THE EFFECTS OF IMPLEMENTATION
OF STANDARDS OF QUALITY POLICY
ON THE QUALITY OF EDUCATION IN VIRGINIA, 1972 — 1980
by
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CHAPTER I
INTRODUCTION

Several attempts to improve the quality of education through state policy changes and legislative mandates can be cited in recent times. For example, the Michigan Department of Education initiated a system of accountability to assure quality education (House et al., 1974). The State of Vermont, issued the "Vermont Design of Education," a philosophical statement designed to promote innovations in classroom instructional procedures (Naumann-Etienne, 1974). Increasingly, state statutes go one step further than the common provision of a system of free public schools to that of establishing standards of education that reflect demands for accountability and equality of educational opportunities.

The present investigation took place in the State of Virginia, where the medium for statewide change was the Standards of Quality (1972-80). For the first time in the history of Virginia performance standards for education were prescribed by the state constitution. The development of Standards of Quality statements was mandated by revisions in the 1971 constitution which strengthened the state's responsibility in education.

Specifically, Article VIII of the state constitution mandated that the General Assembly "shall seek to ensure that an educational program of high quality is established and continually maintained." The State Board was directed, subject to the ultimate authority of the General Assembly, to prescribe standards of quality for the Commonwealth's school divisions. The Constitutional change also directed the State Board to submit annual reports to the Governor and to the General Assembly concerning the condition and needs of public education. The reports would serve to identify school divisions which had not established and maintained the prescribed standards. Thus, state policy attempted to mandate quality
education in Virginia and establish monitoring devices to assess implementation and continuity of quality educational programs.

The revised State Constitution became law on July 1, 1971, with the approval of the majority of the citizens of the State through a statewide referendum. By 1972, the first statement of Standards of Quality was adopted by the General Assembly for the 1972-74 biennium. This statement specified personnel, program, planning and instructional management performance standards for all schools in the State of Virginia. Thereafter, revised statements of Standards of Quality were adopted by the General Assembly for the 1974-76, 1976-78, 1978-80 and the 1980-82 bienniums.

The 1972-74 standards required that performance standards be implemented with strategies and objectives designed by each local school division through five-year and annual school division plans. With the publishing of the 1976-78 standards, planning efforts were expanded to include six year local school division plans as well as annual school division plans.

**Intent**

The Standards of Quality (hereafter SOQ) attempted to establish a minimal acceptable criteria by which school divisions would be held accountable. Thus, SOQ policy generated at the state level has influenced the structuring of the educational objectives and expectations of all local school divisions in Virginia for over a decade.

What was the intent of the policy that attempted to chart direction for public education in the State of Virginia? What performance outcomes were expected?
Inherent in the perception of improved quality of education was the academic advancement of students. In fact, SOQ program goals required that achievement tests should equal or exceed the mean ability level of the student population tested. Thus, the intent of SOQ policy was viewed as larger than the specific goals stated by the standards. Increasingly, policy implementation studies view goals and the effect of policy through a wider lens. Ingram and Mann assert:

The goals of policy are often not what they seem to be and it is a mistake to take stated purposes too literally. Government often lacks the power and will to address problems straightforwardly; thus, round about means are chosen ... In judging whether policies succeed or fail, it is important to consider latent functions served for the political system as well as manifest policy purposes.¹

Further, the public's perception of SOQ intent and policy achievement was probably that of improved accountability and student achievement, as reflected by public demand for educational accountability expressed during this era.

The present research assumed a broad base analysis of SOQ policy development. The assumption was that SOQ implementation was expected to:

1. Assure that the quality of education in Virginia was representative of the financial investment. Improved quality in education was expected to be demonstrated by improved student achievement.

   a. Lessen the disparities in teachers' salaries in educational financial standards between the State of Virginia and national averages to improve the quality of education in Virginia.

   b. Eliminate the disparities in educational financial and personnel standards among school divisions within the Commonwealth to improve and equalize the quality of education.

¹Helen M. Ingram and Dean E. Mann, Why Policies Succeed or Fail (Beverly Hill, 1980), p. 20.
2. Demand that each school division involve staff and community in long range planning to increase student performance and equalize educational opportunities among localities.

The preceding statements of intent of SOQ policy were developed through historical research, an analysis of SOQ documents and the researcher's experience as an administrator implementing SOQ policy. Thus, specific SOQ standards in the areas of personnel, program, systemwide planning and instructional management had as a basis, achieving goals of educational improvement as demonstrated by improved student performance.

Statement of the Problem

Although SOQ policy had been mandated for many years, there has been no systematic investigation of the impact of SOQ policy on student achievement. Central to any proposed investigation was the problem of determining the specific degree of SOQ policy implementation from 1972 to 1980.

Because the standards were revised each biennium from 1972 to 1980, SOQ policy changed constantly throughout this period. SOQ policy, for the purposes of analysis of implementation in the present study, was defined as a composite set of standards -- representing a synthesis of all common elements of standards enacted with measurable implementation beginning in 1972. Moreover, the many policy variations observed in the Standards of each biennium were reflected in the broad base definition of intent of SOQ policy. Thus, the research problem was twofold: (1) to assess the impact of SOQ policy on student achievement, division-wide educational planning, teacher salaries and standards for programs

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and personnel, and (2) to define and identify the framework of relationships between policy standards, conversion process and environmental variables influencing the implementation of SOQ policy.

**Research Questions**

After an analysis of SOQ policy intent and commonalities from mandates issued between 1972 and 1980, the following questions were proposed to guide this study:

Q-1. What was the extent of achievement of SOQ standards in personnel and programs by local school divisions from 1974 to 1980:
   a. How did the levels of SOQ standards selected affect implementation?
   b. What was the degree of increase or decrease in personnel and program standards?
   c. To what degree were personnel and programs equalized throughout the State after SOQ implementation?

Q-2. Were disparities between state and national teacher salaries norms lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities between state and national student achievement norms? If so, to what extent?

Q-3. Were disparities in teacher salaries and per pupil operation costs among local school divisions in Virginia lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities among localities in student achievement norms? If so, to what extent?

Q-4. What, if any, relationship existed among the following variables: the amount of change required; the amount of consensus on the need to change; and the percentage of achievement of local five-year plan performance
objectives? How was the percentage of achievement of local five-year plan performance objectives related to local SRA achievement scores as reported by local school division's five-year plans?

All questions were analyzed in relationship to environmental (non-schooling) effects on educational achievement as well as SOQ policy effects.

**Rationale**

While many studies review or define the steps in the implementation of innovations (Naumann-Etienne (1974), Berman and Pauly (1975), and Gross and Giacquianta (1971)), few studies attempt to theorize a policy implementation cycle. As suggested by Van Meter and Van Horn (1975), there is not only a need to examine the determinants of policy and to identify impacts or consequences, it is also important to provide explanations for observed consequences. The aforementioned statements suggest that the policy implementation cycle may consist of several stages from policy input, conversion process to consequences.

The present study was designed to determine the impact of SOQ policy, if any, on student achievement, educational planning, program and personnel requirements and to define the variables and relationships of implementation that influenced the observed consequences. Many policy implementation studies, Kaufman's 1960 study of the U.S. Forest Service, Baily and Mosher's (1968) examination of the administration of the Elementary and Secondary Education Act, and Pressman and Wildavsky's (1973) study of Oakland's community development program, helped to identify factors that contributed to an understanding of the policy implementation. The aforementioned studies, however, were limited because of the absence of a theoretical perspective to provide an explanation of observed consequences. The present investigation used the
theoretical perspective proposed by Van Meter and Van Horn\textsuperscript{3} to identify variables that affected the SOQ policy cycle and to conceptualize the policy cycle as it was implemented in Virginia. Correlations and multiple regression analysis methods were used to analyze the effect of SOQ policy implementation on school divisions of Virginia and to allow for some generalization of results.

**Limitations**

The present study may be useful in outlining some of the factors underlying the policy implementation process, as evidenced in the SOQ implementation in the State of Virginia. The difficulties of the study rest with a general lack of development in policy implementation theory and the difficulty in measuring implementation attributes. This study analyzed program, planning and personnel facets of SOQ policy from 1972-80. Classroom planning and management objectives were not analyzed. Regarding the latter, the objectives for schools and classrooms were never required as a standard in SOQ policy even though they were included as an addition to each printing of the Standards, and were adopted by the State Board of Education but not by the General Assembly. Quite aside from their non-binding legal character, it seemed difficult at best, to attribute the direct impact of management objectives to classroom or school improvement measures.

**Organization of the Study**

In summary, this study intended to assess the impact of SOQ policy on educational achievement and financial equality in local school divisions throughout

\textsuperscript{3}Carl Van Horn and Donald Van Meter, "The Policy Implementation Process," \textit{Administration and Society} 6 (February 1975):463.
Virginia in relationship to environmental (non-schooling) influences. Further, the study intended to explain why observed consequences of SOQ policies occurred.

Chapter I reviewed the development of the content and intent of Standards of Quality policy and defined the problem of the study. In addition, the chapter has presented a rationale for the study, questions to be answered by the study and limitations of the study. Chapter II presents a view of the related policy research literature which will serve to support and clarify the theoretical assumptions underlying the proposed questions of the study. Chapter III includes methods and procedures for data collection, a description of variables, sample, and methods of analyzing the data collected. Chapter IV contains a statistical analysis and discussion of the data collected. The analysis provides a description summarizing the dependence of one variable on others. Sample observations are generalized through hypothesis testing. Finally, Chapter V presents a summary of the findings, conclusions, implications and recommendations drawn from relationships inferred from the statistical data.
Chapter II
REVIEW OF THE LITERATURE

This chapter ties together two separate areas of research literature which have a bearing upon the topic of the present investigation. The first is an analysis of policy content. The analysis includes the major philosophical concepts which have contributed to the formulation of policies of educational standardization and equalization. Such concepts as the state's responsibility in education, quality of education and equality of educational opportunities are reviewed. Virginia's SOQ policy serves to illustrate the embodiment of these concepts into a state educational mandate for quality education. A review of the chronological development of SOQ policy serves to further identify key policy issues and to establish the intent of SOQ policy.

The second body of research reviewed in this chapter is related to the policy implementation cycle of educational policy. Here the definitions of policy implementation are reviewed, and models are proposed to define the implementation cycle. In summary, this review presents a broad vista of the policy implementation cycle as demonstrated by the implementation of SOQ policy in Virginia.

The Content of the Policy --
Conceptual Basis of State Support of Education

The Constitution of the United States gives the primary responsibility for public education to the states through the Tenth Amendment which provides that
"The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people."\(^1\)

Thus, state legislative bodies have the power to establish educational policy unless a specific power has been delegated to the federal government or has been denied to the states by provisions in the State or Federal Constitution. In practice, however, public education has been provided through the cooperative efforts of the federal, state and local governments.

State support of public schools has a long history dating back to the nineteenth century. In 1890 the states collectively provided $33,987,581 in financial aid to public schools,\(^2\) which amounted to 23.8 percent of the total public school revenue in 1890.\(^3\) By the late nineteenth century almost all states authorized tax supported public schools; however, state plans of financial support required that an equitable distribution of funds be limited to population consideration. As recounted by Johns and Morphet:

> Although it is generally conceded that education was a state responsibility under the Tenth Amendment to the Federal Constitution, most states during the nineteenth century exercised that responsibility, primarily by authorizing the levy of local school taxes for the support of public schools. No integrated plans of school finance were developed during the nineteenth century. No conceptual theory of school finance was developed. Such state funds as were distributed were generally apportioned on a school census basis with little consideration being given to equalization of educational opportunity.

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\(^1\)U. S. Constitutional Amendment X. Sec. 2.


\(^3\)Ibid., p. 26.
or the provision of at least a minimum program of education for all children.  

The development of a conceptual theory of equitable distribution of state resources to schools was based on the theoretical assumptions of political leaders such as Jefferson, Hamilton and Madison and later university professors such as Cubberley, Updegraft, Strayer and Mort. These theorists dealt with crucial values and policy issues in American education. Some of the values and issues involved in defining the role of the state in support of education as related by Johns and Morphet raised several philosophical questions such as:

1. Is equalization of educational opportunity a function of a democratic government?
2. What level of education should be guaranteed to everyone in order to promote the general welfare?
3. To what extent should the state exercise control over the public school?
4. To what extent should "home rule" in the school government be encouraged?
5. Are non-property taxes more equitable than local property taxes?
6. What percent of school revenue should be provided from state sources?

While many of these issues are actively debated today, the early theorists did much to develop a conceptual framework through which the nature and limits of state support of education could be defined.

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5Ibid., pp. 205-206.
The initial development of the theory of state school support has generally been attributed to Ellwood Cubberley. His findings were reported in the monograph, *School Funds and Their Apportionment*, published as a revision of his doctoral dissertation in 1905. Cubberley investigated the legal arrangements provided for public education and their relationship to inequalities of educational opportunity across the several districts of a state. He then proposed the following concept of the state's responsibility for providing educational service:

The state owes it to itself and to its children, not only to permit the establishment of schools, but also to require them to be established -- even more, to require that these schools, when established, shall be taught by a qualified teacher for a certain minimum period of time each year, and taught under conditions and according to requirements which the state has, from time-to-time, seen fit to impose. While leaving the way open for all to go to beyond these requirements, the state must see that none fall below. Theoretically all the children of the state are equally important and are entitled to have the same advantages: practically this can never be quite true. The duty of the state is to secure for all as high a minimum of good instruction as possible.

The concepts stated by Cubberley in 1905 are similar to the conceptualizations and values of prescribed standards underlying SOQ policy in Virginia today as supported by Article VIII of the State Constitution. In 1923 Strayer and Haig presented a theory of school finance which extended the concept of equalization of educational opportunity as a basis for equitable distribution of state resources.

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7Virginia, *Constitution* (1971), Art. 8, Sec. 2.
The Strayer and Haig report proposed in 1923 an "equalization of educational opportunity" concept which prevails in Virginia today:

1. To establish schools or make other arrangements sufficient to furnish the children in every locality within the state with equal educational opportunities up to some prescribed minimum;

2. To raise the funds necessary for this purpose by local or state taxation adjusted in such manner as to bear upon the people in all localities at the same rate in relation to their tax-paying ability; and

3. To provide adequately either for the supervision and control of all the school, or for their direct administration by a State Department of Education.\(^8\)

Strayer and Haig thus conceptualized equalization of educational opportunities as prescribed standards and equalization of the tax-burden among localities according to their ability to pay.

**Equalizing Educational Opportunities**

Basic to the analysis of the topic of the present study is the definition of equality of educational opportunities. The concept of equality of educational opportunities has been considered by some as a fundamental right of the American citizen. Yet, the implementation of the concept has been complicated by a lack of a clear definition of the term. Johns and Morphet define equal opportunity as follows:

Equality of opportunity for all does not mean that every student have the same program of education. Nor, as the courts have recently emphasized, does it mean that all students must have the same amount of money expended on them. Instead, it means that every person should have the opportunity for the kind and quality of

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education that will best meet his needs as an individual and as a member of the society in which he lives. This definition would imply that certain school divisions may need larger not equal financial assistance in order to achieve equality in opportunity that encounters negative non-school environmental inputs.

A research study by Guthrie and his colleagues analyzed extensive data available on the schools in Michigan (Guthrie, et. al., 1971), to determine the relationships among the following variables: socio-economic status, school services, academic performance and success in later life. Their findings confirmed that there is a high positive correlation between a public school student's socio-economic status and the amount of public money spent on his education. The second set of findings revealed another strong correlation between the following: school services components, student performances measured by standardized aptitude, and subject-matter achievement tests. All of the above stated components are affected by the availability of money, and consequently, exist to a more favorable degree in rich school divisions than in poor ones.

Equality in per pupil expenditures may not promote equal opportunities to develop the individual abilities of each member of our society. As Arthur Wise noted:

The equal-dollar-per-pupil definition may be rendered in the slogan: one pupil, one dollar. As a second manifestation of the one-for-one definition of equality, it assumes that differences in ability are not so relevant to education that they constitute a ground for a differential allocation of resources, the major shortcoming of this

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view is its rigidity -- it fails to take in consideration price-level differences and the effect of school size. Moreover, it assumes that to treat all equally by the objective standard of dollars is to treat all equally in fact. To offer students of different ability similar amounts of resources, as measured in dollars, may, in fact, be to treat them unequally.10

In summary, theorists such as Guthrie, Wise and others have contended that to equalize opportunity means to offset socio-economic disadvantages by additional financial support of education.

Cost-Quality Relationships

Quality education is defined in terms of academic achievement of students in the present study. While it is presumed that increasing the quality of education and thus increasing student achievement is likely to increase costs, it was not assumed that increased cost will necessarily result in improved quality of education. Specifically, John Tirrell identified several conditions which may regress or have no relationship to quality education even with an increase or change in cost.

1. In some school systems, the equality of education may be adversely affected by inept leadership and administration .... Similarly, factors that contribute to low morale may result in relatively low quality of service in one district, whereas in other districts high morale may result in higher quality. In individual school systems, therefore, quality may be affected to some extent by a number of factors that are not directly related to finance.

2. In some instances, state laws or local board policies or practices that limit or do not add to the quality of education provided. A change in law or in board policy, in such instances, should result

in the improvement of quality without any material change in financial support.\textsuperscript{11}

However, numerous studies do support the conclusion that equality of educational opportunity is related to cost as supported by Johns and Morphet's observations:

The quality of education provided in school systems where expenditures are low is far less satisfactory than in systems where expenditures are above the national average. Low expenditures tend to result in inadequate leadership, large classes, poor teachers and teaching, and other features that contribute to low quality.\textsuperscript{12}

\textbf{Background Development of SOQ Policy Intent}

Key to the development of SOQ policy were several studies requested by the State Legislature that assessed the status of education in Virginia as early as 1961. Among a number of studies requested by the General Assembly that related to the need for standards in education were the following:


All of the previously listed reports established the need for a Standard of Quality policy for education in Virginia and in the case of the last report gave an assessment of the initial implementation period (1971–76) of the SOQ policy. All reports emphasized the need to lessen disparities between the quality of education among school divisions in Virginia and between the state of Virginia and national standards.

The Disparity Among Virginia's School Divisions

Pursuant to the request of House Joint Committee Resolution No. 58, in 1961, the Commission on Public Education assessed curriculum, teacher training and other facets of education in Virginia relevant to assuring that Virginia's educational system meet the challenges of the space age. The following assessment was reported:

1. The commission believes in local and state control of education. We recognize that the challenges of the space age impose upon Virginia and its local school divisions a higher duty than ever before to educate our youth for leadership in a competitive age. We also believe in universal education.

2. Every child in this Commonwealth should be given the opportunity for an education that will enable him to compete for employment, and to compete favorably with the graduates of the schools of other states for admission to colleges and universities.

3. Today there are school divisions in Virginia which rank the finest in the Nation. Unfortunately, there are also divisions in Virginia which by every measure fall short of the requirements necessary to prepare graduates for higher education or equal vocational opportunity.

4. All the people of Virginia, wherever they reside, are affected by the level of education throughout the Commonwealth. The
State's future economy is, in large measure, related to the quality of its educational systems. In summary, the 1961 Report of the Commission on Public Education pointed to the need for the establishment of minimum standards for schools to lessen the wide range of disparity among Virginia's school divisions.

