any given time they capture only a portion of reality.

The next four problems were identified by two of the three groups. Although the problems were not cited by all three groups, they represent problems faced by the Commonwealth of Virginia during the time of the decision.

The first problem identified by two of the three groups was a lot of distrust of higher education. Calls for accountability and control have been present in the public's voice over the past several decades. Meisinger (1976) recognized early that as an impetus for change or dissolution of formulas was a deterioration of trust and confidence. Concerns for accountability resulted in nine states changing their higher education governance structures during the 1990s (AASCU, 1999). Indeed, McGrath (Budig, 1981) states, "One of the most basic and difficult lessons to learn is that the public, through its elected representatives, has the right to tell us how to spend tax dollars" (p.51). In Virginia, "restructuring" in higher education soon followed the problematic early 1990s. This trend appeared to follow the realization that state funding was in fact not predictable or dependable.

The second problem cited by two of the three groups was the formulas became an embarrassment. The Commonwealth of Virginia's funding formulas for higher education produced a quantification of resource requirements or resource demand. With the recession, biennial general fund support (or revenues) for higher education declined over \$200 million between 1990 and 1993. This problem suggest that Virginia's funding methodology may have failed to be adequate for competitively displaying institutional needs to the legislative and executive branches of government (McClintock, 1980).

The third problem cited by two of the three groups was formulas were not connected to revenues. Similar to the problem cited above, the product generated by the Commonwealth of Virginia's funding formulas was a statement of resource requirements or need. It appears that there was a significant gap between the financial resources available for distribution and the resources requirements requested. This finding supports the basis of Cohen and Marches' (1986) premise that organizations operate in an environment of uncertainty.

There may have been many other problems facing decision makers for the Commonwealth of Virginia as they dealt with the recession. The ten participants who agreed to be interviewed for this study may not have been entirely representative of their respective groups. The problems named were certainly some of the problems that the Commonwealth of Virginia faced. In a review of the problems that achieved either agreement by the three groups or an agreement by two of the three groups, there were a lot of problems that existed.

All respondents indicated that there was little formal discussion prior to the discontinuance of formula funding decision. In addition, there is no evidence that there were specific goals that would have linked the decision with the problems that were in the system. This fact is consistent with Cohen and March decision-making model which states organizational

decisions are made with solutions that have not been properly articulated. These are the solutions in search of problems to solve. Most likely, this was the case with the Commonwealth of Virginia.

Who were the primary decision makers or participants in the decision making process that brought about the discontinuance of formula funding of institutions of higher education in the Commonwealth of Virginia?

This study revealed four participants within the Commonwealth of Virginia that were responsible for the decision to discontinue formula funding. The participants triangulated by the three groups were (a) Department of Planning and Budget and the Governor's Office and (b) never a formal process of abandonment. The participants identified by a majority of the groups were (a) consensus decision and (b) State Council of Higher Education in Virginia.

All three groups named the Department of Planning and Budget and the Governor's Office. Both of these entities were the primary decision makers of higher educational funding issues. The Commonwealth of Virginia's Department of Planning and Budget advises the Governor on how to utilize public resources. The use of an agency by the governor to render analysis and support for decision-making is consistent with the premise of rational decision-making model. However, Perrow (1986) indicates that complete knowledge of the consequences of their acts does not exist. Within an organization experiencing an extremely high degree of uncertainty, such as a recession, organizations are faced with ambiguities that prevail in the decision making process (Hoy & Tarter, 1995).

All three groups reported there was "never a formal process of abandonment." While this is not a specific individual or group, this finding is nevertheless important. From the evidence collected, apparently there was never a public hearing, a board vote, or formal vote. This finding appears to be consistent with Noe's (1986) premise that formula funding removes the political overtones from the funding process.

The third participant named by two of the three groups was the State Council of Higher Education in Virginia (SCHEV). As a state agency of the Commonwealth of Virginia, SCHEV is the coordinating body for higher education. The Code of Virginia, Section 23-9.9, assigns SCHEV with the responsibility to develop "policies, formulae, and guidelines for the fair and equitable distribution and use of public funds among [Virginia's] public institutions of higher education." While it is apparent that the Code assigns the development responsibility, it does not specifically assign the discontinuance responsibility. While SCHEV was named as a participant in the decision to discontinue formula funding, the evidence suggested that its role might have been ambiguous. Consistent with the findings of Hawkins (1993), state-coordinating entities have multiple constituencies, all of whom may have varying perceptions of the entity's role. The resulting situation is characterized by Cohen and March (1986) as a disorderly or ambiguous process.

The final participant cited by two of the three groups was it was a consensus decision. While this is not a specific individual or group, this finding is nevertheless important. Cohen and March (1986) recognize that one obvious flaw of the rational decision making model is how rational or not humans may behave. If in fact the decision makers in the Commonwealth of Virginia arrived at a consensus to discontinue formula funding, the degree of analysis or searching for alternatives cannot be discerned from the evidence; nor can the process or specific individuals involved. As stated earlier, from the evidence collected, apparently there was never a public hearing, a board vote, or formal vote to discontinue formula funding.

From the evidence collected, it appears that the major participants were the governor's office and the Department of Planning and Budget. Both of these entities were the primary decision makers of higher educational funding issues. The respondents clearly indicated that there was never a formal discussion or a formal decision making process. The decision was made in a manner without the influence or input from the public. There was never a public hearing, a board vote, or formal vote. In addition, it appears that the State Board of Higher Education in Virginia never took a formal vote to discontinue formula funding of institutions of higher education.