Development of the SOQ Financing Formula

Historically, the primary support for public education in Virginia has been supplied by the local government. The Standards of Quality mandated criteria for educational programs in Virginia and also forced a review of state funding procedures. In October 1972, Governor Holton appointed a Task Force on Financing the Standards of Quality to determine the cost of implementing SOQ, local ability to pay, and the method of distributing appropriations to localities to meet this cost.

Following receipt of the task force report, the Governor recommended that the General Assembly "approve a formula which provides for the apportionment of the cost of an educational program between the Commonwealth and the local units of government," and to "appropriate the additional funds necessary to meet the state's share" of the cost.

In its initial report, the task force recommended that for the 1974-76 biennium, the state abandoned its traditional method of using true value of real property to determine local ability to finance public education. Further, the task force suggested that local ability be measured by a composite index including true

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property values, personal income and taxable retail sale. The task force also recommended that:

1. After subtracting the one cent sales tax for education, the cost of the basic program should be apportioned between the Commonwealth and the school divisions of average capacity to pay on an equal basis -- 50 percent State and 50 percent local funds;

2. The State should provide for vocational and special education instruction costs that exceed the basic cost for the regular instruction;

3. Each locality should provide a reading a mathematics skills development program for low-achieving pupils in grades K-6;

4. Incentive funds should be provided as a method for encouraging and rewarding school divisions that make an effort greater than that required to meet the Standards of Quality; and

5. Local units of government should be provided with a reasonable period of time to adjust local financial patterns to this recommended program. Any loss in total State support per ADM should be prevented, and amount of increased local expenditures required in any one year should be limited.14

These recommendations were included in the Board of Education budget request for the 1974-76 biennium and subsequently were used, in part, by the General Assembly to develop a new Basic School Aid Formula, Figure 1, for funding.

Prior to the implementation of the new formula, Virginia used a version of the Strayer-Haig-Mort grant-in-aid to distribute state funds. The following guidelines were used:

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ADM Composite Index =

\[ 5x \left( \frac{\text{Local True Values}}{\text{Local ADM}} \right) + .4x \left( \frac{\text{Local Personal Income}}{\text{Local ADM}} \right) + .1x \left( \frac{\text{Local Taxable Retail Sales}}{\text{Total State ADM}} \right) \]

Per Capita Composite Index =

\[ 5x \left( \frac{\text{Local True Values}}{\text{Local Population}} \right) + .4x \left( \frac{\text{Local Personal Income}}{\text{Local Population}} \right) + .1x \left( \frac{\text{Local Taxable Retail Sales}}{\text{Local Population}} \right) \]

Local Composite Index = \( \frac{.6667 \times \text{ADM Composite Index} + .333 \times \text{Per Capita Composite Index}}{2} \)

Formula for Calculation of Local True Values and Local Composite Index in Virginia 1974-1980

Figure 1
1. Total cost of teacher salaries were determined through the use of a State Minimum Salary Scale.

2. From the calculated total cost of the basic program for each school division, a required local effort was deducted in order to determine the State share of the basic program. In addition to a required local effort of 6 mills on 1970 true values of real estate and public service corporations, a state levied one cent sales tax redistribution to local division on the basis of school population was deducted from the calculated total cost of the basic program.

Although Virginia's revised formula is still classified as a Strayer-Haig-Mort program, major differences exist between the old and new formulas. Probably the most significant difference is the change in the method used to determine the relative tax paying ability of local school divisions. In the revised formula, the local composite index of tax paying ability is derived from the sum of the average daily membership composite index assigned a 2/3 weight and the per capital composite index which has a 1/3 weight. The findings from the 1972 Task Force have been used as a basis for SOQ funding in Virginia since the 1973-74 school year. Basic per pupil cost\textsuperscript{15} of Standards of Quality are illustrated in Table 1. For any locality the proportional share from state and local sources has been determined by the previously defined "local ability to pay" formula.

Reviewing SOQ Implementation

After two bienniums of implementation (1972-74 and 1974-76) the General Assembly, by House Joint Resolution, requested a study of SOQ implementation. A partial summary of the results of that study follows:

\textsuperscript{15}This amount represents a total of the operation costs and the personnel costs for implementing the standards prescribed.
## Table 1

**SOQ Funding and Percentages of Increases**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973-74</td>
<td>$628</td>
<td>+ 9.4%</td>
</tr>
<tr>
<td>1974-75</td>
<td>$687</td>
<td>+ 6.3%</td>
</tr>
<tr>
<td>1975-76</td>
<td>$730</td>
<td>+ 8.2%</td>
</tr>
<tr>
<td>1976-77</td>
<td>$790</td>
<td>+ 4.4%</td>
</tr>
<tr>
<td>1977-78</td>
<td>$825</td>
<td>+ 13.5%</td>
</tr>
<tr>
<td>1978-79</td>
<td>$936</td>
<td>+ 2.6%</td>
</tr>
<tr>
<td>1979-80</td>
<td>$960</td>
<td>+ 10.7%</td>
</tr>
<tr>
<td>1980-81</td>
<td>$1,185</td>
<td>+ 10.2%</td>
</tr>
<tr>
<td>1981-82</td>
<td>$1,099</td>
<td>+ 11.4%</td>
</tr>
<tr>
<td>1982-83</td>
<td>$1,320</td>
<td>+ 10.0%</td>
</tr>
<tr>
<td>1983-84</td>
<td>$1,467</td>
<td></td>
</tr>
</tbody>
</table>
1. In practice, the principle emphasis of the standards has been on financial inputs. Secondary emphasis has been placed on outputs, the product of the learning process.

2. One very beneficial impact of the standards has been that laggard school divisions have been brought up in quality. The presumption now exists in Virginia that overall quality of its public school system has improved. However, by some tests or measures, disparities may still exist.

3. The trend in recent years has been to increase the resources invested in students at the higher end and, to an even greater extent, at the lower end of the ability scale.\textsuperscript{16}

From an analysis of state legislative documents that impacted on the development of SOQ, the assumed intent that SOQ policy assure that the quality of education was representative of financial investment seemed justified. Moreover, improved quality in education was expected, as related by all documents, to be demonstrated by improved student achievement.

A Chronology of SOQ Policy Development

This section of Chapter II presents an overview in the development of SOQ policy from 1969 to 1979. It is offered to establish a commonality among the issues and to delineate variables used for analysis in the present study.

When the General Assembly revised the State Constitution in 1969-70, there was a coalition of support to incorporate, along with major changes in the Constitution, prescribed Standards of Quality for public schools in Virginia. These provisions were approved by the 1970 General Assembly, accepted by a majority

of the citizens of the state through referendum and became law effective July 1, 1971.

The 1971 Constitution of Virginia provided broad goals to be prescribed as Standards and Objectives by the Board of Education, subject to revisions by the General Assembly. The goals of public education in Virginia, as defined by the General Assembly, were to aid each pupil, consistent with his or her abilities and educational needs, to:

1. Become competent in the fundamental academic skills;
2. Be qualified for further education and/or employment;
3. Participate in society as a responsible citizen;
4. Develop ethical standards of behavior and a positive and realistic self-image;
5. Exhibit a responsibility for the enhancement of beauty in daily life; and
6. Practice sound habits of personal health.\textsuperscript{17}

The 1972-74 Standards

By August 7, 1971, the State Board of Education had adopted a statement of policy that defined the purpose of the high school and specified broad objectives and standards of quality education for the state's school divisions.

A policy statement, adopted in 1971 by the Board, defined the purpose of the high school as follows:

The purpose of the High School is to provide preparation in the academic subjects for all students, limited only by their abilities and ambitions. Preparation for college must be a primary goal for those planning and capable of pursuing such a course. Opportunity also

\textsuperscript{17}Virginia, Constitution (1971), Art. 8, Sec. 2.
must be provided for pupils not continuing formal education beyond high school to prepare for successful employment.\textsuperscript{18}

The 1972 General Assembly revised the policy adopted by the State Board of Education and established the following SOQ Standards for the 1972-74 biennium:

1. Personnel Standards
   A. Central Office
   B. Schools

2. Instructional Materials and/or Educational Television Standards

3. Program Standards
   A. Elementary Schools
   B. Secondary Schools
   C. Kindergarten
   D. Special Education
   E. Vocational Education
   F. Continuing Education

4. Planning and Management Standards

5. Performance Objectives
   A. State
   B. School Division

6. Planning Management Objectives
   A. Individual School and Management Objectives (Principal and Staff)

B. Classroom Planning and Management (Teacher)\textsuperscript{19}

To facilitate implementation of the 1972-74 standards, eight state committees were appointed by Dr. Woodrow Wilkerson, State Superintendent of Public Instruction in 1972, to develop guidelines and forms to aid localities in meeting the Standards of Quality. The committees were composed of members of the State Department of Education, high school principals, elementary principals, supervisors of instruction, superintendents, local school board members, PTA representatives and classroom teachers. A number of educational consultants also worked with the committees.

At the local level, school division superintendents were asked by the State Superintendent to appoint committees to: (1) develop an understanding of the Standards; (2) participate on state committees which prepared guidelines and forms for implementing the Standards; and (3) provide leadership in planning a program to meet the Standards. Regional meetings, under the leadership of state department personnel, were held with local school division committee chairmen and division superintendents to discuss implementation of the Standards. Filmstrips, tapes, transparencies and commentaries to explain the Standards were sent to local school divisions for use with local planning committees and school personnel.

The State Department of Education organized task forces of state personnel to assist local school divisions in meeting the Standards. In addition, the State Department prepared and distributed a "Manual of Implementing Standards of

\textsuperscript{19}"Standards of Quality for Public Schools in Virginia, 1972-74", enacted by the General Assembly of Virginia, 1972. Copies of supporting documents in Appendix A.
Quality Objectives for Public Schools in Virginia, 1972-74. The State Department also assisted with development of five year improvement plans for each division and annual school plans for each school. Each school planning effort was to include community representatives and school staffs. The planning process suggested was a step-by-step procedure which included the following:

1. Identifying Needs
2. Classifying Needs
3. Selecting Needs to be Met
4. Listing Alternative Ways to Meet Each Need
5. Choosing Way(s) to Meet Each Need
6. Developing A Program to Meet Needs
7. Implementing the Program
8. Evaluating the Program

Each school superintendent was charged with the development of a five-year School Improvement Plan (1974-79), to be submitted by June 1, 1974 and updated and submitted each five years thereafter. In 1981 the requirement for a six-year plan was substituted. Such a plan was to be based on a study of the extent to which pupils were achieving the eight broad objectives formulated by the Board of Education. The five-year and six-year plans, to be submitted to the Board of Education, were to include the following:

1. The school division's educational program designed to achieve the eight broad objectives proposed by the State Board of Education.
2. Assessment of the extent to which the school division is achieving its purposes, including documentation.
3. Needs to be met as a result of the difference between purpose (1) and the assessment of the extent to which these purposes are being achieved.
4. Description of the programs to be modified or initiated to meet identified needs.

5. Estimates of the resources needed to implement the programs.

6. Priority listing by years of programs which will be initiated.

7. Description of the methods to be employed year-by-year to assess results.

8. Description of plans for annual updating of the five year plan.20

The Annual School Division Plan was to be prepared and presented to the school board to achieve specific objectives of the five year plan. A copy of the annual plan was also required to be submitted to the State Department of Education by June 30, 1974 and each year thereafter.

The 1974-76 Standards

Standards of Quality enacted by the General Assembly for the 1974-76 biennium represented a consolidation, refinement and upgrading of 1972-74 SOQ. The nine standards set forth requirements in:

1. Personnel
2. Special Education
3. Gifted and Talented
4. Vocational Education
5. Reading and Mathematics Skills Development
6. Kindergarten
7. Accreditation

8. Five-Year School Improvement Plan


In addition, the following objectives were specified:

1. Performance Objectives
   A. State
   B. School Division

2. Planning and Management Objectives
   A. School Planning
   B. Classroom Planning

Starting with the 1974-76 SOQ, each set of standards adopted by the General Assembly has included a provision making the Standards binding on local school divisions "only to an extent proportionate to the funding therefore provided by the General Assembly".

To insure effective accounting to the Governor, the State Department of Education distributed an "Action Program Bulletin for Implementing the 1974-76 Standards". Strategies for implementation were suggested for local school divisions.

The 1976-78 Standards

The key revision to the 1976-78 Standards of Quality was the emphasis on the development of basic learning skills for all pupils enrolled in the public schools which gave the "highest priority" to instructional programs developing reading, mathematics and communication skills. The 1976 session of the Assembly

mandated Standards indicating that in the future money received from localities which fail to meet the required expenditures for the SOQ would be paid into the state's general fund and not subjected to restoration. The 1976-78 SOQ included standards for:

1. Basic Learning Skills
2. Career Preparation
3. Special Education
4. Gifted and Talented
5. Personnel
6. Teacher Preparation
7. Testing and Measurement
8. Accreditation
9. Planning and Public Involvement
10. Policy Manual\textsuperscript{22}

The Planning and Management Objectives were expanded to require teachers to provide a favorable psychological environment for learning.

The 1978-80 Standards

The 1978-80 Standards included the 1976-78 requirements with only the additions of Standards on Alternative Education and Responsible Student Conduct. In summary, the Standards have evolved to their 1978-80 status through review and analysis by the General Assembly. At present the Commonwealth strives to meet the following standards:

\textsuperscript{22}"Standards of Quality for Public Schools in Virginia, 1976-78", enacted by the General Assembly of Virginia, 1976. Copies of supporting documents in Appendix A.
1. **Basic Learning Skills:** Requires each school division to give highest priority to instruction, use statewide minimum educational objectives in reading, communications and mathematics and provide a kindergarten program at least one-half day for all eligible children.

2. **Career Preparation:** Requires each school division to provide programs acceptable to the Board of Education that offers:
   
   A. Career guidance to all secondary students;
   
   B. Adequate preparation for students who plan to continue their education beyond high school;
   
   C. Vocational education providing marketable skills for students who do not plan to continue their education beyond high school.

3. **Special Education:** Required each school division to have a program acceptable to the Board of Education.

4. **Gifted and Talented:** Requires each school division to provide:
   
   A. Differentiated instruction to increase educational challenges;
   
   B. High school students who begin advanced education before graduating from high school with a high school diploma upon satisfactory completion of their first year of advanced education.

5. **Alternative Education:** Requires each school division to offer alternatives to traditional public school programs which will provide choices for students whose needs are not being met by traditional programs.

6. **Responsible Student Conduct:** Requires that:
   
   A. By June 1979, each school division conduct a thorough assessment of student conduct; and
B. By June 1980, each school division develop standards of student conduct and attendance.

7. **Personnel:**

Requires that:

Each school division employ a minimum of 54 certified instructional personnel for each 1,000 students in average daily membership.

8. **Staff Preparation and Development:**

Requires that:

A. Starting with the 1981-82 school year, a certificate requirement for persons beginning teaching career shall be successful in the completion of an undergraduate program which includes an introduction to the elementary and secondary school environment. This experience shall be in addition to the probationary period for beginning teachers;

B. A certified teacher be required every five years to have his or her certificate renewed; and

C. Each school division provide a program of personnel development.

9. **Testing and Measurement:**

Requires that:

A. Each school division administer tests primarily to provide the classroom teacher with information to help assess the educational needs of individual students;

B. Each school division shall administer annually normative tests for the purpose of assessing the educational progress of selected groups of students; and

C. In order to receive a high school diploma from an accredited secondary school after January 1, 1981, students shall earn the number of units of credit prescribed by the Board of Education.
10. **Accreditation and School Evaluation:**

Requires that:

Each community school involve the staff and community in revising and extending annually a six-year school improvement plan. This plan shall include:

A. The measurable objectives of the school division stated in terms of student performance;

B. An assessment of the extent to which the objectives are being achieved;

C. Strategies for achieving the objective of the school division; and

D. Evidence of community participation in the development of the six-year plan.

12. **Policy Manual:**

Requires that:

Each school division maintain and follow an up-to-date policy manual which includes at minimum:

A. A grievance procedure;

B. A system of direct communication between the local school board and its employees; and

C. A cooperatively developed procedure for personnel evaluation.\(^2\)

In addition to the Standards of Quality, planning management objectives were adopted by the Board of Education which prescribed standards for individual school and classroom planning and management. The preceding review of the evolution of SOQ four policy publications served to establish its philosophical

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foundation, identify key policy issues (program personnel), and to substantiate the policy intent suggested in Chapter I of the study, which was specifically to establish minimum educational standards and to improve the quality of education.

The Definition of Policy Implementation

Recently several works have focused on defining the meaning of policy implementation. Notable among these efforts are those of Pressman and Wildavsky (1973), Hargrove (1975), and Barsach (1977). It has been suggested that increased interest in the study of this area has been due to widespread concern that some governmental policies adopted were not succeeding. Ingram and Mann assert that:

A number of social, economic, environmental, and other programs initiated with the highest and most humane intentions are being judged unsuccessful and even counter productive.24

Further, Bardach contended that:

... after a policy mandate is agreed to, authorized, and adopted, there is underachievement of stated objective (creating jobs for the hardcore unemployed, building new towns, getting teachers to act in a different mode), delay and excessive financial cost.25

With increased concern for the rising cost of financing public education, policies designed to bring about greater quality and more effective educational practice, such as SOQ policy in Virginia, are also expected to be implemented successfully and efficiently. Yet successful implementation of policy objective

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24 Helen M. Ingram and Dean E. Mann, Eds., Why Policies Succeed or Fail (Beverly Hills, California: Saga Publications, 1980).

outcomes is most difficult to achieve. Ingram and Mann point to numerous blockages to implementation success:

1. Among the stumbling blocks to successful implementation is the proliferation of veto or clearance points. A great deal of modern policy depends upon a tangled web of federal, state, and local agencies to realize policy objectives;

2. If legislation is assigned to an agency that is favorably disposed toward the policy, and if the agency is well staffed and well funded, chances for success are improved. The presence of a "fixer," to use Bardach's term .... Time is a particular enemy to success. Fixers may be defeated, lose interest, or die;

3. Everything else being equal, policy implementation has a tendency to run down. Old policies, unless they have gone through a period of reform and rejuvenation, tend to be ineffective policies;

4. There are few hard and fast rules about what makes for successful implementation, and what works in one setting often fails in another. Local factors and characteristics unique to specific implementation contexts have a strong and direct effect on outcomes. Many of these factors such as commitment to policy and institutional support, are difficult to qualify.\(^{26}\)

From the above discussion, it is reasonable to assume that the study of implementation has a great deal of merit yet the conceptualization of its meaning is most difficult.

What then is implementation?

Majone and Wildavsky attempted to distinguish the stages of implementation from stages of policy development by the following analysis:

Implementation to us means just what Webster and Roget says it does; to carry out, accomplish, fulfill, produce, complete. But what is it that is being implemented? A policy, naturally. These must be something out there prior to implementation. A policy

\(^{26}\)Helen M. Ingram and Dean E. Mann, Eds., Why Policies Succeed or Fail (Beverly Hills, California: Saga Publications, 1980).
naturally ... But policies normally contain both goals and the means for achieving them. How, then, do we distinguish between a policy and its implementation? 27

Majone and Wildavsky thus maintain that a researcher cannot work with a definition of implementation that excludes policy. Thus, we define implementation as a process of accomplishing, fulfilling and completing policy goals or intended policy goals. For purposes of this research, policy formation is conceptually distinguished from implementation in that policy formation is considered a prior condition of implementation. The design of the policy (i.e., controls, supports and resources) as well as interaction and disposition of policy implementators are considered elements of the policy implementation cycle as well as performance or outcomes. This cycle is constantly being impacted by feedback data and environment influences. Thus, the implementation cycle is defined as dynamic and incremental in that it changes by degrees. One could consider this process similar to a "feedback model" as described in general systems theory.

Figure 2 provides an illustration of the five aspects of the system: inputs, outputs, process, feedback and environment. The following definitions are offered to further explain the model:

- system: the set of variables that are interest.
- output: variables that impact the environment and that are regulated. Output is usually thought of as some tangible "thing" that the system process pushes out into the environment. Unfortunately, systems also expel waste products. System outputs, especially for social systems, include

Feedback Model


Figure 2
environment and sufficiently important to the system to rate feedback regulatory loops.

- **input:** those variables entering the system from the environment and which the system can at least partially control.

- **process:** the change that the inputs undergo in being transformed into outputs. The process is a set of dynamic relationships among input variables and output variables.

- **feedback:** a part of the output that is returned to the input and that changes the input.

- **environment:** those variables (called parameters) that potentially affect the output and that we either can't or won't control.

Van Meter and Van Horn analyzed the policy implementation cycle and presented a conceptual framework for analysis. This framework is developed from a model of the policy delivery system illustrated in Figure 3, to show the organization of policy relations. In this model "policy" and "performance" i.e., implementation, are two distinct categories.

The components of the model are: (1) an environment that both stimulates government officials and received the products of their work; (2) demands and resources that carry stimuli from the environment to policy makers; (3) a conversion process, including the formal structures and procedures of government that transforms (converts) demands and resources into public policies; (4) the policies that represent the formal goals, intentions, or statement of government officials; (5) the performance of the policy as it is actually delivered to clients; and (6) the feedback of policies and performance to the environment, which is

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The Policy Delivery System

Van Horn and Van Meter,
The Implementation of Intergovernmental Policy,

Figure 3
transmitted back to conversions process as demands and resources of a later point in time (Van Meter, Van Horn, 1975).

The linkage between policy and performance, to provide an explanation of observed consequences, is a basis for a conceptualization of the policy implementation cycle. Van Meter and Van Horn give an explicit definition of policy implementation.

... policy encompasses those actions by public and private individuals (or groups) that are directed at the achievement of objectives set forth in prior decisions. This includes both one-time efforts in transforming decisions into operational terms, as well as continuing efforts to achieve the large and small changes mandated by policy decisions.29

In reality, there are disagreements about policy goals and objectives, there is vagueness and ambiguity about policies, uncertainty about the way policy should be made operational, procedural complexity, conflicts arising from public participation, and certainly political dissension. Further, participants implementing policy on a day-to-day basis find it difficult to distinguish between policy and implementation. "Policy is being made as it is being administered and administered as it is being made."30 In summary, policy implementation is evolutionary and adaptive in nature and must evolve from the intent of the policy design as well as the stated policy objectives. This position is further supported by Pressman and Wildavsky's contention that:


The study of implementation requires understanding that apparently simple sequences of events depend on complex chains of reciprocal interaction. Hence, each part of the chain must be built with the other in view. The separation of policy design from implementation is fatal. It is not better that mindless implementation without a sense of direction.31

Conceptualization of the Policy Implementation Cycle

The nature of the research problem in the present study suggests an input-output model of analysis. The research design is directed toward the question, "to what degree did SOQ policy impact, student achievement, division wide educational planning, teachers' salaries and standards for programs and personnel? Thus, the research question will be answered by establishing the relationships among the variables of the implementation cycle using multiple regression techniques for statistical analysis with a consideration of the incremental nature of policy implementation.

In a recent Rand educational policy study (1974) significant input-output research projects were reviewed with an outline of the design, procedures and results given for each study. From the original Rand study and an update of the Rand research, several studies are outlined in Table 2 that present an overview of

### TABLE 2

SUMMARY OF INPUT/OUTPUT RESEARCH

(RAND STUDY — 1972-74)

<table>
<thead>
<tr>
<th>STUDY</th>
<th>UNIT OF ANALYSIS</th>
<th>SAMPLE</th>
<th>DATA/PROCEDURE</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. James Alan Thomas, Efficiency in Education; A Study of the Relation Between Selected Input and Mean Test Scores in a Sample of Senior High Schools, unpublished Ph.D. dissertation High Schools, (Microf), Stanford University Library, 1962</td>
<td>School</td>
<td>206 schools in communities between 2,500 and 25,000 population</td>
<td>School output and input data were drawn from Project Talent data bank. Data on socio-economic characteristics of home and community down from census. A stepwise, multiple regression was run. All 32 independent variables were considered in every case.</td>
<td>Consistently insignificant variables were: Number of study hall periods, provisions for grouping, town population, unemployment rate and delinquency rate.</td>
</tr>
</tbody>
</table>

**SIGNIFICANT VARIABLES:** All 32 independent variables were significant to adult medium years of schooling at the .01 percent levels. Consistently significant variables were: size of class, starting salary of teachers' expenditures per pupil, number of days in school, number of books in library, percent drop-outs and present drop-outs and present number of students going on to college.
<table>
<thead>
<tr>
<th>STUDY</th>
<th>UNIT OF ANALYSIS</th>
<th>SAMPLE</th>
<th>DATA/PROCEDURE</th>
<th>RESULTS NON-SIGNIFICANT VARIABLES/ SIGNIFICANT VARIABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Charles Benson et al., State Local Fiscal Relationships in Public Education in California. Report of the Senate Fact Finding Committee on Revenue and Taxation, Senate of the State of California, Sacramento, March 1965.</td>
<td>School Division</td>
<td>Fifth-grade pupils in 249 California School Divisions</td>
<td>Data on socio-economic variables for districts' attendance areas were collected from 1960 census. Data on school resources were obtained from district records. The sample was divided by size of districts into three subsamples. After preliminary inspection of simple correlation, independent variables were included in a stepwise regression on each subsample.</td>
<td>Insignificant variables were: district taxes/total income, state aid/total income, size of attention area and unemployment rate.</td>
</tr>
<tr>
<td></td>
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<td><strong>SIGNIFICANT VARIABLES:</strong> For the small districts the following variables were significant expense per ADA, percent of teachers in the highest salary quartile, medium household income and ADA. For the middle-size districts: percent of teachers in the highest salary quartile, mean teacher salary and medium household income were significant. For the largest districts: the ratio of teacher and administrators and medium family income were found to be significant.</td>
</tr>
<tr>
<td>STUDY</td>
<td>UNIT OF ANALYSIS</td>
<td>SAMPLE</td>
<td>DATA/PROCEDURE</td>
<td>RESULTS NON-SIGNIFICANT VARIABLES/ SIGNIFICANT VARIABLES</td>
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<td>----------------------------------------------------------</td>
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<tr>
<td>3. James S. Coleman et al., &quot;Pupil Achievement and Motivation,&quot; Chapter 3, Equality of Educational Opportunity, U.S. Department of Health, Education and Welfare, U.S Office of Education, OE-38001, Washington, D.C., 1966, pp. 218-333.</td>
<td>Individual/School</td>
<td>645,000 students in the 1st, 3rd, 6th, 9th and 12th grades in about 3,100 schools.</td>
<td>1,170 high schools were randomly chosen. Within a stratified sampling scheme. Every elementary school that sent over 90 percent of its graduates to a selected secondary school was included in the sample of elementary schools. Background factors were drawn from questionnaires applied to individual students. Student outcomes were obtained from a battery of tests administered by ETS. A sequence of regression runs were made in which blocks of variables were added to a regression and the additional explanatory power of each block of variables was calculated.</td>
<td>Measures of school facilities and curriculum accounted for an extremely small amount of variation in student achievement. SIGNIFICANT VARIABLES: Teacher variables such as experience, degree level and preference for middle-class students accounted for between 1 to 8 percent explanatory power.</td>
</tr>
<tr>
<td>STUDY</td>
<td>UNIT OF ANALYSIS</td>
<td>SAMPLE</td>
<td>DATA/PROCEDURE</td>
<td>RESULTS NON-SIGNIFICANT VARIABLES/SIGNIFICANT VARIABLES</td>
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<td>--------------------------------------------------------</td>
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<tr>
<td>4. Richard Raymond, &quot;Determinants of the Quality of Primary and Secondary Public Education in West Virginia,&quot; Journal of Human Vol. 3, No. 4 (Fall 1968), pp. 450-469.</td>
<td>School Division</td>
<td>Approximately 5,000 students entering West Virginia county school districts.</td>
<td>A stratified random 10 percent sample of these students who did go on WVU was chosen. Their grade point average in freshman year at WVU was regressed on their grade point average in selected schools. Then the difference between each student's freshman-year GPA and his selected high school subjects GPA times the regression coefficient on high school GPA was calculated. The value of this calculated variable, averaged over all students in a county, was taken to be the GPA quality index for that county school district. The ACT quality index was</td>
<td>The following variables were found non-significant: percent teachers teaching in two or more fields, number of library volumes in excess of standard, median years of schooling by adults in county and urbanization of county.</td>
</tr>
</tbody>
</table>

**SIGNIFICANT VARIABLE:** Average teacher's salary was found to be highly significant.
TABLE 2 — Continued

<table>
<thead>
<tr>
<th>STUDY</th>
<th>UNIT OF ANALYSIS</th>
<th>SAMPLE</th>
<th>DATA/PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>calculated for each county by an identical procedure, using the ACT composite scores of the students in the subsample as the dependent variable in the simple regression. Four regressions were run for each dependent variable.</td>
</tr>
</tbody>
</table>

RESULTS
NON-SIGNIFICANT VARIABLES/
SIGNIFICANT VARIABLES
TABLE 2 — Continued

<table>
<thead>
<tr>
<th>STUDY</th>
<th>UNIT OF ANALYSIS</th>
<th>SAMPLE</th>
<th>DATA/PROCEDURE</th>
<th>RESULTS NON-SIGNIFICANT VARIABLES/ SIGNIFICANT VARIABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Byron W. Brown, &quot;Achievement, Costs, and the Demand for Public Education,&quot; Western Economics Journal, 10, 1972, pp. 198-219.</td>
<td>School Division</td>
<td>Fourth grade students (all in 250 Michigan school division)</td>
<td>Test scores and SES data collected and averaged by division by the ETS for the Michigan Department of Education. Students' average test score by division were regressed, two-stage least squares, on the independent variables.</td>
<td>School input variables: pupil/professional ratio, percent teachers with Masters and average teacher's experience were found to be insignificant. Significant VARIABLES: Socio-economic measures and characteristics of the region of the state and community were found to be significant.</td>
</tr>
<tr>
<td>STUDY</td>
<td>UNIT OF ANALYSIS</td>
<td>SAMPLE</td>
<td>DATA/PROCEDURE</td>
<td>RESULTS NON-SIGNIFICANT VARIABLES/ SIGNIFICANT VARIABLES</td>
</tr>
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<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>6. Rae Marie Levis, &quot;Educational Inputs and Outputs as Measured by the Michigan Educational Assessment Program: A Study in Relationships,&quot; unpublished. Ed.D. dissertation. Wayne State University, 1973</td>
<td>Division School Level</td>
<td>Random sample of seventh grade for schools and K-12 for districts.</td>
<td>Data from the 1971-72 Michigan Educational Assessment Program using five human resource measures, six divisions financial resource measures, two measures of student background were considered as input data. Input data was examined by multiple regression analysis in relationship to a composite estimate of achievement.</td>
<td>Financial variables, available only at the division level, appeared to make little significant contribution to achievement. Significant VARIABLES: There was a significant positive relationship between economic status and mean achievement of students at both school and district levels in Michigan. The input of socio-economic status reinforced the Coleman Study findings that out-of-school variables are better predictors of achievement than school variables of racial ethnic minority students.</td>
</tr>
</tbody>
</table>
the status of educational research using the input-output model. Those selected related directly to the questions of the present study.32

The preceding summary provided the finding for major research projects using the input-output model concept to measure achievement relative to school and environment factors. These findings indicated that the following input factors are significant to the educational output or performance of students:

1. size of class;
2. starting salary of teacher;
3. expenditure per pupil/per ADA;
4. median family income;
5. and, to some extent, teacher experience.

One finding that has had great impact on education performance theory was the 1966 Coleman report which asserted that the measure of school facilities and curriculum accounted for an extremely small amount of variation in student achievement independent of family background. Further, family background and teachers' characteristics were found to be important for student achievement. However, some studies (Bowles and Levin (1967)), have questioned Coleman's methodology and asserted that schooling factors are relevant to student achievement.

The research summarized thus far does not relate the input of specific educational policy to expected output or performance to assess the

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implementation of initiated policy. Although many factors contributing to an educational output or performance were analyzed in recent policy research which considered the implementation of educational policy such as: Pressman and Wildavsky (1973), Bardach (1977), Sorg (1978), Shapiro (1978), and Heflin (1978). This research did not employ conceptual or theoretical frameworks such as the input-output design; and only one policy study, Heflin's "Implementation of A School Desegregation Policy: An Analysis of the California State Department of Education Experience," related state educational policy to local school division implementation. Thus, a review of related literature suggests that the present research, while related to previous studies found in the literature, is unique in its attempt to define implementation of educational policy from the state level as an input-output process and to further define the theoretical basis of that implementation cycle.

A further review of the research literature revealed a model of policy implementation that offered a theoretical perspective for the analysis for the implementation process. The model proposed by Van Horn and Van Meter, conceptualized the implementation of governmental policy through a set of interrelated variables that were defined as determinates of policy performance.

The Van Horn/Van Meter Model -- illustrated in Figure 4 -- identifies eight variables that specify the relationship between policy and performance. Key
A Model of Intergovernmental Policy Implementation

Figure 4
variables associated with the implementation cycle and outlined by the model are
as follows:

The Policy: Resources and Standards

Two key components of the policy implementation model were listed by Van
Horn and Van Meter -- policy resources and policy standards. The issues listed
below were cited as important relations to the impact of these components on
implementation:

1. Policy funds and incentives were usually found to be inadequate -- a cause often cited for failure of implementation efforts.

2. The timing of the release of funding information to the agency
   can have important consequences for the success of the program
   administrators forced to plan with insufficient knowledge about
   the amount of funds available for the school year will experience
   serious difficulties.

3. Policy standards move beyond the general legislative goals and
   preamble rhetoric and establish requirements, in varying degrees
   of specificity, for how those goals shall be implemented. Standards
   are commonly contained in the legislation in such
   diverse sources as technical assistance guides, statements by
   policy makers, and news releases and brochures from the agency
   responsible for obtaining compliance.

4. Ambiguities in policy standards may be fostered deliberately by
   policy makers in order to insure positive responses by
   implementors. Moreover, standards may remain vague because
   policy makers are unwilling or unable to reach consensus on the
   directives that should be promulgated.

Communication

Policy standards represent no more than exhortations: they are
inanimate messages that must be communicated to those in charge of
executing policy. Poor communications may be caused by a variety
of factors, not the least of which is the original ambiguity contained

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33Carl E. Van Horn and Donald S. Van Meter, The Implementation of
Intergovernment Policy, ed. Charles O. Jones and Robert Thomas, Vol. 3: Public
in the motion of policy standards. Added to these inherent problems are the selective perceptions and concerns of implementors.

Enforcement

Norms and incentives are frequently used as enforcement techniques. An important method of governmental influence is the socialization, persuasion, and co-optation of state and local officials.

Another strategy to assure compliance is to specify conditions and procedural requirements, such as elaborate reporting and accounting systems in the regulations that accompany the acceptance of funds.

Assurance do not guarantee that objectives will be fulfilled, so more reliable forms of surveillance such as on-site visitation, program reviews, program evaluation and audits. The most threatening form of potential power is the authority to withdraw or recover funds for non-compliance. This ultimate weapon is rarely used. The more common practice of withholding funds is the audit exception.

Dispositions of Implementors

Even when the policy standards are communicated with accuracy, clarity and consistency, successful implementation may be frustrated when officials are unaware that they are not in full compliance with the law and do not know what they must do to get there.

Implementors may not execute the policy's standards because they reject the objectives contained in them. Those holding negative orientation toward the policy may openly defy program objectives.

Characteristics of the Implementing Agent

The status of the agency within either the parent organization of which it is a part or the local government structure also affects its administration capacity. An organization without sufficient financial and political support and without the necessary independence to make decisions and hire qualified personnel will face severe problems in administering programs.

Political Environment

The political environment of the implementing agencies affects the nature of policy performance and the implementing action of the agencies. Several scholars have noted that public and elite opinion, and the program of them, are important determinants in the policy implementation process.
Economic and Social Conditions

Economic conditions, both as needs and resources, influences the chances of successful program performance.\(^{34}\)

In summary, the Van Horn and Van Meter offer eight variable clusters that comprise a model of intergovernmental policy implementation. Specific relationships between variables are delineated in Figure 4. If one accepts the framework as a heuristic model the direction of relationships indicated by the model and variables identified could then be applied to the SOQ implementation cycle.

Summary

This chapter brought together an discussion of intent and philosophy of SOQ policy. Further, specific goals, policy standards and resources relative to the policy, were defined. The process of implementation -- to carry out, accomplish, fulfill -- was defined as an incremental process and often a non-rational process and was viewed as a system of input-output operations. Lastly, eight variables: policy standards, resources, communication, enforcement, characteristics of implementing agencies, political conditions, economic conditions, disposition of implementors and performance were proposed that formulated the basis of a theoretical model of implementation that attempted to explain how policies are implemented.

Chapter III  
RESEARCH DESIGN AND METHODOLOGY  

NATURE OF THE INQUIRY

This chapter describes the procedures used in empirical inquiry in pursuit of answers to the questions of the study. These questions are reviewed here for ease of reference:

1. What was the extent of achievement of SOQ standards in personnel and programs by local by local school divisions from 1974 to 1980?
   a. How did the levels of SOQ standards selected affect implementation?
   b. What was the degree of increase or decrease in personnel and program standards for local school divisions relative to the standards?
   c. To what degree were personnel and programs equalized throughout the State after SOQ implementation?

2. Were disparities between state and national teacher salaries norms lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities between state and national student achievement norms? If so, to what extent?

3. Were disparities in teacher salaries and per pupil operation costs among local school divisions in Virginia lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities in student achievement norms among localities? If so, to what extent?

4. What, if any, relationship existed among the following variables: the amount of change required; the amount of consensus on the need to change; and the percentage of achievement of local five-year plan performance objectives? How was the percentage of achievement of local five-year plan performance objectives related to local school division's five-year plans?

The present research is ex post facto in design which is, according to Kerlinger ... "systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already
occurred or because they are inherently not manipulatable.\textsuperscript{1} Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables.

The direct control or manipulation of the independent variables of the present study -- SOQ policy mandates -- could not be accomplished because implementation of the policy had occurred prior to the beginning of the study. The first statement of Standards of Quality was adopted by the General Assembly in 1972; thus, eight years had elapsed between enactment and the present study.