What alternatives or solutions were considered instead of discontinuing formula funding of institutions of higher education in the Commonwealth of Virginia?

This study revealed seven solutions or alternatives that the Commonwealth of Virginia was facing during the time of the decision. The solutions identified by all three groups were (a) increase tuition and fees and (b) increase taxes. The solutions identified by two of the three groups were (a) across the board budget cuts, (b) revamp formulas, and (c) program elimination.

All three groups named as a solution the increase of tuition and fees. The university and college presidents sought to make up the shortfall in state revenues with increases in tuition and fee collections. As stated earlier, one of the elements of the Commonwealth's formula funding structure was a tuition policy based on Virginia resident students paying 25% of the instructional costs, and out-of-state students paying 75% of instructional costs. From the evidence collected, the ceiling of tuition and fees was lifted and the student's cost was allowed to rise to what the market could bear. The two basic response categories to revenue shortfalls (Kaufman & Berve, 1982) are (a) income generation (raising tuition, fees) and expenditure reduction. The Commonwealth followed the income generation response.

All three groups named as a solution was to an increase in taxes. While increasing taxes may have been a viable method of increasing state revenues, this solution was not chosen. It is clear from the interviews of the participants, Governor Wilder was absolutely against this measure. Without the governor's support this measure of obtaining additional revenues was not considered to be a viable option.

The first solution cited by two of the three groups was program elimination. Institutions were allowed to eliminate programs that were not considered productive. This solution supports Morgan (1982) and Morgan (1982) who indicated that severe recession or fiscal insolvency results in substantial review or elimination of educational programs.

The second solution cited by two of the three groups was across the board budget cuts. Across the board budget cuts would result in a uniform distribution of budget reductions to all educational institutions. In a mild economic downturn, Glenn (1973) suggested the first round of cuts are absorbed by slack and across the board budget cuts, but further cuts result in making cuts on program priorities. Furthermore, Morgan (1982) indicates that across the board budget cuts work best in moderate, temporary financial contractions.

Finally, the last solution cited by two of the three groups was to revamp formulas. From the evidence gathered, it is unclear whether or not the Commonwealth of Virginia's funding formulas allowed for a condition of financial exigency. Meisinger (1976) observed that formulas might not be an effective tool in bleak economic situations. Other critics (McKeown, 1996; Leslie, 1986,) have made similar observations regarding the lack of flexibility to economic changes with the use of funding formulas.

Consistent with Cohen and March (1986) decision-making model, the solutions named were attempts to seek out prescriptive alternatives. From the evidence collected, it appears that

the solutions focused on reactions to lack of resources instead of the problems of formula funding. In Cohen and March decision-making model, solutions appear which are in search of problems to solve.

Why was the decision to discontinue formula funding of institutions of higher education in the Commonwealth of Virginia made when it was made?

This study revealed four choice opportunities that the Commonwealth of Virginia was facing during the time of the decision. The choice opportunities identified by all three groups were (a) financial exigency and (b) demand for immediate action. The choice opportunity identified by two of the three groups was (a) constitutional requirement to balance budget.

All three groups named as a choice opportunity demand for immediate action. From the evidence collected, Virginia's elected officials had to struggle with making decisions in a time of economic uncertainty. As McGrath (Budig, 1981) observed that one of the most basic and difficult lessons for higher education to learn is that our elected officials have the right to tell us how to spend tax dollars. Whether it is explicit or implied, the amount of tax dollars allocated to higher education and the timing of the allocations is within their right as elected officials.

All three groups named as a choice opportunity financial exigency. From the evidence collected, it appears that state revenues were drastically reduced and the state was faced with making funding reductions. As established in the preceding paragraphs, formula funding does not react well to resource constraints. The Commonwealth of Virginia's formula funding methodology was an establishment of resource requirements and when the resources are not available, decisions must be made to handle this situation. In the literature, McKeown (1996) and Meisinger (1976) have criticized funding formulas' lack of function in bleak economic situations.

The choice opportunity cited by two of the three groups was the constitutional requirement to balance budget. Elected officials in the Commonwealth of Virginia are required by law to have a balanced budget. This requirement functions as a ceiling to all funding actions. From the evidence collected, this fact appears to be a guiding principle to the actions of the decision makers.

In Cohen and March (1986) decision-making models, a choice opportunity is a situation, which requires a choice or a decision. All situations are probably correct to an extent and in combination were factors that influenced the decision. Quite possibly there are many other factors involved that are known only to the decision makers.

Limitations of the Study

The purpose of the present research was exploratory rather than confirmatory. The focus of this study was on the decision to discontinue formula funding for institutions of higher education in Virginia. Findings may not be generalized to how decisions are made about funding methodologies in other states or how states make other critical decisions.

There were limitations in the methodology. Participants were interviewed at one point in time and were asked to recall events. In addition, one rater made the coding of the responses into each stream of Cohen and March decision-making model.

This study was conducted by interviewing people known to be state level decision makers responsible for the funding of higher education institutions. There may have been other decision makers who were not involved with this study.

Finally, the study interviewed 10 participants. The inclusion of a larger sample might have produced different results.

Despite these limitations, the results of the study revealed some interesting information about state level decision making. This study contributed to the body of knowledge on decision making by providing a broad view of the dynamics of decision making within a state facing economic challenges. This research went beyond a look at the decision itself, and tried to provide insight into the beliefs, feelings and experiences of the participants. The driving forces that led to the decision of the Commonwealth of Virginia were uncovered.