Because SOQ policy was a state mandate, it was not feasible to systemically exclude students from SOQ requirements to provide a method of direct intervention or to establish comparison groups for the study within the State of Virginia. Further, criteria used to establish SOQ policy standards were based on an assessment relevant to educational needs identified for students within Virginia. Therefore, establishment of comparison groups for the study outside of Virginia seemed unproductive for the following reasons: (1) the assessment of educational needs outside Virginia would not be parallel to assessments within Virginia, thus prohibiting a study of corresponding variables, and (2) many states had mandates for quality education differing from those in Virginia whose impact on a comparison group could not easily be assessed.

The population of this study was identified as all students enrolled in the Virginia public schools from 1972 to 1980. The basic units of analysis for the study included all school divisions in Virginia during the time period of the study.

The impact of SOQ policy on student achievement on the Science Research Associates Examinations Series (SRA) and the Sequential Test of Educational Progress (STEP) by Virginia's students from 1972 to 1980 was assessed. Data from three subtest areas of reading, language arts and mathematics were used to assess achievement in reading, writing and arithmetic as a measure of the quality of education in Virginia. Equalization of educational opportunities was expected to be achieved through adherence to State standards in (1) personnel requirements, (2) program and planning requirements and (3) financial support of education as measured by per pupil operational costs and teachers' salary. These State standards and financial resources were incorporated into the design of the study as independent variables.

The processes used to implement SOQ policy at the local level -- five year plans and annual school division plans -- were defined as the intervening variables. Five-year and annual plans at the division level represented an assessment of the educational status of the division relative to SOQ standards; however, only five-year plan data for 1979 were available. For the purposes of the present study only achievement data from goals and objectives in the areas of reading, language arts and mathematics of SOQ policy were examined for outcomes from a cross-sectional perspective. The cross-sectional analysis provided a retrospective examination of the achievement of an individual grade level over the time frame of the study.

Figure 5 is an illustration of a longitudinal/cross-sectional analysis of Virginia's achievement test series from 1972 to 1979-80. The limited available data allowed only for a complete analysis of test data for grade four. However, limited analysis was possible for grades six, eight and eleven. Longitudinal
Longitudinal/Cross-Sectional Analysis of the Statewide Testing Program in Virginia 1972-79 -- Achievement Tests

Figure 5
analysis was not pursued due to inequality in test contents among the fourth, sixth, eighth and eleventh grade levels and the difficulties inherent in measuring the impact of changing SOQ standards on achievement at differing grade levels.

The Conceptual Framework

As suggested by a number of scholars, Lindblom (1965), Wildavsky (1974), and Van Meter and Van Horn (1978) policy implementation is most likely to involve incremental change. Thus, measure of the amount or degree of change, consensus among the participants to change and percentages of financial support to change were identified as intervening variables which incrementally impacted the planning process of SOQ implementation. Through the intervening variables the independent variables affected the dependent variables.

A constraint variable represented any factor influencing the policy implementation process over which the policy maker had no control. These constraint variables are full tax valuation of the division, proportion of minority group students in grades 1-12, enrollment in grades 1-12, number of students divided by square miles in district, i.e., density and the ability levels of students as measured by the State testing program as constraint variables. While other constraint variables could be identified, those suggested were assumed to have had the greatest degree of impact on the dependent variables. Constraint variables identified for the present study were suggested by a project known as "Performance indicators in Education."²

The dependent variables of the present study were defined as policy outcomes as measured by the percentage of SOQ standards achieved and the amount of academic achievement demonstrated by fourth grade students in Virginia as measured by State mandated testing program from 1972 to 1980.

In order to analyze the relationship between SOQ policy and educational impact, a conceptual framework is offered and illustrated in Figure 6. The independent and dependent variables of the conceptual framework are derived from a model of the implementation cycle offered by Van Horn and Van Meter as described in Chapter II of the present study.

This diagram and the previous discussion provides: (1) a delineation of variables relevant to the problem under study, (2) explication of the significant relationships among the variables, and (3) a framework for the formulation of propositions about the relationships among variables of the study. The policy implementation cycle was analyzed from a systems approach of policy input, process, output and feedback as illustrated in Figure 2 of Chapter II.

The variables selected for the conceptual framework are, in part, similar to those defined in the Van Horn and Van Meter model as illustrated by Table 3. The design of the conceptual framework, however, required quantifiable variables in order to analyze how SOQ policy was implemented through measures of standard achievement and student achievement. The elements of communication, enforcement and political conditions outlined in the Van Horn and Van Meter model were difficult, if not impossible, to quantify and were not included in conceptual framework.
TABLE 3
COMPARISON OF CONCEPTUAL FRAMEWORK VARIABLES
AND THE VAN HORN AND VAN METER MODEL

<table>
<thead>
<tr>
<th>Van Horn and Van Meter Model Variables</th>
<th>SOQ Conceptual Framework Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Standards</td>
<td>Consolidates SOQ Policy Standards -- Personnel and Programs</td>
</tr>
<tr>
<td>Resources</td>
<td>SOQ Financial Standard -- per pupil cost</td>
</tr>
<tr>
<td>Communication</td>
<td>Not defined as a variable</td>
</tr>
<tr>
<td>Enforcement</td>
<td>Not defined as a variable</td>
</tr>
<tr>
<td>Characteristics of the Implementing Agencies</td>
<td>Not defined as a variable</td>
</tr>
<tr>
<td>Political Condition</td>
<td>Not defined as a variable</td>
</tr>
<tr>
<td>Economics and Social Conditions</td>
<td>Environmental Factors</td>
</tr>
<tr>
<td>Disposition of Implementors</td>
<td>Determined from priority rating and goals of five-year plans</td>
</tr>
<tr>
<td>Performance</td>
<td>Achievement of Standards Student Achievement on SRA</td>
</tr>
</tbody>
</table>
Conceptual Framework for the Study of the Effects of SOQ Policy Implementation

Figure 6
SOQ Policy Variables

The SOQ policy standards were previously identified in the conceptual framework as the key policy variables of the present study. However, a review of the history of SOQ policy development, as illustrated in Figure 7, indicates that the policy was refined and modified every two years within the eight year period of 1972 to 1980. In the present research, only five policy standards were selected for input as variables among the many listed. The five standards selected were judged by this author to be inclusive of most policy mandated and represented a composite of SOQ policy during the period of implementation. Thus, success of policy implementation was regarded as the extent to which equalization of programs, personnel and financial support of education was achieved through SOQ policy set as reflected by these five composite variables.

From an analysis and refinement of the scheme in Figure 7, SOQ Policy Development variables were identified that were most inclusive of all sections of the standards (All Standards in Appendix A). Thus, the list that follows represents the composite of all SOQ policy selected for the present study.

1. **Personnel Standards:** Required that a specific number of educational staff be assigned to a specific number of pupils.

2. **Planning and Management Standards**

3. **Program Standards:**
   a. Accreditation -- Required that all school programs be fully accredited according to state standards.
   b. Special Education -- Required that a plan for special education for each school division be approved by the State Department of Education.
4. Performance Objectives (included from 1974-76):

State and School divisions' objectives in reading, mathematics, kindergarten education and certification that were later incorporated in other SOQ standards.

Specific SOQ performance objectives investigated in this study stated in the 1974-76 standards were as follows:

a. High school graduates expressed as a percent of the first grade enrollment twelve years earlier should increase by at least three percent each year or until a level of seventy percent is reached. Appropriate adjustments will be made for school divisions with significant increases or decrease in school populations;

c. Vocational Education/Career Education -- Students not continuing their education beyond high school were required to have a marketable skill.

d. Gifted and Talented -- Required identification and special programs for identified students.

e. Reading and Mathematics Skill Development/Basic -- Required each system to develop minimum educational objectives in reading, communications and mathematics skills in the primary and intermediate grades.

f. Kindergarten -- Required that each division provide at least one-half day for all eligible children.

g. Alternative Education -- Each division was required to offer alternatives to the tradition public school programs.

h. Testing and Measurement -- Required each school division to administer test to provide classroom teachers with information to help in assessing the educational needs of individual students.

i. Responsible Student Conduct -- Required each school division to develop standards of student conduct and attendance.
b. The average achievement level of the student population in reading and mathematics as measured by standardized achievement tests should equal or exceed the average ability level of the student population as measured by scholastic aptitude tests;

c. The percentage of teachers holding advanced degrees should increase by at least two percent each year or until at least twenty-three percent of the teachers hold such degrees. Work toward advanced degrees should be in the subject area to which the teacher is assigned; and

d. The percentage of attendance of pupils should not fall below the average of the last three years or ninety percent of school membership.

5. Amount of Financing -- Total operational cost per pupil (Average Daily Attendance) and Classroom Teacher Salary

Data on both operational costs and classroom teacher salary were obtained to contrast the two different methods of assessing financial support of education. Classroom teacher salary was expected to be the most accurate measure. Total operational cost was affected by many variables such as transportation cost within a district, building cost, declining enrollment problems, etc., which might not be constant for a majority of the districts included in the study and might distort the analysis of data. However, most of the existing studies on financing in Virginia use total operational cost data for analysis. The inclusion of both factors of financing gave the study greater accuracy and allowed one to compare this study with other studies in this area.

The preceding five variables were used to establish a conceptual framework for analysis of SOQ implementation in terms of input and output functions. These procedures were proposed to assess the degree of implementation by comparing policy standard specifications (input) with performance (output) and also policy intent as measured by improved student achievement with performance (output).

The five composite SOQ variables did not include planning and management standards which are listed in Figure 7. Management objectives were not analyzed
KEY —— Modified Language/Similar Intent

SOQ Policy Development

Figure 7
as variables in the policy implementation process because of the difficulty in attributing these standards to direct achievement in the classroom.

**Hypotheses**

In order to test the statistical significance of the relationships among variables inferred from the questions and the conceptual framework of the present study, the following hypotheses were generated for this study:

**H-1.** There is no linear relationship between average State (VA) student achievement in reading, language arts and Mathematics, as measured by the SRA achievement test and the disparity ratio of average national teacher salary cost to average (Virginia) teacher salary cost.

**H-2.** There is no linear relationship between average locality student achievement in reading, language arts and mathematics, as measured by the SRA achievement test and the disparity ratio of average State (VA) per pupil total operational cost to average locality (school divisions in Virginia) per pupil operational cost.

Hypothesis one proposed to test a relationships between national and state teacher salaries and the improvement in student achievement during the implementation of SOQ policy as suggested by question two. Further, hypothesis two was proposed to test relationships between per pupil expenditures and student achievement during SOQ implementation as suggested by question three.

A major difficulty in establishing a clear-cut causal relationship in *ex post facto* research rests with the fact that the independent variables may undergo as a result of the effects of the dependent variables. Such is the difficulty in this research, where review of progress made in implementing SOQ policy resulted in changing standards and financial support.
These considerations suggested that interdependent relationships existed, and that the investigation of these relationships must be restricted to limit the parameter of the study within the constraints of the researcher. Thus, the hypotheses developed represent only the major issues considered in the research questions.

Data Collection Procedure

Most data presented in Chapter IV were readily available from documents published by the Virginia Department of Education and from federal census data. After all documents were assembled, a data entry sheet was designed for each school system for each of the eight years of the study. Thirty-nine data entries were placed on each sheet. The total data entered into the computer exceeded fifty-three thousand units.

The most difficult data to assemble were the five-year plan information. While the files of the Virginia Department of Education were generously shared, obtaining quantified data from objectives that were not stated in terms of student performance was difficult, and, in the cases of some divisions, impossible. Further, only 1979 and 1980 plans were available. Obtaining the five-year plan data of amount change and consensus (priorities) to change and translating it into quantifiable results required several months of research time.

A great deal of the missing data resulted from five-year plans that did not specify performance objectives, and in addition inconsistencies in the State Testing program. In some years several grade levels were not included in the test program.
After all data were assembled a considerable amount of time was spent assuring the accuracy of the data recorded on computer cards. It was assumed that the initial test information, planning information and census information were accurately reported.

**Data Analysis Procedure**

**Unit of Analysis**

Virginia School Divisions (137)$^3$

**Sample**


**Data**

1. SRA test data (raw scores) in Mathematics, Language Arts and Reading for grades 4, 6, 8 and 11 collected by the Virginia Department of Education.

2. Local School Divisions' Five-Year Plans, 1979 submitted to the Department of Education.


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$^3$The number of school divisions analyzed in the study varied from 137 to 140 due to consolidation and merger of three divisions.
Variables

Independent Variables/Policy (Financial and Personnel Departments)

\[ x_1 = \text{Total Operational Cost per pupil per school division (ADA) (1972-79)} \]
\[ x_2 = \text{Division/State Operation Cost Ratio} \]
\[ x_3 = \text{Average Salary of Teachers per school division (1972-79)} \]
\[ x_4 = \text{Division/State Salary Ratio (1972-79)} \]
\[ x_5 = \text{Division/National Salary Ratio (1972-79)} \]
\[ x_6 = \text{Pupil/Teacher Ratio per school division (1972-79)} \]
\[ x_7 = \text{Percentage of minority persons in county/city (1970)} \]
\[ x_8 = \text{Enrollment of the school division (1-12)/100 (1970-79)} \]
\[ x_9 = \text{Enrollment of school (1970-79)/square miles in city or county} \]
\[ x_{10} = \text{SRA ability measures, grade 4 (1972-79)} \]
\[ x_{11} = \text{True Taxation value of property of the county/city (1971-79)} \]
\[ x_{12} = \text{Median Family income of the county/city (1970)} \]
\[ x_{13} = \text{Percentage of change required by five year plan objectives in language arts (1979)} \]
\[ x_{14} = \text{Percentage of change required by five year plan objectives in mathematics (1979)} \]
\[ x_{15} = \text{Percentage of change required by five year plan objectives in reading (1979)} \]
\[ x_{16} = \text{Priority rating of language in five year planning objectives (1979)} \]
**Priority rating of Mathematics in five year planning objectives**

\[ X_{17} = \text{Priority rating of Mathematics in five year planning objectives (1979)} \]

**Priority rating of Reading in five year planning objectives**

\[ X_{18} = \text{Priority rating of Reading in five year planning objectives (1979)} \]

**Dependent Variables/Achievement Measures**

\[ Y_1 = \text{SRA language arts scores, grade 4 (1970-79)} \]

\[ Y_2 = \text{SRA mathematics scores, grade 4 (1970-79)} \]

\[ Y_3 = \text{SRA reading scores, grade 4 (1970-79)} \]

**Achievement Measures/Policy Factors**

\[ Y_4 = \text{Achievement rate of five year plan objectives in language arts (1979)} \]

\[ Y_5 = \text{Achievement rate of five year plan objectives in mathematics (1979)} \]

\[ Y_6 = \text{Achievement rate of five year plan objectives in reading (1979)} \]

**Variables with Limited Analysis**

Analysis for the variables that follow was limited by missing test data. SRA test administration for grades six, eight, eleven was not required by the state for all years of the present study. Generally, fourth grade data were most complete and were analyzed with correlation and regression analysis. Sixth, eighth, and eleventh grade data were subject to correlation analysis only.
Independent Variables/Limited Analysis

\[ X_{19} = \text{SRA ability measures, grade 6 (1972-76)} \]
\[ SRRAB6 \]

\[ X_{20} = \text{SRA ability measures, grade 8 (1974-79)} \]
\[ SRAAB8 \]

\[ X_{21} = \text{SRA ability measures, grade 11 (1974-75, 76, 78 and 79)} \]
\[ SRAAB11 \]

Dependent Variable/Limited Analysis

\[ Y_{10} = \text{SRA language arts scores, grade 6 (1972-76)} \]
\[ SRALA6 \]

\[ Y_{11} = \text{SRA mathematics scores, grade 6 (1972-76)} \]
\[ SRAMA6 \]

\[ Y_{12} = \text{SRA reading scores, grade 6 (1972-76)} \]
\[ SRARE6 \]

\[ Y_{13} = \text{SRA language arts scores, grade 8 (1974-79)} \]
\[ SRALA8 \]

\[ Y_{14} = \text{SRA mathematics scores, grade 8 (1974-79)} \]
\[ SRAMA8 \]

\[ Y_{15} = \text{SRA reading scores, grade 8 (1974-79)} \]
\[ SRARE8 \]

\[ Y_{16} = \text{SRA language arts scores, grade 11 (1974-79)} \]
\[ SRALA11 \]

\[ Y_{17} = \text{SRA mathematics scores, grade 11 (1974-75, 76, 78 and 79)} \]
\[ SRAMA11 \]

\[ Y_{18} = \text{SRA reading scores, grade 11 (1971-72, 73, 74, 75, 76, 78 and 79)} \]
\[ SRARE11 \]

Tables 4, 5, 6, and 7 present an outline of the procedures used to investigate questions and hypotheses and also to measure variables defined in the conceptual framework of the present investigation.

Table 4 relates the extent of achievement of SOQ Standards -- question one of the present study to the appropriate SOQ policy issues under study. Speci-
fically, table 4 illustrates the relationships between the input (independent variables) of Personnel — Standard 1 Program — Standards and Performance Objectives — Standard 4 and output (dependent variables) of Performances or Achievement of SOQ standards. Data Collecting procedures were outlined that measured and analyzed the degree of implementation of standards.

Table 5 relates hypothesis one to the policy variables of Financial Resources (Standard 5). This hypothesis was offered to determine the extent to which disparities between state and national averages of teacher salaries varied with achievement after implementation of SOQ. Regression models were used to control for the simultaneous effects of independent variables of teacher salary and per pupil cost on achievement. Thus, the separate effects of salary and operations costs could be assessed. Total operations cost per pupil was included to analyze the effects of declining enrollment, accelerated transportation costs and other financial considerations that may not be reflected in classroom teacher salary costs paid by a local school division.

Tables 6 and 7 examine the impact of the independent variables of financial resources — Question three and Hypothesis two — supported by SOQ policy, on lessening the differences between the State average achievement in same areas by the local school divisions as measured by the SRA examination.

Data from both Tables 5 and 8 were analyzed using regression analysis. Variables were analyzed on two levels: (1) National averages compared to state averages and (2) state averages compared to local divisions' averages.

Table 7 examines the relationship between the key variables in the planning standard implementing SOQ policy at the division level — amount of change, consensus on the need to change and financial support — to determine how the
TABLE 4
ANALYSIS PROCEDURE FOR QUESTION ONE

<table>
<thead>
<tr>
<th>Research Questions/Hypothesis</th>
<th>SOQ Policy Issues/Variables</th>
<th>Data Collection Procedures/Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q-1. What was the extent of achievement of SOQ standards in personnel and programs by local school divisions from 1972 to 1980?</td>
<td>Standard 1. <strong>PERSONNEL STANDARD</strong> -- (Requirements varied each year)</td>
<td>1. Graphic display of extent to which this standard was implemented by each locality for 1972 to 1980.</td>
</tr>
<tr>
<td>a. How did the level of SOQ standards selected affect implementation?</td>
<td></td>
<td>2. Analysis of level selected relative to the performance of localities.</td>
</tr>
<tr>
<td>c. To what degree were standards in personnel and programs equalized throughout the State after SOQ implementation?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Questions/Hypotheses</td>
<td>SOQ Policy Issues/Variables</td>
<td>Data Collection Procedures/Analysis</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>Standard 4. PERFORMANCE OBJECTIVES - - (included from 1972 to 1975)</td>
<td></td>
<td>1. Graphic display of extent to which this standard was implemented by each locality from 1974 to 1976.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Analysis of level selected relative to the performance of localities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Analysis of the degree of equalization among localities.</td>
</tr>
</tbody>
</table>
TABLE 5
ANALYSIS PROCEDURE FOR HYPOTHESIS ONE/QUESTION TWO

<table>
<thead>
<tr>
<th>Research Hypotheses</th>
<th>SOQ Policy Issued</th>
<th>Variables</th>
<th>Data Collection Procedures Analysis</th>
</tr>
</thead>
</table>
| H-1. There is no linear relationship between average state (VA) student achievement in reading, language arts and mathematics, as measured by the SRA achievement and the disparity ratio of average national classroom teacher salary to average (VA) teacher salary cost. | Standard 5. AMOUNT OF FINANCING    | $X_3, X_4$ and $X_5$  
$Y_1, Y_2$ and $Y_3$  
$Y_{10}$ to $Y_{18}$ (limited analysis) | 1. Graphic display of teacher salary cost 1970-80.  
2. Graphic display of 4, 6 and 8 grade SRA scores in mathematics, language arts and reading.  
3. Analysis of salary disparity ratio  
4. Correlation analysis of independent and dependent variables. |
|                                                                                   | Comparison of average national classroom teacher salary and average state classroom teacher salary to achievement. |                                                        |                                                                                                      |

*All dollar amounts reported in 1970 dollars.
Research Hypotheses | SOQ Policy Issued | Variables | Data Collection Procedures Analysis
--- | --- | --- | ---
Q-3. Were disparities in teacher salaries and per pupil operational cost among local school divisions in Virginia lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities in student achievement among localities? If so, to what extent? | Standard 5. AMOUNT OF FINANCING Comparison of average state classroom teacher salary and local classroom teacher salary to achievement. | $X_1, X_2, X_3, X_4, X_5$ $Y_1, Y_2, Y_3$ $Y_{10}$ to $Y_{18}$ (limited analysis) | 1. Graphic display of operational cost, 1972-80. 2. Analysis of State and Regional cost and salary disparities. 3. Correlation analysis of independent and dependent variables.

**TABLE 6**

**ANALYSIS PROCEDURE FOR QUESTION THREE**
## TABLE 7

**ANALYSIS PROCEDURES FOR HYPOTHESIS TWO**

<table>
<thead>
<tr>
<th>Research Hypotheses</th>
<th>SOQ Policy Issued</th>
<th>Variables</th>
<th>Data Collection Procedures Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-2. There is no linear relationship between average locality student achievement in reading, language arts and mathematics as measured by the SRA achievement test and the disparity ratio of average state (VA) per pupil total operational cost to average (school division) per pupil operational cost.</td>
<td>Standard 5. AMOUNT OF FINANCING</td>
<td>( X_1, X_2, X_3, X_4, X_5 ) ( Y_1, Y_2, Y_3 ) ( Y_{10} ) to ( Y_{18} ) (limited analysis)</td>
<td>1. Graphic display or operational cost, 1972-80.</td>
</tr>
<tr>
<td></td>
<td>Total operational cost included to analyze the degree of variance with salary cost due to declining transportation costs as related to achievement disparities among local divisions.</td>
<td></td>
<td>2. Analysis of State operational cost and salary disparities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Correlation analysis of independent and dependent variables.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Analysis of regression equation for relationships between independent and dependent variables.</td>
</tr>
</tbody>
</table>
Q-4. What, if any, relationship existed among the following variables: the amount of change required, the amount of consensus on the need to change, and the percentage of achievement of local five-year plan performance objectives? How was the percentage of achievement of local five-year plan performance objectives related to local SRA achievement scores as reported by the local school division's five-year plans?

<table>
<thead>
<tr>
<th>Standard 2. PLANNING AND MANAGEMENT STANDARDS (Local School Divisions' Five-Year Plans)</th>
<th>Analysis of correlation between independent and dependent variables associated with Q4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_{13}, X_{14}, X_{15}, X_{16}, X_{17},$ and $X_{18}$</td>
<td></td>
</tr>
<tr>
<td>$Y_1, Y_2, Y_3$ to $Y_9$</td>
<td></td>
</tr>
<tr>
<td>$Y_{10}$ to $Y_{18}$ (limited analysis)</td>
<td></td>
</tr>
<tr>
<td>1. Percentage of Change (present level goal) (present level $\times 100%$)</td>
<td></td>
</tr>
<tr>
<td>2. Priority $\quad$ Rating $\quad$ Value of rank given each objective</td>
<td></td>
</tr>
<tr>
<td>3. Present level $\quad$ Goal level $\times 100%$</td>
<td></td>
</tr>
<tr>
<td>4. Period: 1979-80</td>
<td></td>
</tr>
</tbody>
</table>
process contributed to educational achievement. Specifically, five year plans at the division level were analyzed to determine if the planning process was related to achievement as measured by SRA examinations and to define how each element of the planning process contributed to policy implementation.

As was discussed earlier in this chapter, all data were analyzed from the conceptual framework of input, process and output of SOQ policy, as illustrated in Figure 8. The process components were considered to be a part of the independent variables. Further, the independent variables were combined to predict the dependent variables in a regression equation as illustrated below.

Regression Equation

\[ y_1 = a + b_1 x_2 + b_2 x_2 + \ldots + b_n x_n + e \]

<table>
<thead>
<tr>
<th>X factors (independent variables)</th>
<th>(a) Ratio of average state classroom teacher salary/average local classroom teacher salary -- Salary Ratio</th>
<th>(g) Ability (SRA Test) Average for divisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) Ratio of average state per pupil cost/average local per pupil cost -- cost Ratio</td>
<td>(h) Average family income for divisions</td>
<td></td>
</tr>
<tr>
<td>(c) Percentage of SOQ standard -- 1, 3, 4 &amp; 5 Achieved</td>
<td>(i) Percentage of minority students in divisions</td>
<td></td>
</tr>
<tr>
<td>(d) Percentage of change in five-year Plan</td>
<td>(j) Average class size of divisions</td>
<td></td>
</tr>
<tr>
<td>(e) Priority Rating of five-year plan</td>
<td>(k) Average Full Tax valuation of the division</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(l) Enrollment in grades 1-12, divided by 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(m) Square miles in divisions divided by number of students (i.e., density)</td>
<td></td>
</tr>
</tbody>
</table>
SOQ STANDARDS

Standards 1, 3, 4, and 5

PROGRAM PLANNING

Local School Divisions' 5-Year Plan Standard 2

ACHIEVEMENT

As measured by State Standardized Test Scores and Achievement of SOQ Objectives

SOQ Implementation Cycle

Figure 8
The regression equation identified the mathematical formula used to describe or model the input-output process of the conceptual framework. Specifically, stepwise multiple regression analysis was utilized to analyze the relationship between the dependent variables of achievement in reading, mathematics and language arts and the independent variables of input, process and constraint. Because of the similarity of the present study to the Rand studies cited in Chapter II, a linear relationship was assumed for all independent variables. Further, the impact of such independent variables on achievement was examined while controlling for variation in all other independent variables through the application of partial regression coefficients.

Simple correlation was not assumed to indicate causation. The conditions used to validate the causal hypotheses of the conceptual framework were the same as those listed by Mayers and Greenwood and as follows:

(1) Variation in one variable must be associated with variation in the other(s);
(2) The variable which is the presumed cause (in dependent variable), must precede in time the variable which is the presumed effect (dependent variable); and
(3) The effect of the presumed cause was not produced by some third variable.4

Moreover, causal hypotheses were assumed to be valid only in relation to variables that had been controlled as alternative causes. Thus, an hierarchical (stepwise) regression analysis was used to define relationships. The composition of the total variance in the regression equation was examined to identify the effects of independent variable not initially listed in the conceptual work of the present investigation and to specifically identify the degree of impact the policy variables alone had on educational achievement.

The analysis of variables such as administration and leadership characteristics of the local school division, the implementing agents, teaching experience of teachers within local school divisions, the quality of the learning environment within the classrooms of the divisions, and other variables not identified was expected to be represented as residual variance in the regression model not attributable to the independent variables defined by the conceptual framework.

The null hypotheses referred to the probability that some factor was controlled in the research design which operated on the dependent variable in a random manner. Testing of the null hypotheses was performed to investigate the influence of random factors not controlled in the research design. All data were analyzed using the SPSS computer package through stepwise multiple regression.
CHAPTER IV
RESULTS AND FINDINGS

This chapter is divided into three parts. In the first part the degree of achievement of SOQ composite standards in personnel, program and performance objectives was determined from 1972 to 1980. The rate of implementation was analyzed relative to the level of the standard mandated in each biennium. This analysis was completed for all local school divisions existing in Virginia from 1972 to 1980. The purpose here was to determine the results of implementation of SOQ composite standards and to assess what relationship, if any, the level of standards set had on the rate of implementation.

In part two of the chapter the impact of SOQ financial policy, SOQ program standards and environmental inputs were related to student achievement on the State Testing Program during the implementation period for all local school divisions.

Finally, in part three of the chapter, the five year local school division SOQ planning efforts were analyzed to determine the percentage of change required to meet five year objectives, the amount of consensus on the need to change and the percentage of five year plan objectives achieved. The aforementioned elements of the five year plan were further assessed to determine their effects on student achievement as measured by the State Testing Program.

To complete the statistical analysis, all independent variables were correlated with the dependent variables - - achievement in reading, language arts and mathematics. A stepwise regression analysis was performed to indicate the percentage of variance attributable to each independent variable and to formulate
a regression model that would further define the nature of the relationships identified in the conceptual framework.

In summary, the data analysis presented in this chapter provided an assessment of SOQ impact and defined those factors that were crucial to the implementation of SOQ policy. It was assumed that degree of implementation of SOQ policy was a measure of SOQ standards achieved as well as a measure of the influence of SOQ policy on student achievement.

**Question One**

The degree of achievement of composite SOQ standards in Personnel, Program and Performance Objectives was assessed through analysis of the following questions:

- What was the extent of achievement of SOQ standards in personnel and programs by local school divisions from 1972 to 1980?
  a. How did the levels of SOQ standards selected affect implementation?
  b. What was the degree of increase or decrease in personnel and program standards for local school divisions relative to the standards?
  c. To what degree were standards in personnel and programs equalized throughout the State after SOQ implementation?

In order to answer these questions, compliance data related to personnel, program and performance standards were compiled and presented in graph form with major findings summarized for standards 1, 3 and 4.

**Personnel Standards (No. 1)**

Personnel standards mandated by SOQ policy varied each biennium with increases in staff requirements as follows:
1972-74 — **Central Office**

1. A superintendent plus one administrator

2. One administrator of instructional supervision per 50 teaching positions

**School Level**

1. Thirty-three professional per one thousand elementary students in average daily membership

2. Forty-three professionals per one thousand secondary students in average daily membership

1974-76 — **School Level**

1. Forty-eight professionals per one thousand students in average daily membership

2. Class sizes for the first, second and third grades.

<table>
<thead>
<tr>
<th>Year</th>
<th>Teacher/Pupil Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>77-78</td>
<td>1-28</td>
</tr>
<tr>
<td>78-79</td>
<td>1-28</td>
</tr>
<tr>
<td>79-80</td>
<td>1-26</td>
</tr>
<tr>
<td>80-81</td>
<td>1-25</td>
</tr>
<tr>
<td>81-82</td>
<td>1-24</td>
</tr>
</tbody>
</table>

1978-80 — **School Level**

1. Fifty-four professionals per one thousand students in average daily membership for special education and vocational classes

2. Forty-five professionals per one thousand students in average daily membership

3. Class size for first, second and third grade classes

<table>
<thead>
<tr>
<th>Year</th>
<th>Average</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-79</td>
<td>26</td>
<td>31</td>
</tr>
<tr>
<td>79-80</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>80-81</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td>81-82</td>
<td>23</td>
<td>28</td>
</tr>
</tbody>
</table>
In summary, the level of staffing required increased from 38 professionals per 1,000 students in the 1972-74 biennium to 48 professionals per 1,000 students in average daily membership in the 1974-76 biennium and remained at this level until the 1978-80 biennium when it dropped to 45 professionals per 1,000 students. Data reported represented a composite assessment of compliance with all personnel standards for all school divisions per year.

Data on the percentage of compliance with personnel standards were calculated from the yearly "Report of Public Education in Virginia", 1972-80. The cumulated percentage of compliance with the personnel standard requirements was represented as a mean compliance score from year-to-year as reported in Figure 9. Divisions reported in total compliance were coded as 100 percent. Partial compliance was determined by the percentage or the fractional part of the standard with which the division was in compliance. For example, partial compliance with the 1978-80 personnel standards could have ranged from zero to 33 (one out of three standards met) or 66 percent (two out of three standards met). This same procedure was used to calculate percentage compliance for all standards analyzed. An analysis of the data displayed in Figure 9 indicated that most divisions reported total compliance with the personnel standards throughout its implementation. Average compliance varied as follows:

<table>
<thead>
<tr>
<th>Average % of Compliance</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.57</td>
<td>72-74</td>
</tr>
<tr>
<td>97.07</td>
<td>74-76</td>
</tr>
<tr>
<td>97.43</td>
<td>76-78</td>
</tr>
<tr>
<td>97.75</td>
<td>78-79</td>
</tr>
</tbody>
</table>
Mean percentage of compliance of all divisions

Percentage of Implementation
SOQ Personnel Standard

Figure 9
The preceding analysis demonstrates a steady average increase in compliance despite the changing nature of requirements each biennium. All compliance percentages average 90 percent and above, indicating relative ease in complying with SOQ policy.

**Program Standard (No. 3)**

SOQ program standards varied in specifications or requirements throughout the implementation period of 1972 to 1980. The following outline summarizes the changing nature of the standards:

**1972-74 — Six Program Standards Required:**

1. Elementary Schools
2. Secondary Schools
3. Kindergarten
4. Special Education
5. Vocational Education
6. Continuing Education

**1974-76 — Five Program Standards Required:**

1. Accreditation (Composite of 1972-74 Elementary and Secondary Standards
2. Kindergarten
3. Reading and Mathematics Skills Development
4. Special Education
5. Gifted and Talented

**1976-78 — Seven Program Standards Required:**

1. Accreditation
2. Basic Learning Skills
Thus, program standard requirements varied from six in 1972 to eight in 1980; however, the requirements were similar except for the elimination of kindergarten and teacher preparation standards and the additional standards for alternative education and responsible student conduct added in the 1978-80 biennium.

An analysis of Figure 10 indicates that the compliance for all divisions was above the 96 percentile for all years of implementation except 1976, when the mean implementation percentage of the divisions fell to 85 percent.

A significant addition to the standards in 1976 was the Basic Learning Skills requirement which may have accounted for the dramatic change in percentage of compliance and disparity recorded that year. In summary, the mean percentage of
KEY: □ Mean percentage of compliance of all divisions

Percentage of Implementation

SOQ Program Standard

Figure 10
compliance of divisions with program standards did not vary directly with the increase in required standards over the time period of the study. In fact, the addition of program standards had little impact on the percentage of compliance, with the exception of one year, 1976.

Program Objective Standards (No. 4)

As may be recalled from Chapter II, program objective standards were mandated for the total state as well as for each school division of the state. To assure a consistent analysis, data from each school division and not the entire state were analyzed, as was the case with the analysis of the previous two standards. Program standards were required only for the 1972-74 and 1974-76 biennium and were stated in terms of measurable outcomes. It is important to note that assessment of measurable objective outcomes were not required for previously analyzed personnel and program standards. Biennium requirements for program objective standards were as follows:

1972-74 — School Division Requirements

1. High school graduates should increase by at least three percent each year or until a level of 70 percent is reached.

2. The percentage of school population overage in grades K–7 should be reduced by two percent each year until a level not exceeding 20 percent is reached.

3. The percentage of the student population achieving at or above grade level norm should equal or exceed mean ability levels.

4. The percentage of teachers holding advanced degrees should increase by at least two percent each year or until at least 23 percent of the teachers hold such degrees. Work toward advanced degrees should be in the subject area to which the teacher is assigned.

5. The percentage of attendance of pupils should not fall below the average of the last three years or 90 percent of school member.
6. Teachers shall be assigned to teach only those subjects for which they have certification endorsements unless exceptions are granted by the Board of Education.

1974-76 — Four School Divisions Requirements

All standards stated in the aforementioned 1972-74 requirements except numbers two and six.

Figure 11 gives the mean compliance of school divisions of SOQ program objectives from 1972 to 1975. The mean percentage of compliance increased at a steady rate from a low of 88 percent in 1972 to 92 percent in 1975. The rate of increase for compliance with program objectives was much more consistent than that for personnel or programs. It should be noted that two factors may have contributed to the consistent increase in compliance:

1. Objectives were stated in precise measurable terms, thus allowing greater accuracy in reporting percentages of compliance; and

2. Objectives varied little from 1972 to 1975.

A summary of percentage of compliance with all three SOQ standards is presented in Figure 12. Most compliance percentages were 90 percent and above with the lowest percentage report (84.7 percent) for standard one — personnel, in 1972. The average overall compliance rates and the total period of the study was 95.6 percent for standard one, 95.9 percent for standard three and 90.85 percent for standard four. Standard four (Program Objective) had the lowest percentage of compliance, yet implementation increased at a steady rate throughout the period of the standard mandate and disparity range decreased steadily. Standard four, through its precise language, may have supplied the most accurate compliance data.
Mean percentage of compliance of all divisions

Percentage of Implementation

SOQ Program Objectives

Figure 11
Mean percentage of compliance of all divisions with SOQ Standard 1 — Personnel

Mean percentage of compliance of all divisions with SOQ Standard 3 — Programs

Mean percentage of compliance of all divisions with SOQ Standard 4 — Program Objectives

Summary of Compliance

Figure 12
In conclusion, the extent of achievement of mandated standards ranged from 84 to 90 percent. Levels of the standard selected were not found to be directly related to the percentage of compliance.

Questions Two and Three

Questions two and three of the present study related the impact of financial support policy to education in Virginia as measured by student achievement of the State mandated testing program. Further, financial support is indicated through teacher salary means and mean operational costs per pupil.

Were disparities between state and national teacher salaries norms of education lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities between state and national student achievement? If so, to what extent?

Vital to the analysis of the impact of a financial policy on education was the consideration of the effects of inflation. In order to hold the influence of inflation constant throughout the period of the study (1970-1980), all dollar values were calculated using the value of the 1970 dollar as a base (see Appendix B). Thus, all money values in the present study represent true purchasing power relative to 1970 and increases in financial standards are devoid of the accelerating effects of inflation.