It is beyond the scope of this study to generalize and conclude that all state-level decisions do or should operate in a similar fashion as the decision to discontinue formula funding for institutions of higher education in the Commonwealth of Virginia. Questions remain to be answered and challenge to be given a response.

Implications

Theoretical

The classical decision-making model tends to be classified as a rational model. The rational model, predicated on predictable and rational human behavior, dominates the decision-making theories. In practice, however, an obvious weakness of this model is how rational or not humans may behave, or the process is often difficult to observe and does not follow the stages clearly identified by the theoretical models (McCall & Kaplan, 1978). With all the uncontrollable variables operating within the decision-making paradigm, the resulting situation can be characterized as what Cohen and March (1986) describe as disorderly or ambiguous.

One of the notable implications of this study is the advantage of Cohen and March decision-making model to provide a representation of the non-rational manner in which decisions are often made within organizations. Not all decisions are made in a logical fashion. Occasionally, decisions are made on an ad hoc basis when the problems, participants, and solutions involved happen to align.

An important disadvantage to Cohen and March decision-making model is that it is not the most efficient manner to make a decision. In the rational model, a decision maker's objective is to make a decision that maximizes efficiency and effectiveness. Impartiality is an assumption in the rational model. Decision-making is considered a procedure for finding solutions to problems. Cohen and March decision-making model awaits the alignment of problems, participants, and solutions which may occur after the opportunity to make a decision has passed or occurs before the problem has been discovered.

In this research project, Cohen and March decision-making model was used in guiding a study of the decision made by or accepted by the Commonwealth of Virginia to discontinue the use of formula funding for institutions of higher education. While the model provided a structure for analyzing the decision, the model did not provide the answer to why the decision was made by the Commonwealth of Virginia.

In discussing decision-making models, the issue may not necessarily be which model is the best one because all have advantages or disadvantages. The issue may be which one best assesses group decision making to provide a basis of comparison. A model is a starting point for evaluating a process (McCall & Kaplan, 1978). In this study, Cohen and March decision-making model's strength was its structure; however, the comments made by the participants were not easily coded into each stream of the model.

Implications for Policy Makers

Given the results of the present study, there were many problems with the former methodology utilized to fund institutions of higher education in Virginia. In considering returning to an objective means to judge requests and to allocate resources to institutions of higher education in Virginia, decision makers should look to overcome these problems.

The state should consider embracing the funding methodology as a matter of law. The former formulas were accepted as guidelines, but never incorporated in the appropriations act as funding for K-12's methodology.

The former structure was viewed a "rigid input model". The lack of flexibility of the formulas to respond to changes in the economic conditions should be addressed in the construction of the new methodology.

Other strategies to improve the funding methodology include: linking the methodology to college and university strategic plans with state strategic plans; ensuring regular evaluations of the methodology for changes in inputs and outputs; and developing a methodology that reflects the reality of the economics of higher education.

Finally, institutions of higher education should continue to develop a trusting relationship with its constituents responsible for funding institutions. Lack of trust in the institutions presenting resource requirements creates tensions that may have prolonged negative effects on funding streams.

Recommendations for Further Study

Findings of the present research identified several factors affecting decision making models and funding of institutions of higher education. Results of this study indicated that Cohen and March decision-making model may not result in identifying why the decision to discontinue formula funding was made by the Commonwealth of Virginia.

This study suggests that an area of further investigation is decision making in an environment of economic uncertainty. Decision makers faced with a sudden onset of uncontrollable forces are required to act in a timely manner. Of particular interest are the issues of problem complexity and uncertainty as they effect the decision.

The groups within this study did not exhibit any signs of disagreement on the decision. Because these groups studied in this case did not exhibit any signs of disagreement, a study of how groups resolve differences while making decisions on issues might be useful in understanding state-level decision making.

Summary

The formula method of allocation was used in the Commonwealth of Virginia to fund institutions of higher education from 1968 until the recession of 1990. Prior to the early 1990s recession, operational funding for institutions of higher education in the Commonwealth was derived from a framework for staffing guidelines, faculty peer-group benchmarks, and a student tuition policy. Revenue shortfalls caused by the recession were insufficient to fund the resources demanded by the guidelines or funding formulas. This led to the discontinuance of the funding formulas that had guided Virginia's higher education funding for more than two decades (Report of the Joint Subcommittee on Higher Education Funding Policies, 1999).

Due to the lack of resources to sustain the higher education funding guidelines, they were discontinued in 1990 (Senate Finance Committee, 1997). Between 1990 and 1993, general funding support for Virginia's institutions of higher education declined by over \$200 million. In

an attempt to make-up this shortfall, institutions were granted permission to raise tuition. From 1989 to 1995 tuition at the state colleges and universities increased by 49 percent (Senate Finance Committee, 1997).

The decision-making process at the state level is often complex, uncertain, and difficult. This study used the Commonwealth of Virginia's discontinuance of formula funding as an example of how major decisions are made in a bureaucratic and political model.

According to Cohen and March (1986), many organizations function in an environment of organized chaos. They present a non-rational model of decision-making in which "decision opportunities are fundamentally ambiguous stimuli" (p. 81). Choice to an entity is defined as "an occasion on which an organization is expected to produce a decision" (p. 81). While it is apparent that the Commonwealth of Virginia did not consciously employ Cohen and March decision-making model with the decision to discontinue formula funding, the model can be a useful tool in analyzing the decision.