Some of the most revealing data were the analysis of teacher salary adjusted to hold inflation constant to 1970 values. As depicted in Figure 13, teachers' salaries consistently decreased in true purchasing power from 1972 to 1979. Although the reported mean dollar value of teacher salaries increased in Virginia during the period of the study, actual purchasing power of their salary declined dramatically during the period of SOQ implementation.
Mean Teacher Salary in Virginia (1971-1979)

1970 Dollars

Figure 13
Figures 14, 15, 16 and 17 illustrate graphic representations of cross-sectional analyses of fourth, sixth, eighth, and eleventh grade raw scores on SRA achievement examinations in reading, mathematics and language arts. The most abundant data available for analysis were at the fourth grade level. In all, representations of SRA test data achievement levels in mathematics, reading and language arts exceeded ability measures in the same order except in the eleventh grade analyses (Figure 17) where mathematics achievement was considerably below ability levels. However, gains in ability and gains in achievement in test areas were not consistent. The rate of gains on test scores exceeded the rate of gains on ability tests. This factor may indicate that although correlation data suggest a strong relationship between ability and test achievement, other factors must have substantially influenced test achievement. Such variables as declining enrollments, teacher salaries, SOQ programs and general interest demonstrated by districts in improving test results must be included as factors that affected achievement scores during SOQ implementation. Generally, all grade levels showed evidence of increases in all achievement areas throughout implementation of SOQ policy. The parallel increases in the language arts and reading data at each grade level indicated a high degree of correlation between the language arts and reading tests within a grade level. Complete data for grades six, eight and eleven were not available, thus, limiting analysis.

Further examination of Figures 14, 15, 16 and 17 indicated that there are differing relationships among language arts, reading and mathematics achievement scores relative to national norms at various grade levels. At the fourth grade level the mean achievement scores in all areas exceeded national norms by 1977. At the sixth and eighth grade levels, none of the achievement data
SRA Test Data Analysis
Ability—Reading—Language Arts—Math — 4th Grade
(Cross-Sectional)
Figure 14
SRA Test Data Analysis

Ability—Reading—Language Arts—Math — 6th Grade

(Cross-Sectional)

Figure 15
SRA Test Data Analysis

Ability-Reading-Language Arts-Math -- 8th Grade

(Cross-Sectional)

Figure 16
SRA Test Data Analysis

Ability-Reading-Language Arts-Math -- 11th Grade

(Cross-Sectional)

Figure 17
exceeded national norms in any year. At the eleventh grade level, all test scores except mathematics exceeded national norms by 1977. In summary, throughout the period of the study test scores generally exceeded ability at all grade levels but did not exceed national norms until the late year of SOQ implementation.

Table 9 gives a summary of the disparity ratios\(^1\) between the mean state teacher salary average in Virginia and average national teacher salary. Also, SRA achievement disparity scores (ratio of state to national) in language arts, mathematics and reading are summarized.

During the period of implementation of SOQ policy, teacher salaries in Virginia decreased relative to national teacher salaries with a constant disparity ratio of .88 reported between the two levels for the last three years of study. Conversely, mean State test scores reached and surpassed national norms on the fourth grade level except in the area of mathematics. Thus, disparities between state and national financial support of education increased after SOQ adoption and disparities between state and national mean student achievement decreased except in the area of mathematics.

From the preceding data one may conclude that teacher salaries did not substantially increase yet test scores exceeded national norms during the implementation of SOQ; thus, student achievement would continue to increase even if teachers' salaries in Virginia continue to lose ground with national salary averages. The reader is cautioned against a conclusion that increases in teacher salaries would not affect student achievement. The process of increasing student

\(^1\) A value of one is considered to have a zero disparity value. Any value less than one is considered to be an increased disparity value relative to zero.
### TABLE 9.
DISPARITY RATIO BETWEEN STATE AND NATIONAL DATA

<table>
<thead>
<tr>
<th>Year</th>
<th>S/SN</th>
<th>SRALA4/N</th>
<th>SRAMA4/N</th>
<th>SRARE4/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>.94</td>
<td>1.1</td>
<td>1.1</td>
<td>1.0</td>
</tr>
<tr>
<td>1973</td>
<td>.92</td>
<td>.87</td>
<td>.81</td>
<td>.89</td>
</tr>
<tr>
<td>1974</td>
<td>.93</td>
<td>.94</td>
<td>.88</td>
<td>.94</td>
</tr>
<tr>
<td>1975</td>
<td>.90</td>
<td>.96</td>
<td>.95</td>
<td>1.2</td>
</tr>
<tr>
<td>1976</td>
<td>.93</td>
<td>.97</td>
<td>.91</td>
<td>1.2</td>
</tr>
<tr>
<td>1977</td>
<td>.88</td>
<td>.99</td>
<td>.98</td>
<td>1.2</td>
</tr>
<tr>
<td>1978</td>
<td>.88</td>
<td>1.0</td>
<td>1.05</td>
<td>1.3</td>
</tr>
<tr>
<td>1979</td>
<td>.88</td>
<td>1.1</td>
<td>1.08</td>
<td>1.3</td>
</tr>
</tbody>
</table>

S/SN — State Average/National Average Salary  
SRALA4/N — Fourth Grade SRA Achievement Scores in Language Arts to National SRALA 4 Norms  
SRAMA4/N — Fourth Grade SRA Achievement Scores in Mathematics to National SRAMA 4 Norms  
SRARE4/N — Fourth Grade SRA Achievement Scores in Reading to National SRARE 4 Norms  

Note: Adequate test data available for analysis at the fourth grade only.
achievement during SOQ implementation is a very complicated one, not readily apparent from Table 9. This process includes a consideration of the effects of SOQ personnel requirement, SOQ expanded program requirement in the areas of remediation and gifted programs, lower enrollments which allowed lower pupil/teacher ratios and the general awareness of school divisions of the importance of increasing test scores as a demonstration of improved student achievement.

In order to further assess the impact of SOQ financial policies among school divisions, state operational costs per ADA are reported across the period of the study. The rate of increase of the total state operational costs per ADA is illustrated by Figure 18. Steady increases are observed throughout the SOQ implementation period. All years reflect cost increases not subject to inflationary influences due to an adjustment to a 1970 dollar base.

The increased operational cost per child observed during SOQ implementation could be attributed to raising operating expenses for transportation, utilities, textbooks and expanded programs demanded by SOQ policy. Yet, teacher salaries which were a substantial part of total operational costs, did not increase in a parallel manner. It should be noted however, that financial support of education appeared to increase dramatically in dollar amounts during SOQ implementation. Yet, adjustments for inflation gave the more realistic view of moderately raising operational costs and declining teaching salaries.
Operational Dollars (1970—1979)
(Virginia) 1970 Dollars

Figure 18
In summary, ability test gains were constant during SOQ implementation. Yet, achievements in test areas were not. When all factors that influenced test achievement were analyzed, the following were of moderate or strong influence: ability, mean family income, percentage of minorities, and density. Operational cost per pupil had neither a substantial positive nor negative impact on student achievement. Of the aforementioned factors influencing test achievement, all increased at a steady rate or remained constant throughout the period of the study except teacher salaries and density. Thus, teacher salaries, density, SOQ policy requirements and other school and non-school factors not previously mentioned could have accounted for the reported change in achievement.

Were disparities in teacher salaries and per pupil operational cost among local school divisions in Virginia lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities in student achievement among localities? If so, to what extent?

The aforementioned questions seek to examine the process of SOQ implementation and to assess the degree to which the SOQ policy promoted equality of opportunity among the local school divisions during its implementation. Specifically, after SOQ implementation, were local school divisions more nearly equal in allocations for teachers' salaries and per pupil operation costs? The findings of the present study indicate that the gap in financial expenditures on education among local school divisions widen after SOQ implementation. Correspondingly, the gap in student achievement also widened after SOQ implementation. If the intent of the State policy was to promote equality among local school divisions that goal was not achieved.
Tables 10, 11 and 12 attest to the differences among school divisions in a pre-1972 and post-1979 sampling of divisions. The school divisions were selected randomly. For each year considered, the ratio of the division norm and State norm represented the total disparity. The difference between the 1972 and 1979 disparities were determined to assess the amount of increase or decrease from State norms among school divisions during SOQ implementation. The total loss in parity between 1972 and 1979 was as follows: .71 for student achievement scores, .91 for teacher salaries and 1.29 for operational cost.

Few school divisions lessened the gap between division norms and State norms. Most school divisions in the sample were decidedly further from equality with other State divisions at the end of the period of the study.

Questions two and three of the present study were proposed to assess the degree of equality provided by implementation of SOQ policy. Findings indicate that student achievement as measured by standardized examinations did reach and surpass national norms. However, State teacher salaries moved further from national norms. Moreover, differences in mean teacher salaries, per pupil operation costs and achievement test scores among local school divisions in the state of Virginia increased after SOQ implementation. SOQ policy may have promoted improved equality in program offerings in Virginia, but, it apparently did not foster equality in financial support of education among the school divisions of Virginia.

Hypotheses One and Two

As presented in Chapter III of the study, the following hypotheses were offered to test the significance of the relationships between the variables of the study:
## TABLE 10

**SALARY DISPARITIES***

<table>
<thead>
<tr>
<th>School Division</th>
<th>1972</th>
<th>1979</th>
<th>(+ Disparity Decreased)</th>
<th>(- Disparity Increased)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Buckingham</td>
<td>.97</td>
<td>.92</td>
<td>- .05</td>
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</tr>
<tr>
<td>2. Charlotte</td>
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<td>3. Dinwiddie</td>
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<td>4. Goochland</td>
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<td>5. Greenville</td>
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<td>7. Petersburg</td>
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<td>- .05</td>
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<td>11. Lancaster</td>
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<td>+ .06</td>
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<td>.97</td>
<td>+ .01</td>
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<td>- .01</td>
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<td></td>
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<td>.90</td>
<td>- .06</td>
<td></td>
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<td>.94</td>
<td>- .02</td>
<td></td>
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</tr>
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<td>1.0</td>
<td>+ .04</td>
<td></td>
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<td>0</td>
<td></td>
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<td>- .03</td>
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</tr>
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</table>

\[
\Sigma = - .91 \\
\mu = - .04
\]

*Division Average/State Average*
TABLE 11
OPERATIONAL COST RATIO

<table>
<thead>
<tr>
<th>School Division</th>
<th>1972</th>
<th>1979</th>
<th>(+ Disparity Decreased)</th>
<th>(- Disparity Increased)</th>
</tr>
</thead>
<tbody>
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<td>1. Buckingham</td>
<td>.93</td>
<td>.88</td>
<td>- .05</td>
<td></td>
</tr>
<tr>
<td>2. Charlotte</td>
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<td>3. Dinwiddie</td>
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<td>1.03</td>
<td>.2</td>
<td></td>
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<tr>
<td>4. Goochland</td>
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<td>5. Greenville</td>
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<td>-.13</td>
<td></td>
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<td>+.41</td>
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<td>+.19</td>
<td></td>
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<tr>
<td>9. Suffolk</td>
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<td>.91</td>
<td>-.19</td>
<td></td>
</tr>
<tr>
<td>10. Gloucester</td>
<td>.93</td>
<td>.89</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>11. Lancaster</td>
<td>.96</td>
<td>.95</td>
<td>-.01</td>
<td></td>
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<td>12. Mathews</td>
<td>.91</td>
<td>.90</td>
<td>-.01</td>
<td></td>
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<td>-.04</td>
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<td>1.1</td>
<td>-.10</td>
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</table>

\[ \frac{\Sigma}{\mu} = -1.29 \]
\[ \mu = .05 \]

*Division Average/State Average
TABLE 12

ACHIEVEMENT DISPARITY — FOURTH GRADE SRA READING TEST

<table>
<thead>
<tr>
<th>School Division</th>
<th>1972</th>
<th>1979</th>
<th>(+ Disparity Decreased)</th>
<th>(- Disparity Increased)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Buckingham</td>
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<td>.81</td>
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<td>2. Charlotte</td>
<td>.90</td>
<td>.86</td>
<td>- .04</td>
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<td>3. Dinwiddie</td>
<td>.82</td>
<td>.90</td>
<td>- .08</td>
<td></td>
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<tr>
<td>4. Goochland</td>
<td>.95</td>
<td>.88</td>
<td>- .07</td>
<td></td>
</tr>
<tr>
<td>5. Greenville</td>
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<td>.86</td>
<td>+ .03</td>
<td></td>
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<td></td>
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<td>1.18</td>
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<td>16. Page</td>
<td>1.06</td>
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<td>- .16</td>
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<tr>
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<td>1.03</td>
<td>- .27</td>
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<tr>
<td>19. Campbell</td>
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<td>20. Buena Vista</td>
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<td>.98</td>
<td>- .12</td>
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<td>21. Patrick</td>
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<td>22. Pitsylvania</td>
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<td>25. Harrisonburg</td>
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</tr>
</tbody>
</table>

\[ \bar{E} = -.71 \]
\[ \bar{\mu} = .03 \]

*Division Average/State Average
H-1. There is no linear relationship between average State (Virginia) student achievement in reading, language arts and mathematics, as measured by the SRA achievement test and the disparity ratio of average national teacher salary cost to average (Virginia) teacher salary cost.

H-2. There is no linear relationship between average locality student achievement in reading, language arts and mathematics, as measured by the SRA achievement test and the disparity ratio of average State (Virginia) per pupil total operational cost to average locality (school divisions in Virginia) per pupil operational cost.

All independent and dependent variables listed in Chapter III were analyzed to determine the mean correlation measures among them for the period of the study (1972-79). Several relationships among the variables were relevant to answering questions two and three as well as hypotheses one, two and three.

The following independent (input) variables were found to have a strong positive relationship ($r \geq .5$):

1. Teacher salary and operational dollars per pupil ($r \geq .5$)
2. Teacher salary and mean family income ($r \geq .5$)
3. Teacher salary and total enrollment of the division ($r \geq .5$)
4. Teacher salary and the tax value of the community property ($r \geq .5$)

Strong negative relationships were observed among the following input variables ($r = -.5$):

1. Operational dollars per pupil and pupil/teacher ratio
2. The percentage of minority families in the division and the SRA ability scores
3. Density and family income

Input variables having moderately strong direct relationships ($r = .4$) were:

1. Operational dollars per pupil and mean family income
2. Teacher salary and SRA ability scores

3. Operational dollars per pupil and the tax value of the community property

Only one relationship was found to be moderately negatively related — that between the independent variables' measures of teacher salary and density ($r = .4$). Further findings indicated that family income had a strong direct relationship with enrollments, SRA ability scores and tax value of community property.

Output variables (dependent) were correlated with input (independent) variables with the following results. SRA achievement scores (output) in reading, language arts and mathematics were found to be directly related to SRA ability scores and mean family income. However, achievement scores were found to be strongly inversely related to the percentage of minority students within the school division. A moderately direct relationship was evident between achievement scores and teacher salary. While a moderately inverse relationship existed between achievement scores and density. Weak ($r \leq .2$) or non-significant correlation measures were found for achievement scores and operational dollars per pupil, enrollment and tax value.

Significant to the study was the absence of any strong correlation relationship between achievement of SOQ standards and the input (dependent) variables of the study. Only the density measure was found to be moderately inversely related to achievement of the SOQ program standard. Only teacher salary and ability scores were found to be moderately directly related to the achievement of performance objective standards. All other input variables were found to be weakly related or non-significantly related to the achievement of the
SOQ standards of personnel programs and program objectives. Also very weak positive correlations ($r = .2$) were observed between achievements of SOQ objectives and SRA test achievement data.

In summary, SRA achievement was related as follows with these significant variables of the study:

<table>
<thead>
<tr>
<th>Variable</th>
<th>$r$</th>
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</thead>
<tbody>
<tr>
<td>Opdollars</td>
<td>$r \approx .2$</td>
</tr>
<tr>
<td>Ability</td>
<td>$r \approx .5$</td>
</tr>
<tr>
<td>Family Income</td>
<td>$r \approx .5$</td>
</tr>
<tr>
<td>Teacher Salary</td>
<td>$r \approx .3$</td>
</tr>
<tr>
<td>Density</td>
<td>$r \approx -.3$</td>
</tr>
<tr>
<td>SOQ program objectives</td>
<td></td>
</tr>
<tr>
<td>SOQ program and programs</td>
<td>$r \approx .2$</td>
</tr>
</tbody>
</table>

Interpretation of the regression equations, used to accept or reject the null hypotheses, must be done in relationship to the correlation analysis previously presented. Any regression equations proposed must be viewed in terms of the high intercorrelation measures between operational dollars per pupil and teacher salary. In fact, teacher salary is accounted for within the value of operational cost. Also, important is the high degree of commingling of variable values of teacher salary with mean family income and tax value of the community. Any interpretation of regression equations must also take into account the strong negative relation between the percentage of minority and the SRA ability scores and achievement scores. Significant to the understanding of the regression model proposed to test the hypotheses of the study is the strong commingling relationship of mean family income to enrollment, and tax value to community property. Further, SRA ability scores may be only a relative measure of reading ability as reading achievement is highly correlated with ability and mean family income. In summary, in testing the hypotheses of the study one must take into account the fact that SOQ policy was influenced by other school and environment factors before SOQ policy impact on achievement could be properly assessed.
In the assessment of the relationship of the input and output factors, the following statistical information is given:

\[ R^2 = \text{the squared multiple correlation coefficient representing the total explained variance of outputs by the specified inputs.} \]

Intercept = the expected value of the criterion of all input terms in the regression are equal to zero.

\[ F \text{ value} = \text{a statistic to test whether the square of the multiple correlation coefficient is equal to zero.} \]

Inputs = the selected set of "X" predictors from a larger set of "X" predictors.

Input Order = indicates at what step in the stepwise regression procedures the inputs entered the model analysis.

\[ R^2m = \text{equals the increase in the multiple correlation coefficient as inputs are added.} \]

\[ b = \text{the partial regression coefficient.} \]

Using the values defined above, regression models were produced using a cross-sectional analysis for the fourth grade language arts, reading and mathematics from 1972 to 1979. The results of the stepwise generation are given in Tables 13, 14 and 15. Criterion variables were analyzed separately with the predictor variables \( X_1, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11} \) and \( X_{12} \) selected for entrance into the model one by one. The predicted variable most highly correlated with the criterion was entered first. Then a predictor variable was added which in combination with the one "in the model," yielded the highest \( R^2 \). The process continued until all variables were entered that could significantly increase \( R^2 \). Regression models illustrated a 43 percent of variance in language arts achievement, a 67 percent of variance of achievement in reading and a 59 percent of the variance in mathematics, respectively.
Further, the regression models described in Tables 13, 14 and 15 supported the rejection of null hypotheses one and two and suggest that there is a relatively strong relationship between reading, language arts and the disparity ratio between national average teacher salary and average Virginia teacher salary and operation cost during the period of the study. The influence of the salary variable on achievement as depicted in the regression model is interpreted with caution due to strong associations between per pupil operation cost, family income, enrollment and the salary variable. However, the influence of the salary criterion variable acting alone was considered substantial enough to assume a relation between salary and achievement, thus supporting the rejection of the null hypothesis.

The variables accounting for the greatest degree of variance (16 percent to 58 percent) in predicting achievement in the regression models (Tables 13, 14 and 15) of mathematics, language and reading were ability and average family income, both environmental non-school factors.