During the timeframe that the decision was made to discontinue formula funding of higher education institutions in Virginia, there were numerous uncontrollable economic and political variables in action. The federal government was shifting unfunded financial mandates on the states (Medicare, Medicaid, etc). Demands were placed on the state for adequate prisons. Additionally, the nation as well as the state were experiencing an economic recession. With the combined effects of the uncontrollable variables on revenues, the state had to grapple with how to manage the expenditure side of the equation in a timely manner.

There were many complaints regarding the former formula funding model. The model was a demand driven, rigid input based model that was not linked directly to state revenues. The model was not mandated by *the Code of Virginia*, as was K-12 formula.

As required with time-sensitive matters, decisions have to be made to address the issues at hand. The funding formulas were simply discontinued in the face of adversity. Consensus was basically that the demand driven formulas were the wrong methodology given the recession and demands for attention to other areas.

REFERENCES

- Ahumada, M. M. (1990). An analysis of state formula budgeting in higher education. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research*. New York: Agathon Press.
- American Association of State College and Universities. (1999). *State Fiscal Conditions*. Washington, DC: AASCU.
- American College and Research Libraries Committee on Standards. (1959). Standards for college libraries. *College and Research Libraries*, XX(July), 271-275.
- American Council on Education and the National Federation of College and University Business Officers. (1960). *The sixty college study--a second look*. Washington, DC: American Council on Education.
- Ashworth, K. H. (1979). *American higher education in decline*. College Station and London: Texas A & M University Press.
- Bailey, S. K. (1969). Public money and the integrity of higher education. *The Educational Record*, L(Spring), 149-154.
- Balderston, F. E. (1972). *Varieties of financial crisis*. Berkeley: University of California.
- Bean, A. (1981). The working trustee and his responsibilities. *New Directions for Institutional Advancement*, 14(December), 5-11.
- Bell, W., Hill, R., & Wright, C. (1961). *Public leadership: A critical review with special reference to adult education*. San Francisco: Chandler Publishing Company.
- Berdahl, R. O. (1971). *Statewide coordination of higher education*. Washington, DC: American Council on Education.
- Blanton, J. C. (1971). *An analysis of instructional costs*. Nashville, TN: Tennessee Higher Education Commission.
- Blumenfeld, A. A. (1962). *The economics of higher education in New Mexico, 1960-80*. Unpublished Master's thesis, University of New Mexico.
- Bogdan, R. C., & Biklen, S. K. (1982). *Qualitative research for education: An introduction to theory and methods*. Boston: Allyn and Bacon.
- Boling, E. J. (1961). *Methods of objectifying the allocation of tax funds to Tennessee state colleges*. Unpublished Doctoral dissertation, George Peabody College for Teachers.
- Borg, W. R., & Gall, M. D. (1989). *Educational research*. New York: Longman.
- Boyle, G. J. (1970). *Planning, programming, budgeting in New Mexico*. Albuquerque: University of New Mexico Press.
- Breneman, D. W., & Finney, J. E. (1997). The changing landscape: Higher education finance in the 1990s. In P. M. Callan, & Finney, J. E. (Ed.), *Public and private financing of higher education* (pp. 30-59). Phoenix: The Oryx Press.
- Brewster, K. (1973). *Dynamics of institutional autonomy* (Professional File vol. 4, no. 5): NACUBO.
- Brinkman, P. T. (1984). Formula budgeting: The fourth decade. In L. Leslie (Ed.), *New Directions for Institutional Research* (Vol. 43, pp. 21-44). San Francisco: Jossey-Bass.
- Budig, G. (1981). *Higher education: Surviving the 1980's*. West Virginia University Press.
- Budwig, G. A. (1970). *Perceptions in public higher education*. Lincoln, NE: University of Nebraska Press.
- Budwig, G. A. (1972). *Budgeting for today's campus*. Chicago: McGraw-Hill Book Company, Inc.
- Burns, J. (1978). *Leadership*. New York: Harper & Row.