Policy factors -- operational costs, salary and pupil/teacher ratio -- accounted collectively for 13 percent of the variance in the language arts and reading achievement models and 9 percent of the variance in the mathematics achievement model. In contrast, environmental -- non-school factors -- collectively accounted for 30 percent in language arts, 53 percent in reading and 50 percent in mathematics achievement models, respectively. The strong influence of the environmental factors resulting from the data analysis of the present study agrees with research previously cited (Benson, Coleman, Raymond and others) on the strong influence of environment factors on student achievement. In each of the achievement models defined, the pupil/teacher ratio policy variable accounted the greatest single percentage of variance (6 percent to
TABLE 13
FOURTH GRADE LANGUAGE ARTS ACHIEVEMENT REGRESSION MODEL

Output = Language Arts Achievement  \( R^2 = .4315 \)

<table>
<thead>
<tr>
<th>Input</th>
<th>Input Order</th>
<th>( R^2_m )</th>
<th>( F^* )</th>
<th>b</th>
</tr>
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<td>209.16</td>
<td>.304</td>
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</tr>
<tr>
<td>X_{5}</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSITY</td>
<td>7</td>
<td>.4315</td>
<td>110.31</td>
<td>4.773</td>
</tr>
<tr>
<td>X_{9}</td>
<td></td>
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</tbody>
</table>

*All values significant at least at the .05 level.
TABLE 14
FOURTH GRADE READING ACHIEVEMENT REGRESSION MODEL

<table>
<thead>
<tr>
<th>Input</th>
<th>Input Order</th>
<th>$R^2_m$</th>
<th>$F^*$</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCOME $X_{12}$</td>
<td>1</td>
<td>.3332</td>
<td>511.37</td>
<td>0.0001</td>
</tr>
<tr>
<td>MINORITY $X_7$</td>
<td>2</td>
<td>.4538</td>
<td>424.69</td>
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</tr>
<tr>
<td>SRAAB4 $X_{10}$</td>
<td>3</td>
<td>.5209</td>
<td>370.07</td>
<td>0.0232</td>
</tr>
<tr>
<td>PTRATIO $X_6$</td>
<td>4</td>
<td>.6185</td>
<td>413.55</td>
<td>-1.099</td>
</tr>
<tr>
<td>OPRATIO $X_1$</td>
<td>5</td>
<td>.6474</td>
<td>374.24</td>
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<tr>
<td>SNRATIO $X_{10}$</td>
<td>6</td>
<td>.6582</td>
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<td>12.92</td>
</tr>
<tr>
<td>DENSITY $X_9$</td>
<td>7</td>
<td>.6610</td>
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<td>2.808</td>
</tr>
<tr>
<td>ENROLL $X_8$</td>
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<td>.6633</td>
<td>250.24</td>
<td>-0.012</td>
</tr>
<tr>
<td>TAXVAL $X_{11}$</td>
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<td>.6721</td>
<td>231.17</td>
<td>.000002</td>
</tr>
</tbody>
</table>

*All values significant at least at the .05 level.
TABLE 15
FOURTH GRADE MATHEMATICS ACHIEVEMENT REGRESSION MODEL

Output = Mathematics Achievement

<table>
<thead>
<tr>
<th>Input</th>
<th>Input Order</th>
<th>$R^2_m$</th>
<th>F*</th>
<th>b</th>
</tr>
</thead>
<tbody>
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<td>.4508</td>
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<td>0.0006</td>
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<td>$X_{12}$</td>
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<td>$X_7$</td>
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<td>7.214</td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>$X_6$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPRATIO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNRATIO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_{10}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*All values significant at least at the .05 level.
9 percent) among the policy variables. The lower pupil/teacher ratio reported by Virginia's school divisions from 1972 to 1980 were probably associated with decline in enrollments experienced during this period. In conclusion, a review of the significant beta values in the regression models supports the acceptance of both null hypothesis one and two.

**Question Four**

What, if any, relationship existed among the following variables: the amount of change required, the amount of consensus on the need to change, and the percentage of local five year plan performance objectives? How was the percentage of achievement of local SRA achievement scores related to local school division's five year plans?

Instrumental to the analysis of the aforementioned question is an assessment of the relationships involved in the planning process mandated by SOQ policy. Each school division thus assessed its own needs as related to State mandated standards. The six-year planning process allowed each division to prioritize needs and plan individualized objectives to meet established standards. For SOQ standards one, three and four, the percentage of change required to meet standards, performance level set by the division, and the priority rating established for the objectives were assessed. Further, five year plan objectives were related to achievement on SRA examinations.

Five year planning data were not available from the State Department of Education records for any year except 1979. Assessment of the degree of five year objectives met was determined by an analysis of 1980 updates of six year plans for all school divisions. Thus, all factors relative to the planning process were reported and analyzed from 1979 data and updated with 1980 data. The 1979
data represented the end of the first five-year planning cycle initiated in 1974 and the beginning of the next six-year planning cycle.

The correlation coefficient among the percentage of change variables associated with the planning process was strong ($r \geq .5$) and directly related, suggesting some multicollinearity. However, no significant relationship of association could be determined among the following variables: the amount of change, the amount of consensus on the need to change and the percentage of achievement of five-year planning objectives.

A difficulty in assessing question four is the ambiguity of objectives submitted from the 137 school divisions for five-year plans. Few measurable objectives were generated to direct improvement in student achievement, thus making it most difficult to determine outcomes and also resulting in a mass of missing data. Also, limiting to this analysis was the availability of only two years of data, thus restricting analysis to a 1979 timeframe for objectives and a 1980 timeframe for outcomes.

It appears that the SOQ planning process did emphasize the need for improvement and apparently stimulated some improvements in SRA test achievement. Generally, the higher priorities set by school divisions resulted in greater achievement of SOQ goals, as illustrated by Table 16. For example, PRILA (1.67) and PRIMA (2.01) resulted in an achievement rate of 104.7 percent and 105.94 percent, respectively. From the statistics presented in Table 14, it appears that the five year planning process did promote achievement of SOQ objectives. However, the priorities set by divisions seemed to be more influential than the amount of change need to reach the defined objectives.
### TABLE 16

FIVE-YEAR PLANNING PROCESS (1979)

<table>
<thead>
<tr>
<th>Percentage of Change Required by:</th>
<th>STATE*/Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Arts</td>
<td>49.55</td>
</tr>
<tr>
<td>Mathematics</td>
<td>37.20</td>
</tr>
<tr>
<td>Reading</td>
<td>36.96</td>
</tr>
<tr>
<td>Priority Given to Objectives in</td>
<td></td>
</tr>
<tr>
<td>(consensus to change)</td>
<td></td>
</tr>
<tr>
<td>Language Arts</td>
<td>1.67</td>
</tr>
<tr>
<td>Mathematics</td>
<td>2.01</td>
</tr>
<tr>
<td>Reading</td>
<td>2.52</td>
</tr>
<tr>
<td>Percentage of Achievement of Objectives in</td>
<td></td>
</tr>
<tr>
<td>Language Arts</td>
<td>104.70</td>
</tr>
<tr>
<td>Mathematics</td>
<td>105.94</td>
</tr>
<tr>
<td>Reading</td>
<td>98.53</td>
</tr>
</tbody>
</table>

*Represents the mean for 137 local school divisions
Summary

This chapter reported the degree of achievement of SOQ policy by an analysis of the percentage of compliance with standards as well as the degree of disparity of compliance among local school divisions from 1972 to 1980. In summary, the analysis indicated that the percentage of compliance with standards for most school divisions remained above the 90 percentile.

Research data indicated that most school divisions were in compliance with SOQ standards, yet the difference in compliance percentages among divisions was substantial. High percentages of compliance were reported despite increased requirements of the standards. In fact, increased standard requirements apparently did not affect compliance percentages.

SOQ financial policies were reviewed relative to student achievement as reflected by SRA examination results. During the period of the study, actual buying power of teacher salaries reflected a sharp downward trend, while operational cost per pupil based on 1970 CPI increased sharply.

All achievement test scores exceeded ability at the fourth, sixth and eighth grade levels. The cross-section analysis for the eleventh grade showed that scores exceeded ability for reading and language arts, but not for mathematics. Mean State test scores exceeded national norms for language arts and reading test areas in the fourth grade after 1977 and for the eleventh grade reading and language arts in 1977, but State mean test results did not exceed national norms at the sixth and eighth grade levels in any areas.

Null hypotheses one and two were rejected. Linear relationships among language arts, mathematics and reading achievement and SOQ State and national salary differences and operation costs were assumed.
Consistent with the findings from previous studies, non-school factors such as the percentage of minorities in the community, mean family income and student ability had the greatest influence on test achievement; yet SOQ financial policy variables did contribute significantly to the increased achievement. However, SOQ personnel and program standards did serve to foster equality in programs and personnel among the school divisions of Virginia, thus fostering equal opportunities for acquiring education.
CHAPTER V

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This investigation was designed to study the following questions:

1. What was the extent of achievement of SOQ standards in personnel and programs by local school divisions from 1974 to 1980?
   a. How did the levels of SOQ standards selected affect implementation?
   b. What was the degree of increase or decrease in personnel and program standards for local school divisions relative to the standards?
   c. To what degree were standards in personnel and programs equalized throughout the State after SOQ implementation?

2. Were disparities between state and national teacher salaries norms lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities between state and national student achievement? If so, to what extent?

3. Were disparities in teacher salaries and per pupil operation cost among local school divisions in Virginia lessened after SOQ adoption? If so, to what extent? Was there a proportional lessening of disparities in student achievement among localities? If so, to what extent?

4. What, if any, relationship existed among the following variables: the amount of change required, the amount of consensus on the need to change, and the percentage of achievement of local five year plan performance objectives? How was the percentage of achievement of local five year plan performance objectives related to local SRA achievement scores as reported by the local school division's five year plans?

An input-output conceptual framework was developed specifically to answer these questions and to investigate the implementation process of an educational policy at the State level. Input from policy SOQ program and personnel standards, financial policy standards and mandated planning process were related to education outcomes in terms of educational achievement on the state mandated
standardized examinations. The ultimate objective was to determine what effect, if any, implementation of SOQ had on improving quality of education in Virginia, where improved quality of education was defined as lessening of financial disparities among school divisions and improved achievement on standardized examinations.

**Conclusions**

The implementation process demonstrated that SOQ policy factors were influential in determining quality of education; however, environmental inputs were found to be more influential. Specifically, the following conclusions were drawn. Consistent with the findings of other research studies cited, the present study concludes that:

1. The percentages of compliance with SOQ personnel and program standards ranged from 80 to 90 percent during the period of the study which indicates a relatively high percentage of conformity to the mandates. Percentages of compliance, however, did not vary as standard requirements increased. This may indicate that original standard levels might have been set too low and thus, allow most divisions to easily comply with the standards. Also, there was no evidence that newly established standard levels were based on an assessment of the degree of previous compliance.

2. Test scores did improve substantially over the period of implementation of SOQ policy. Fourth grade scores in reading and language arts exceeded national norm after 1977. There was some justification from research findings that SOQ policy contributed to improved achievement, but non-school factors such as percentage of minorities in the community, mean family income and student ability were found to have the greatest impact on student achievement. However, SOQ policy factors -- operation costs, salary and pupil/teacher ratio -- accounted collectively for 13 percent of the variance in the regression model assessing impacts on student achievement.

3. Implementation of SOQ policy did not promote equality in teacher salaries, operation cost per pupil and student achievement among local school divisions in Virginia.
4. Most school divisions’ five year plans did not include measurable objectives for assessing improvement in education, thus restricting the measurement of implementation of this important planning process. The planning process was found to be an important factor in the policy implementing cycle in that it allowed local school divisions to prioritize and develop a specific plan of action from broad based SOQ mandates. However, the planning process was not identified as being highly or moderately correlated with student achievement.

Implications

1. As expected, non-school factors greatly impacted student achievement. To be effective, SOQ policy needs to be restructured to examine the socio-economic need of the school divisions of Virginia. Current funding practices need to be analyzed to assess the possibility of closing achievement gaps among school divisions resulting from socio-economic differences if equality of educational opportunities for all students in Virginia is the intent of SOQ policy.

2. While SOQ per pupil expenditures had an overall positive effect on student achievement, the positive impact was not equally demonstrated among all local school divisions in Virginia. There are a variety of means available, if incorporated into the SOQ funding formula that would render a more equitable state aid program.

3. An assessment of the specific factors for compliance or noncompliance with SOQ standards for each local school division is needed before new levels of compliances are established. A simple yes or no report to a compliance requirement from a local school division does not provide sufficient data to set new levels for SOQ standards each biennium. Thus, enforcement of compliance standards is extremely weak due to lack of rigorous requirements for compliance reports.

4. While it is difficult to assess the impact on achievement of SOQ program and personnel standards, they were found to be a major impact in the policy implementation process. If the true impact of these requirements is to be assessed, they must be presented in terms of some measurable factors of student achievement.

5. While the general elements of the Van Horn/Van Meter models were substantiated by the research finding, the following difficulties were reported:
a. Causal relationships were difficult, if not impossible to assume. More research is needed on each element of the model in order to assess the relative directions among the elements of the model, specifically in the areas of communication, enforcement, characteristics of the implementing agencies and political condition. All of the aforementioned areas are difficult to quantify and to determine if the causal relationship exist.

b. There is great difficulty in assessing the complicated process of how feedback from policy implementation affects the establishment of new policies.

**Recommendations**

The following recommendations are offered as a result of the findings of the study:

1. There is a need to compare on-site SOQ study data with test achievement data for each division when on-site SOQ reviews have been completed for a substantial number of divisions.

2. There is a need to continue to review the process of implementation of SOQ policy at the individual school, school division levels and at the State level.

3. Enforcement of SOQ policy was demonstrated through reports from school divisions. Divisions consistently reported as being deficient should be required to submit follow-up reports to assure improvements.

4. Newly established standard levels should be based on achievement percentages of past standards in order to assure that new standards are set high enough to promote improvement.

5. Consistent State tests should be administered at various grade levels that will allow for both longitudinal and cross-sectional comparison of achievement data relative to SOQ policy.

6. The five year planning process should be more structured by the State, allowing some prioritizing of goals but defining some measurable objectives for the plans. Otherwise, it is difficult, if not impossible, to measure the effectiveness of the planning process.

7. SOQ financial policy should be directed toward a study of lessening disparities and also investigating the need for even greater financial investment in a division when certain negative
non-school factors are characteristic for that division such as high percentage of minorities and low mean family incomes. These characteristics are usually found in urban areas which may need financial support that exceed State norms in order that achievement scores meet state and national norms.

8. SOQ program standards should require more specific reporting requirements to measure performance. This will allow each division to note specific changes by submitting data for the next report that shows improvement or retrogression from the previously reported levels.

From the findings of the present study, there are several new research questions initiated. There is a need to further investigate and refine the policy implementation process to assess its causal nature. Certainly this study only presented explanations for a small part of the policy implementation process for a state educational policy. If the intent of SOQ policy was the equalization of educational policy throughout Virginia, it must be judged to have been effective in getting localities to meet specific program and personnel standards. Yet, it fell far short of demonstrating an impact on acquiring equal opportunities for quality education for the students of Virginia.
BIBLIOGRAPHY


Cubberly, E. P. School Funds and Their Apportionment. New York: Columbia Teacher College, 1905.


United States Constitution. Tenth Amendment.


APPENDIX A

STANDARDS OF QUALITY AND OBJECTIVES

FOR PUBLIC SCHOOLS IN VIRGINIA

1972–74

1974–76

1976–78

1978–80
Standards of Quality and Objectives for
Public Schools in Virginia
1972-74

Enacted by the General Assembly of Virginia, 1972
INTRODUCTION

As required by the new Constitution of Virginia, Standard of Quality for public schools were adopted by the State Board Education in August 1971 and were revised and enacted by the General Assembly for the biennium beginning July 1, 1972. Standards were established for personnel, instructional materials (including educational television), program, and systemwide planning and management. In addition, the General Assembly enacted performance objectives for the State and for school divisions and planning and management objectives for public schools and teachers. The State Board was directed by the General Assembly to adopt rules and regulations necessary to implement the objectives.

The Standards of Quality and Objectives for Public Schools in Virginia provide new impetus for improving public education. They are a clear statement of the goals we seek and the procedures necessary for obtaining them. They offer new opportunities for the State Department of Education and local school divisions to work together to improve the quality of public education in Virginia.

The standards and objectives are designed to help each child to develop as fully as possible in the following ways:

* To acquire competence in using the fundamental learning skills and to acquire basic knowledge needed for participation in today's society;
* To acquire skills and knowledge needed for education beyond high school or for employment;
* To acquire a sense of personal worth and dignity;
* To develop attitudes and values that lead to responsible participation as a citizen of our republic;
* To develop understanding of one's relationship to his ecological, physical, economic, and social environment;
* To understand and appreciate people of different nationalities and ethnic groups and their contributions to the development of our nation and culture;

* To develop personal habits for continuing physical and mental health;

* To appreciate beauty and to understand its contribution to daily life.

The standards and objectives will be reviewed every two years to keep pace with changing expectations and conditions affecting education, new knowledge in the science and processes of education, and improved methods of evaluating educational quality.

Woodrow W. Wilkerson
Superintendent of Public Instruction
STANDARDS OF QUALITY AND OBJECTIVES
FOR PUBLIC SCHOOLS IN VIRGINIA

ENACTED BY THE
GENERAL ASSEMBLY OF VIRGINIA, 1972

Whereas, Section 2 of Article VIII of the Constitution of Virginia provides that standards of quality for the several school divisions shall be determined and prescribed from time to time by the Board of Education, subject to revision only by the General Assembly; and

Whereas, such Board has published such standards and it is now the wish of the General Assembly that such standards be hereby revised; now, therefore

Be it enacted by the General Assembly of Virginia:

1. That the standards of quality for public schools in Virginia, as determined and prescribed by the Board of Education, are revised as follows:

   Personnel Standards

1. Central Office

   a. In addition to the superintendent, each school division shall provide for one State-aid administrative position, subject to the rules and regulations of the Board of Education.

   b. Each school division shall have one additional State-aid professional position for every fifty State-aid teaching positions or major fraction thereof. Such positions shall be limited to instructional supervisors, including supervisor of special education, and visiting teachers.

2. Schools

   a. There shall be one State-aid elementary school teaching position for every thirty pupils in average daily membership and one State-aid secondary school teaching position for every twenty-three pupils in average daily membership.

   b. There shall be additional State-aid positions that are required to meet school accrediting standards, including principals, assistant principals, librarians, and guidance counselors.
The foregoing standards are further revised as follows: They shall constitute standards of quality for, and have force and effect in, each school division only to an extent proportionate to the funding therefor provided by the General Assembly.

Instructional Materials and/or Educational Television Standards

The annual expenditure for library and supplementary materials and/or educational television shall amount to at least five dollars per pupil in average daily membership, and each school division shall supply from local funds or other available resources the difference between the amount allocated to each school division by the Board of Education and the amount herein required.

Program Standards

1. Elementary Schools

Each school division that has one or more elementary schools unaccredited or accredited with a warning by the Board of Education shall develop by September one of the ensuing school year a plan for each such school to meet the accrediting standards, and shall state a date acceptable to the Board for meeting those standards.

2. Secondary Schools

Each school division that has one or more secondary schools unaccredited or accredited with a warning by the Board of Education shall develop by September one of the ensuing school year a plan for each such school to meet the accrediting standards, and shall state a date acceptable to the Board for meeting those standards.