- Calkins, R. D. (1959). The role of government support, *Financing Higher Education* (pp. 183-219). New York: McGraw-Hill Book Company, Inc.
- Chambers, M. M. (1972). *Appropriations of state tax funds for operating expenses of higher education, 1971-72*. Washington: National Association of State Universities and Land-Grant Colleges.
- Clapp, V. W., & Jordan, R. T. (1965). Quantitative criteria for adequacy of academic library collections. *College and University Research Libraries*, XXVI(September), 371-375.
- Clapp, V. W., & Jordan, R. T. (1989). Quantitative criteria for adequacy of academic library collections: A reprint of a C&RL classic and quantitative criteria for adequacy of academic library collections. *College and Research Libraries*, 50(March), 153-163.
- Cohen, M. D., & March, J. G. (1986). *Leadership and ambiguity: The American college president*. (2nd ed. ed.). Boston: Harvard Business School Press.
- Collier, D. J. (1974). *Higher education finance manual*. Boulder, CO: National Center for Higher Education Management Systems.
- Collier, D. J., & Young, M. E. (1974). *Revision of the program classification structure*. Boulder, CO: National Center for Higher Education Management Systems.
- Committee on Government and Higher Education. (1959). *The efficiency of freedom*. Baltimore: Johns Hopkins Press.
- Cope, R. G. (1968). Budget formulas and model building, *Institutional research and academic outcomes* (pp. 163-170). Athens, GA: Association for Institutional Research.
- Council of Ontario Universities. (1972). *Review of the Ontario operating grants formula*. Toronto: Council of Ontario Universities.
- Dahl, R. A. (1961). *Who governs? Democracy and power in an American city*. New Haven: Yale University Press.
- Daniere, A. (1964). *Higher education in the American economy*. New York: Random House.
- Douglas, J. D. (1976). *Investigative social research*. Beverly Hills: SAGE Publications, Inc.
- Dressel, P., & Faricy, W. H. (1972). *Return to responsibility*. San Francisco: Jossey-Bass.
- Enarson, H. (1965). Higher education in New Mexico, *Emerging patterns in American higher education* (pp. 121-128). Washington, DC: American Council on Education.
- Erickson, F., Florio, S., & Buschman, J. (1980). *Field work in educational research*. Michigan State University: Institute for Research on Teaching.
- Folger, J. K. (1977). *Increasing the public accountability of higher education*. San Francisco: Jossey-Bass.
- Gallant, J. A., & Prothero, J.W. (1972). Weight-watching at the university: The consequences of growth. *Science*, CLXXV(January 28), 381-388.
- Glenny, L. A. (1955). *Autonomy of public colleges*. New York: McGraw-Hill Book Company.
- Glenny, L. A. (1965). State systems and plans for higher education, *Emerging patterns in American higher education*. Washington, DC: American Council on Education.
- Glenny, L. A. (1976). *State budgeting for higher education: Interagency conflict and consensus*. Berkeley: University of California, Center for Research and Development in Higher Education.
- Goetz, J. P., & LeCompte, M. D. (1984). *Ethnography and qualitative design in educational research*. New York: Academic Press.
- Goffman, E. (1963). *Behavior in public places*. New York: The Free Press.
- Green, J. L., Jr. (1971). *Budgeting in higher education*. Athens, GA: University of Georgia Press.

- Greene, C. (1970). Budget formulas help system tell where its going. *College and University Business*, XLIII(June), 58-64.
- Gross, F. M. (1973). *A comparative analysis of the existing budget formulas used for justifying budget requests for allocating funds for the operating expenses of state-supported colleges and universities*. Unpublished Doctoral dissertation, University of Tennessee.
- Gulko, W. W. (1972). *Program classification structure*. Boulder, CO: National Center for Higher Education Management Systems.
- Hale, J. A., & Rawson, T. M. (1976). Developing statewide higher education funding formulas for use in a limited growth environment. *Journal of Education Finance*, 2(Summer), 16-32.
- Halstead, D. K. (1974). *Statewide planning in higher education*. Washington, DC: United States Department of Health, Education and Welfare.
- Harris, S. (1959). Financing of higher education: Broad issues, *Financing higher education* (pp. 35-78). New York: McGraw-Hill Book Company.
- Harris, S. (1962). *Higher education: Resources and finance*. New York: McGraw-Hill Book Company.
- Hashway, R. M. (1998). *An evolutionary approach to formula funding, fiscal, and program management in higher education: An application of developmentalism to fiscal and program management at the institutional and system levels*. San Francisco: Austin & Winfield Publishers.
- Hawkins, B. D. (1993). Critics question process, motives behind naming of HBCU presidents. *Black Issues in Higher Education*.
- Healy, P. (1997). University of Hawaii struggles to adjust to huge cuts in state funds and steep tuition increases. *Chronicle of Higher Education*, 43(22), A30-A31.
- Hossler, D., & Kemerer, F. (1986). Enrollment management and its context, *New directions for higher education* (pp. 5-14). no. 53 San Francisco: Jossey-Bass.
- Hoy, W., & Tarter, C. (1995). *Administrators solving the problems of practice*. Boston: Allyn and Bacon.
- Hungate, T. L. (1964). *Management in higher education*. New York: Columbia University Press.
- Hunter, F. (1953). *Community power structure: A study of decision makers*. Chapel Hill: The University of North Carolina Press.
- Hunter, F. (1980). *Community power succession: Atlanta's policy-makers revisited*. Chapel Hill, NC: The University of North Carolina Press.
- Jellema, W. W. (1972). *Efficient college management*. San Francisco: Jossey-Bass.
- Joint Accounting Group. (1974). *Report of the joint accounting group*. Boulder, CO: Western Interstate Commission for Higher Education.
- Jones, D. (1984). Budgeting for academic quality: Structures and strategies, *New directions for higher education* (pp. 15-28). San Francisco: Jossey-Bass.
- Jones, D. P. (1984). *Higher Education Budgeting at the State Level: Concepts and Principles*. Boulder, CO: National Center for Higher Education Management Systems.
- Kaplan, M. (1976). *The Monday morning imagination: Report from the Boyer workshop on state university systems*. Aspen, CO: Aspen Institute for Humanistic Studies.
- Kaufman, M. L., & Berve, N. M. (1982). The effect on higher education of state actions in response to unanticipated revenue shortfalls. *Higher Education in the States*, 8(3), 181-206.
- King, J. T. (1974). *Evaluation and accountability* (Professional File vol. 5, no. 2): NACUBO.

- Lavender, H. W. (1965). *The New Mexico board of educational finance: A study in the control of higher education*. Unpublished Doctoral dissertation, University of New Mexico.
- Lee, E. C., & Bowen, F. M. (1965). *The multicampus university*. New York: McGraw-Hill Book Company.
- Legislative University Study Committee. (1973). *Report to the second session of the thirty-first legislature*. Santa Fe, NM: Legislative University Study Committee.
- Lerner, W. (1973). *Statistical abstract of the United States*. Washington, DC: United States Department of Commerce.
- Leslie, R., R., Pickens, W. H., Callan, P.M., & Pailthorp, K. G. (1986). Economics and educational planning, *New directions for institutional research* (pp. 39-56). no. 52 San Francisco: Jossey-Bass.
- Lindblom, C. (1957). The science of muddling through. *Public Administration Review*, 19, 79-88.
- Marcus, L. (1995). A new way for states to fund higher education. *Planning for Higher Education*, 23(Winter), 11-15.
- Marshall, C., & Rossman, G. B. (1989). *Designing qualitative research*. Newbury Park, NY: Sage Publications.
- McCall, M., & Kaplan, R. (1978). *Whatever it takes: Decision makers at work*. Englewood Cliff, NJ: Prentice-Hall, Inc.
- McClintock, D. L. (1980). *Formula budgeting: An approach to facilities funding*. Washington, DC: Association of Physical Plant Administrators of Universities and Colleges.
- McDougall, R. N. (1972). Revision of the Ontario operating grants formula, *Reformation and reallocation in higher education* (pp. 66-68). Claremont, CA: Association for Institutional Research.
- McKeown, M. P. (1982). The use of formulas for state funding of higher education. *Journal of Education Finance*, 7(Winter), 277-300.
- McKeown, M. P. (1996). *State funding formulas for public four-year institutions*. Denver: State Higher Education Executive Officers Association.
- McKeown, M. P. (2000). *Financing Higher Education in the New Century: The Second Annual Report from the States*. Denver, CO: State Higher Education Executive Officers.
- Meisinger, R. J., Jr. (1976). *State budgeting for higher education: The uses of formulas*. Berkeley: Berkeley Center for Research and Development in Higher Education.
- Merson, J. C., & Qualls, R. L. (1979). *Strategic planning for colleges and universities: A systems approach to planning and resource allocation*. San Antonio: Trinity University Press.
- MGT of America, Inc. (2000). *An Interim Report on Higher Education Funding Policies and Preliminary Recommendations*. Submitted to The Virginia General Assembly's Joint Subcommittee on Higher Education Funding Policies. Unpublished document.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. Thousand Oaks, CA: SAGE Publications.
- Miller, J. L., Jr. (1964). *State budgeting for higher education: The use of formulas and cost analysis*. Ann Arbor: University of Michigan Institute of Public Administration.
- Miller, J. L., Jr. (1965). *State budgeting for higher education*. Ann Arbor: The University of Michigan Institute for Public Administration.
- Miller, J. L., Jr. (1968). *An introduction to budgetary analysis*. Athens, GA: Southern Regional Education Board.

- Millet, J. D. (1952). *Financing higher education in the United States*. New York: Columbia University Press.
- Millet, J. D. (1963). Financing higher education: Ten years later. *The educational record*, XLIV(January), 44-52.
- Millet, J. D. (1972). *State budgeting for higher education*. Columbus: Ohio State University.
- Milner, R. G. (1986). Resource allocation models and the budgeting process, *New directions for institutional research* (pp. 75-91). no. 49 San Francisco: Jossey-Bass.
- Moos, M., & Rourke, F. (1959). *The campus and the state*. Baltimore: Johns Hopkins Press.
- Morgan, A. W. (1982). College and university planning in an era of contraction. *Higher Education*, 11, 553-566.
- Mortimer, K. P., & McConnell, T. R. (1979). *Sharing authority effectively*. San Francisco: Jossey-Bass.
- Moss, C. E., & Gaither, G. H. (1976). Formula budgeting: Requiem or renaissance? *Journal of Higher Education*, 47(5).
- National Association of State Budget Officers (1999). *Fiscal Survey of the States*. Washington, D C: NASBO.
- National Center for Higher Education Management Systems (1971). *Statewide planning for postsecondary education*. Boulder, CO: National Center for Higher Education Management Systems.
- National Commission on Standard Reports for Institutions of Higher Education (1935). *Financial reports for colleges and universities*. Chicago: The University of Chicago Press.
- National Commission on the Preparation of a Manual on College and University Business Administration (1956). *College and university business administration*. Washington, DC: American Council on Education.
- National Commission on the Preparation of a Manual on College and University Business Administration (1968). *College and university business administration--revised edition*. Washington, DC: American Council on Education.
- New Mexico Board of Educational Finance (1969). *Analysis of institutional operating budgets, 1968-69*. Santa Fe: Board of Educational Finance.
- New Mexico Board of Educational Finance (1971). *A study of higher education in New Mexico*. Santa Fe: Board of Educational Finance.
- New Mexico Board of Educational Finance (1973). *Unit cost of instruction*. Santa Fe: Board of Educational Finance.
- New Mexico Board of Educational Finance (1974). *Analysis of institutional legislative budgets, 1974-75*. Santa Fe: Board of Educational Finance.
- New Mexico Board of Educational Finance (1974). *Information on higher education in New Mexico*. Santa Fe: Board of Educational Finance.
- New Mexico Commission on Statewide Higher Education Problem. (1964). *Final report*. Albuquerque: University of New Mexico.
- Nigro, L. (1984). *Decision making in the public sector*. New York: Marcel Dekker, Inc.
- Noe, R. C. (1986). Formula funding in higher education: A review. *Journal of Education Finance*, 11(Winter), 363-376.
- Office of Educational Research and Improvement (1996). 1996 Trends - Finance. Washington, DC: ERIC Clearinghouse.
- Perrow, C. (1986). *Complex organizations: A critical essay*. New York: Random House.

- Robins, G. B. (1973). *Understanding the college budget*. Athens, GA: University of Georgia Press.
- Rossman, G. B., & Wilson, B. L. (1985). Numbers and words: Combining quantitative and qualitative methods in a single large-scale evaluation study. *Evaluation Review*, 9 (5), 627-643.
- Rourke, F. E., & Brooks, G. E. (1966). *The management revolution in higher education*. Baltimore: Johns Hopkins Press.
- Russell, J. D. (1954). *The finance of higher education*. Chicago: University of Chicago Press.
- Russell, J. D. (1965). Dollars and cents: Some hard facts, *Higher education: Some newer developments* (pp. 89-94). New York: McGraw-Hill Book Company.
- Rust, J. (1971). Institutional autonomy as seen from a state-level coordinating commission, *Institutional research and institutional policy formulation* (pp. 183-185). Claremont, CA: Association for Institutional Research.
- Rust, J. (1972). The allocation and reallocation of financial resources to universities, *Reformation and reallocation in higher education* (pp. 164-166). Claremont, CA: Association for Institutional Research.
- Sanchez-Penley, Y., Martinez, M. C., & Nodine, T. (1997). Protecting access and anticipating growth. In P. M. Callan, & Finney, J. E. (Ed.), *Public and private financing of higher education* (pp. 30-59). Phoenix: The Oryx Press.
- Sandin, R. T. (1974). Systems analysis and university budgeting, *Educational comment/1974* (pp. 39-60). Toledo, OH: University of Toledo.
- Schachter, H. L. (1986). State coordinating agencies and academic innovation: A policy sector perspective. *Higher Education*, 15, 333-342.
- Schatzman, L., & Strauss, A. L. (1973) *Field research: Strategies for a natural sociology*. Englewood Cliffs: Prentice-Hall.
- Schmidt, P. (1997). State appropriations for colleges increase at highest rate since 1990. Fact file: State appropriations for higher education, 1997-98. *Chronicle of Higher Education*, 44(12), A30-A33.
- Senate Finance Committee (1997). *Higher Education Funding Guidelines*. Unpublished document.
- Shipman, M. (1981). *The limitations of social research*. New York: Longman.
- Sigmon, R. (1974). Service-learning in North Carolina. *New Directions for Higher Education*, 2(2), 23-30.
- Simon, K. A., & Grant, W. V. (1967). *Digest of educational statistics, 1967*. Washington, DC: United States Department of Health, Education, and Welfare.
- Simon, K. A., & Grant, W. V. (1971). *Digest of educational statistics, 1971*. Washington, DC: United States Department of Health, Education, and Welfare.
- Smartt, S. (1984). Linking program reviews to the budget, *New directions for higher education*. No. 48 San Francisco: Jossey-Bass.
- Smith, L. M. (1978). An evolving logic of participant observations, educational ethnography, and other case studies. In L. S. Schulman (Ed.), *Review of research in education*. Illinois: Peacock.
- Southern Regional Education Board (1966). *Financing higher education*. Asheville, NC: Southern Regional Education Board.
- Southern Regional Education Board (1970). *New directions in state-wide higher education planning and coordination*. Atlanta, GA: Southern Regional Education Board.

- Spirer, J. E. (1980). *The case study method: Guidelines, practices, and applications for vocational education*. Columbus: The National Center for Research in Vocational Education. Ohio State University.
- St. John, E. P. (1991). A framework for reexamining state resource-management strategies in higher education. *Journal of Higher Education*, 62(May/June), 263-287.
- Stecklein, J. E. (1961). *How to measure faculty workload*. Washington, DC: American Council on Education.
- Stumph, W. J. (1970). *A comparative study of statewide operating budget formulas administered by statewide coordinating agencies for higher education in selected states*. Unpublished doctoral dissertation, Southern Illinois University.
- Summers-Coty, K. (1998). *The community college funding formula: A look at its components*. Lansing, MI: House Fiscal Agency.
- Swanson, J. E., Arden, W., & Still, H. E., Jr. (1966). *Financial analysis of current operations of colleges and universities*. Ann Arbor: University of Michigan Press.
- Task Force on Coordination Governance and Structure of Post-secondary Education (1973). *Coordination or chaos*. Denver: Education Commission of the States.
- Texas Higher Education Coordinating Board (1996). *Funding formulas and elements of institutional cost, fiscal year 1998-1999*. Austin, TX.
- Texas Higher Education Coordinating Board (1998). *Recommended funding formulas and elements of formula appropriations, fiscal years 2000-2001: Texas public universities, community colleges, and technical colleges*. Austin, TX: Texas Higher Education Coordinating Board, Division of Finance, Campus Planning and Research.
- Van Hauen, S. H., Jr. (1974). *A study to develop consistency in the implementation of a program classification structure among six universities in the state of New Mexico*. Unpublished Doctoral dissertation, University of New Mexico.
- Van Wijk, A. P., & Levine, J. B. (1969). *The pros and cons of existing formula financing systems and a suggested new approach*. Toronto: Systems Research Group.
- Wagner, A. (1996). Financing higher education: New approaches, new issues. *Higher Education Management*, 8(1), 7-17.
- Walton, J. P. (1967). *An analysis of the methods utilized by state boards governing multiple institutions of higher education in the distribution of current operating funds under their control*. Unpublished doctoral dissertation, University of Mississippi.
- Western Interstate Commission for Higher Education (1959). *Quality and opportunity in higher education*. Boulder, CO: Western Interstate Commission for Higher Education.
- Western Interstate Commission for Higher Education (1959). *Yardsticks and formulas in university budgeting*. Boulder, CO: Western Interstate Commission for Higher Education.
- Western Interstate Commission for Higher Education. (1966). *Campus and Capitol*. Boulder, CO: Western Interstate Commission for Higher Education.
- Western Interstate Commission for Higher Education. (1972). *Legislative decision making for higher education*. Boulder, CO: Western Interstate Commission for Higher Education.
- Wildavsky, A. (1964). *The politics of the budgetary process*. Boston: Little, Brown and Co.
- Williams, H. (1966). *Planning for effective resource allocation in universities*. Washington, DC: American Council on Education.
- Wilson, L. (1961). Analyzing and evaluating costs in higher education. *The educational record*, XLII(April), 99-105.

- Wilson, L. (1972). *Shaping American higher education*. Washington, DC: American Council on Education.
- Yin, R. K. (1994). *Case study research: Design and methods*. Thousand Oaks, CA: SAGE Publications.

APPENDIX A
INTERVIEW PROTOCOL

Name _____ Position _____

Interview Location _____ Date _____ Interviewee No. _____

Time of Interview _____ Confidentiality Requirements _____

Decision Making Authority _____

Stream Classifications: PR = Problem; SO = Solutions; PA = Participant; CO = Choice
Opportunity NC = Not Classified

1. When in the late eighties did the governor's administration realize that the Commonwealth was experiencing an economic recession?

Do you recall how alternatives were considered for cutting the budget?

In exploring alternative budget cutting strategies, when did discontinuing formula funding for higher education become a viable alternative? Was it late in the Baliles Administration? Was it early in the Wilder term? After the General Assembly session began? Or well into the legislative session? Or was it later?

As best you can recall, did the alternative to discontinue formula funding come from SCHEV, the Department of Planning and Budget, the legislative money committees, the Governor's Office, a combination of these, or some individual either in the governor's administration or in the legislature or some other source?

Classification: NC

Purpose: To explore circumstances, people, events in the making of the policy.

2. Where did the notion to discontinue formula funding originate?

Classification: PA

3. As best you can recall, was one individual advocating for discontinuing formula funding for higher education or did several individuals suggest it? Can you recall who this/these individuals were?

Classification: PA

4. Why was the decision to discontinue formula funding made? What was the primary purpose?

Classification: PR

5. What did decision-makers consider to be more important than the funding of higher education?
Classification: PR
6. What options were considered other than the discontinuance of formula funding?
Classification: SO
7. Who were the key active participants in the making of the discontinuance decision?
What role did each play?
Classification: PA.
8. What factions, parties, or interest groups were involved in applying pressure either for or against changing the funding methodology? What was the nature of the pressure applied by these persons?
Classification: PA
9. Were the consequences of discontinuing formula funding considered?
Classification: PR
10. Was it a quick decision to discontinue formula funding for Higher Education or was an effort made to study the possible negative impacts on Higher Education funding?
Classification: SO
11. Was the decision to discontinue formula funding a knee-jerk reaction, or were there other actions considered? If any, what were the other actions considered.
Classification: SO
12. What political forces were lined up for or against formula funding?
Classification: PA
13. What were the advantages or disadvantages with discontinuing formula funding?
Classification: PR
14. What were the advantages or disadvantages of formula funding?
Classification: PR
15. After the discontinuance decision was made, why and how was incremental funding adopted?
Classification: NA
16. What is wrong with not having a funding formula?
Classification: PR
17. Why was the decision made when it was made? Why couldn't it wait until a later date?
Classification: CO

APPENDIX B

INFORMED CONSENT

I agree to participate in an interview conducted by Mr. Michael J. Carter for the study of the discontinuance of formula funding of institutions of higher education in the Commonwealth of Virginia. I understand that as a participant in this study, I have the following rights:

My participation in this interview is entirely voluntary.

I am free to refuse to answer any question at any time or discuss any given subject.

I am free to withdraw from this interview at any time.

This interview will be kept strictly confidential.

Excerpts of this interview may be made part of the final research report, but under no circumstance will my name or identifying characteristics be included in the report.

Name _____

Signature _____

Date _____

VITA

Born and raised in Dallas, North Carolina, Michael (Mike) Carter currently resides in Martinsville Virginia. He received his Bachelor of Science from Belmont Abbey College, Belmont, North Carolina in 1983 where he majored in Business Administration and Accounting. Mike earned a Master of Business Administration from Queens College in 1986. In 1993, Mike relocated to Martinsville, Virginia, and received his Doctor of Philosophy in Educational Leadership and Policy Studies in 2002.

Dr. Mike Carter began his community college career in 1984. He has held administrative leadership positions at Gaston College, Dallas, North Carolina and at Patrick Henry Community College, Martinsville, Virginia. During his tenure, Mike has served in many capacities in community college leadership. Mike is currently chief financial officer at Patrick Henry.

Dr. Mike Carter has earned two professional designations in the financial field. He earned the Certified Public Accountant (CPA) designation from the North Carolina Board of Certified Public Accountants in 1991, and the Certified Purchasing Manager (C.P.M.) designation from the National Purchasing Management Association in 1989.