3. Kindergarten

Each school division that does not provide a kindergarten program shall by the end of the 1972-74 biennium develop a plan to provide such a program, and shall state in the plan a date acceptable to the Board of Education on which the kindergarten program will be implemented.

4. Special Education

Each school division shall identify exceptional children, including the gifted, by use of diagnostic procedures and shall develop a plan acceptable to the Board of Education to provide appropriate educational opportunities for them. Such opportunities may be provided through local programs, regional
cooperative programs, or tuition assistance for handicapped children where no
public school program is available.

5. Vocational Education

Each school division shall provide, either within the division or on a
regional basis, training for employment by students planning to enter the
world of work, or it shall develop a plan acceptable to the Board of Education
by June thirty, nineteen hundred seventy-three to provide such training.

6. Continuing Education

Each school division that does not provide a program of adult education
either within the division or on a regional basis shall develop a plan
acceptable to the Board of Education by June thirty, nineteen hundred
seventy-four to provide such a program.

Planning and Management Standards

1. The School Board shall adopt policies which guide the total operation of the
   school division toward established objectives.

2. The superintendent shall prepare a policy manual in cooperation with school
division personnel.

3. The superintendent shall develop the capability, procedures, and
organizational structure to enable the school division to plan for future needs.

4. The superintendent shall involve the community and his staff in the
   preparation of a five-year plan, which shall be updated annually. Such a plan
   shall be based on a study of the extent to which pupils are achieving the eight
broad objectives formulated by the Board of Education and shall be designed
to raise the level of pupil performance. This plan shall be reviewed and
approved by the School Board and submitted to the State Superintendent of
Public Instruction for approval by the Board of Education.

5. The superintendent shall prepare and present to the School Board an annual
   plan to achieve specific objectives of the approved five-year plan as part of
the annual operating and capital outlay budgets.

6. The superintendent shall, as directed by the Board of Education, make annual
   follow-up studies of former students (dropouts and graduates) who enter
employment or who continue their education beyond high school as a means of
assessing the effectiveness of the school program.

7. The superintendent and his staff shall provide an effective program of
   instructional supervision and assistance to principals and teachers that is
consistent with the objectives of the school division.
8. The superintendent and his staff shall provide for the cooperative evaluation of central office personnel and principals shall provide assistance to principals in the cooperative evaluation of teachers and other school employees.

The standards of quality prescribed above, as herein revised, and made effective, shall along be the only standards of quality required by Article VIII, Section 2, of the Constitution of Virginia.

2. In addition to the standards of quality revised, and made effective as prescribed above, the State and Local school divisions shall undertake to achieve the objectives set out below. Annual reports will be prepared by the Board of Education to show the progress being made throughout the State to meet these objectives. The Board of Education is directed and shall have the authority to promulgate rules and regulations necessary to implement these objectives.

Performance Objectives

State

1. A number of pupils equal to at least seventy percent of the pupils who entered the first grade twelve years earlier should be graduated from high school.

2. The percentage of the school population overage in the elementary grades should not exceed twenty percent of the enrollment in grade K-7.

3. The percentage of the student population achieving at or above grade level norms or the equivalent as measured by approved standardized achievement tests should equal or exceed the mean ability level of the student population as measured by appropriate scholastic aptitude tests.

4. At least thirty-one thousand, seven hundred fifty five-year-old children in the State should be enrolled in kindergarten.

5. At least one hundred thirty thousand pupils should be enrolled in summer programs.

6. At least fifty thousand eligible children should be enrolled in special education programs.

7. At least one hundred thirty-five thousand adults should be enrolled in continuing education programs.
8. At least seventy percent of the high school graduates should continue their education in programs provided by colleges and by schools such as business, nursing, data processing, and trade and technical.

9. At least ninety percent of the teachers should be assigned to teach only those subjects for which they have certificate endorsements.

10. At least twenty-three percent of the teachers should hold advanced degrees.

School Division

1. High school graduates expressed as a percent of the first grade enrollment twelve years earlier should increase by at least three percent each year or until a level of seventy percent is reached. Appropriate adjustments will be made for school divisions with significant increases or decreases in school population.

2. The percentage of the school population overage in grades K-7 should be reduced by at least two percent each year or until a level not exceeding twenty percent is reached.

3. The percentage of the student population achieving at or above grade level norms or the equivalent as measured by approved standardized achievement tests should equal or exceed the mean ability level of the student population as measured by appropriate scholastic aptitude tests.

4. The percentage of teachers holding advanced degrees should increase by at least two percent each year or until at least twenty-three percent of the teachers hold such a degree. Work toward advanced degrees should be in the subject area to which the teacher is assigned.

5. The percentage of attendance of pupils shall not fall below the average of the last three years or ninety percent of school membership.

6. Teachers shall be assigned to teach only those subjects for which they have certificate endorsements unless exceptions are granted by the Board of Education.

Planning and Management Objectives

1. Individual School Planning and Management (Principal and Staff)

   In accordance with local policies and regulations, the principal shall be responsible for discharging the following major duties:

   a. The principal shall involve the community with his staff in the preparation and implementation of an annual school plan, which shall be consistent with the division-wide plan and which shall be approved by the division superintendent.
b. The principal shall develop a school handbook of policies and procedures which are in compliance with which implement division policies.

c. The principal shall coordinate the services of all persons who work in the school to provide a healthful, stimulating school environment and an efficient and effective operation.

d. The principal shall assign pupils to classes, programs, and activities that are designed to promote maximum learning. All pupils whose achievement is below a level commensurate with their scholastic aptitude should be diagnosed for learning disabilities and appropriate instruction should be prescribed.

e. The principal shall ensure that instructional materials and equipment are used to provide learning experiences that are compatible with the educational needs of pupils.

f. The principal and his staff shall establish methods of evaluating the progress of individual students and the effectiveness of the instructional program in each classroom and in the school as a whole.

g. The principal shall provide direct instructional supervision and assistance to teachers to help them meet the standards for classroom planning and management and shall utilize available supervisory and other consultant personnel as needed to ensure an effective instructional program in the school.

h. The principal and his staff shall provide for the cooperative evaluation of the teachers and other employees in his school. The evaluation of teachers shall be based on the standards for Classroom Planning and Management.

2. Classroom Planning and Management (Teacher)

In accordance with local policies and regulations, the teacher shall be responsible for discharging the following major duties:

a. The teacher shall provide for the humanizing of instruction in the classroom. To accomplish this, the teacher should:

   (i) Know the academic strengths and weaknesses of each child;
   (ii) Know the home and community environment of each child;
   (iii) Treat each child as an individual in accordance with his needs;
   (iv) Understand and appreciate each child as an individual of worth; and
   (v) Help each child to recognize his potential, to develop his abilities, and to assume his responsibilities as a member of the group.
b. The teacher shall provide for individual differences in the classroom. To accomplish this, the teacher should:

(i) Provide different subject matter and learning experiences and have different achievement standards for individuals with different abilities and/or past achievements; and

(ii) Provide opportunities for pupils to work independently on meaningful tasks that derive from and contribute to the planned activities of the group.

c. The teacher shall make use of available instructional materials and other resources that are appropriate to the needs of the pupils. To accomplish this, the teacher should supplement the textbook and make appropriate use of:

(i) Additional reading materials, such as library books and reference materials, magazines, and newspapers;
(ii) Educational television and other audio-visual aids;
(iii) Demonstrations, dramatizations, and other classroom activities;
(iv) Field trips;
(v) Resource persons and school-related youth organizations; and
(vi) Individual and group projects, in or out of school.

d. The teacher shall organize learning activities to achieve specific objectives which should include:

(i) The development of needed skills;
(ii) The understanding of specific concepts;
(iii) The solution of meaningful problems; and
(iv) The development of wholesome attitudes.
Standards of Quality and Objectives
for
Public Schools in Virginia
1974–76

Enacted by the General Assembly of Virginia, 1974
FOREWORD

Standards of Quality for the 1974-76 biennium were adopted by the Board of Education on July 20, 1973 and enacted, with some revisions, by the 1974 General Assembly. These nine standards as set forth in this brochure represent a consolidation, refinement, and upgrading of the standards in effect for the 1972-74 biennium. They support the broad goals of Virginia's public school system and reinforce the basic program of school improvement begun on a statewide basis in 1972.

The objectives for the 1974-76 biennium represent a revision of current objectives and the addition of several new items. It is urgent that the "know how" of the public school personnel and available financial support be marshaled and utilized in such a way as to achieve these objectives to the maximum extent possible.

The Board of Education's annual report to the Governor and General Assembly will include, among other items, any school division and any school therein failing to meet one or more of the standards of quality and will show progress made in achieving the specified objectives.

Woodrow W. Wilkerson
Superintendent of Public Instruction
Whereas, Section 2 of Article VIII of the Constitution of Virginia provides that standards of quality for the several school divisions shall be determined and prescribed from time to time by the Board of Education, subject to revision only by the General Assembly; and

Whereas, such Board has published such standards and it is now the wish of the General Assembly that such standards are hereby revised; now, therefore

Be it enacted by the General Assembly of Virginia:

1. That the standards of quality for public school in Virginia, as determined and prescribed by the Board of Education, and effective July one, nineteen hundred seventy-four, are revised as follows:

1. PERSONNEL.

Each school division shall employ with State basic and local funds at least forty-eight professional instructional personnel for each one thousand students in average daily membership.

2. SPECIAL EDUCATION.

Each school division shall provide a program of special education for handicapped children that is acceptable to the Board of Education.

3. GIFTED AND TALENTED.

Each school division shall provide special services acceptable to the Board of Education designed to enrich the educational experiences of gifted and talented students.

4. VOCATIONAL EDUCATION.

Each school division shall provide vocational education for all students planning to enter the world of work or make progress acceptable to the Board of Education toward achieving the plan submitted to the Board of Education on June thirty, nineteen hundred seventy-three.

5. VOCATIONAL EDUCATION.

Each school division shall provide a supplementary program in reading and mathematics skills development for low-achieving students in grades K-6 acceptable to the Board of Education.
6. KINDERGARTEN.

Each school division shall provide kindergarten education for all eligible children whose parents wish them enrolled or be prepared to offer this program by September, nineteen hundred seventy-six.

7. ACCREDITATION

Each school division shall develop by July one of the ensuing school year an acceptable plan to meeting accrediting standards for any school that is unaccredited or accredited with a warning by the Board of Education.

8. FIVE-YEAR SCHOOL IMPROVEMENT PLAN.

Each school division shall involve the staff and community in revising and extending annually the five-year school improvement plan to be submitted to and approved by the Board of Education on July one, nineteen hundred seventy-four. This plan shall include:

a. The objectives of the school division stated in terms of student performance;

b. An assessment of the extent to which the objectives are being achieved, including the follow-up studies of former students; and

c. Strategies for achieving the objectives of the school division, including an organized program for staff improvement.

9. POLICY MANUAL.

Each school division shall maintain an up-to-date policy manual which shall include:

a. The grievance procedure prescribed by the Board of Education;

b. A system of communication between the local school board and its employees in order that views of all school employees may be received in an orderly and constructive manner in matters of concern to them; and

   c. A cooperatively developed procedure for personnel evaluation.

2. The standards of quality prescribed above shall be the only standards of quality required by Section 2 of Article VIII of the Constitution of Virginia.

3. School divisions providing programs and services, as provided in paragraphs 2 through 9 of 1 herein, with State basic and local funds may be required to provide such services and programs only to an

OBJECTIVES

Whereas, the State Board of Education has set standards of quality for public schools in Virginia; and

Whereas the General Assembly has revised these standards of quality; and

Whereas it is desirable to designate certain objectives for State and local school divisions to achieve; now, therefore, be it

Resolved by the House of Delegates, the Senate concurring. That the State and local school divisions shall undertake to achieve the following objectives:

PERFORMANCE OBJECTIVES

STATE

1. The average achievement level of the student population in reading and mathematics by standardized achievement tests should equal or exceed the average ability level of the student population as measured by scholastic aptitude tests.

2. By June 1976 at least ninety percent of high school graduates not continuing formal education should have a job entry skill;

3. By June 1976 at least eighty percent of the 1972 ninth grade enrollment should graduate from high school;

4. By September 1975 at least ninety thousand handicapped students should be enrolled in programs designed specifically to meet their educational needs;

5. By September 1975 kindergarten education should be offered to all eligible children by at least one hundred twenty school divisions;

6. At least ninety percent of the teachers should be assigned to teach only those subjects for which they have certificate endorsements; and

7. At least twenty-three percent of the teachers should hold advanced degrees.
SCHOOL DIVISION

1. High school graduates expressed as a percent of the first grade enrollment twelves years earlier should increase by at least three percent each year or until a level of seventy percent is reached. Appropriate adjustments will be made for school divisions with significant increases or decreases in school population.

2. The average achievement level of the student population in reading and mathematics as measured by standardized achievement tests should equal or exceed the average ability level of the student population as measured by scholastic aptitude tests;

3. The percentage of teachers holding advanced degrees should increase by at least two percent each year or until at least twenty-three percent of the teachers hold such degrees. Work toward advanced degrees should be in the subject area to which the teacher is assigned; and

4. The percentage of attendance of pupils should not fall below the average of the last three years or ninety percent of school membership.

PLANNING AND MANAGEMENT OBJECTIVES

1. INDIVIDUAL SCHOOL PLANNING AND MANAGEMENT (PRINCIPAL AND STAFF).
   In accordance with local policies and regulations, the principal shall be responsible for discharging the major duties:
   
   a. The principal shall involve the community and his staff in the preparation and implementation of an annual school plan, which shall be consistent with the division-wide plan and which shall be approved by the division superintendent.

   b. The principal shall develop a school handbook of policies and procedures which are in compliance with and which implement division policies.

   c. The principal shall coordinate the services of all persons who work in the school to provide a healthful, stimulating school environment and an efficient and effective operation.

   d. The principal shall assign pupils to classes, programs, and activities that are designed to promote maximum learning. All pupils whose achievement is below a level commensurate with their scholastic aptitude should be diagnosed for learning disabilities and appropriate instruction should be prescribed.
e. The principal shall ensure that instructional materials and equipment are used to provide learning experiences that are compatible with the educational needs of pupils.

f. The principal and his staff shall establish methods of evaluating the progress of individual students and the effectiveness of the instructional program in each classroom and in the school as a whole.

g. The principal shall provide direct instructional supervision and assistance to teachers to help them meet the standards for classroom planning and management and shall utilize available supervisory and other consultant personnel as needed to ensure an effective instructional program in the school.

h. The principal and his staff shall provide for the cooperative evaluation of the teachers and other employees in his school. The evaluation of teachers shall be based on the standards for Classroom Planning and Management.

2. CLASSROOM PLANNING AND MANAGEMENT (TEACHER)

In accordance with local policies and regulations, the teacher shall be responsible for discharging the following major duties:

a. The teacher shall provide for the humanizing of instruction in the classroom. To accomplish this, the teacher should:

   (i) Know the academic strengths and weaknesses of each child;

   (ii) Know the home and community environment of each child;

   (iii) Treat each child as an individual in accordance with his needs;

   (iv) Understand and appreciate each child as an individual of worth; and

   (v) Help each child to recognize his potential, to develop his abilities, and to assume his responsibilities as a member of the group.

b. The teacher shall provide for individual differences in the classroom. To accomplish this, the teacher should:

   (i) Provide different subject matter and learning experiences and have different achievement standards for individuals with different abilities and/or past achievements; and
(ii) Provide opportunities for pupils to work independently on meaningful tasks that derive from the contribute to the planned activities of the group.

c. The teacher shall make use of available instructional materials and other resources that are appropriate to the needs of the pupils. To accomplish this, the teacher should supplement the textbook and make appropriate use of:

   (i) Additional reading materials, such as library books and reference materials, magazines, and newspapers;

   (ii) Educational television and other audio-visual aids;

   (iii) Demonstrations, dramatizations, and other classroom activities;

   (iv) Field trips;

   (v) Resource persons and school-related youth organizations; and

   (vii) Individual and group projects, in or out of school.

d. The teacher shall organize learning activities to achieve specific objectives which should include:

   (i) The development of needed skills;

   (ii) The understanding of specific concepts;

   (iii) The solution of meaningful problems; and

   (iv) The development of wholesome attitudes.

e. The teacher shall provide a favorable psychological environment for learning. To accomplish this, the teacher should:

   (i) Develop and use questioning techniques that require pupils to employ the higher cognitive processes as well as to demonstrate retention and comprehension;

   (ii) Encourage pupils to express their ideas in group discussions, and

   (iii) Involve pupils in planning and conducting class activities under the guidance and direction of the teacher.

f. The teacher shall evaluate the progress of students. To do this, the teacher should:

   (i) Emphasize the application of knowledge to new situations;
(ii) Include achievement in all areas of instruction, habits of work, attitudes, personal traits, and group relationships; and

(iii) Help each pupil to develop the ability to evaluate his own progress and to involve him in the evaluation process, and, be it

Resolved further, That the State Board of Education and State Board of Community Colleges are hereby requested to formulate programs of adult education in conjunction with the Secretary of Administration, subject to the approval of the Governor, in order to serve the needs for adult education and to avoid unnecessary duplication in adult education services, and be it

Resolved further, That the State Board of Education shall report annually to the Governor and General Assembly on the progress of State and local school divisions in achieving the designated objectives.

MEMBERS, BOARD OF EDUCATION OF VIRGINIA

Preston C. Caruthers, President
Arlington, 22207

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Winchester, 22601

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Lynchburg, 24504

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Dr. Harold W. Ramsey
Rocky Mount, 24151

Mrs. Elizabeth M. Rogers
Franklin, 23851

Vincent J. Thomas
Norfolk, 23516
Standards for Quality
for
Public Schools in Virginia
1976–78
STANDARDS OF QUALITY
FOR PUBLIC SCHOOLS IN VIRGINIA

ENACTED

BY

THE GENERAL ASSEMBLY OF VIRGINIA, 1976

Whereas, Section 2 of VIII of the Constitution of Virginia provides that standards of quality for the several school divisions shall be determined and prescribed from time to time by the Board of Education, subject to revision only by the General Assembly; and

Whereas, the goals of public education in Virginia are to aid each pupil, consistent with his or her abilities and educational needs, to:

1. Become competent in the fundamental academic skills;
2. Be qualified for further education and/or employment;
3. Participate in society as a responsible citizen;
4. Develop ethical standards of behavior and a positive and realistic self-image;
5. Exhibit a responsibility for the enhancement of beauty in daily life;
6. Practice sound habits of personal health; and

Whereas such Board has prescribed such standards and it is now the desire of the General Assembly that such standards be revised; now, therefore,

Be it enacted by the General Assembly of Virginia:

1. That the standards of quality for public schools in Virginia, as determined and prescribed by the Board of Education, and effective July one, nineteen hundred seventy-six, are revised as follows:
1. BASIC LEARNING SKILLS.

a. The General Assembly concludes that one of the fundamental goals of public education must be to enable each student to achieve, to the best of his or her ability, certain basic skills. Each school division shall therefore, give the highest priority in its instructional program to developing the reading, communications, and mathematics skills of all students, with concentrated effort in the primary (kindergarten through grade three) and intermediate (grades four through six) grades. Remedial work shall begin for low achieving students upon identification of their needs.

b. By September, nineteen hundred seventy-eight, the Board of Education, in cooperation with the local school divisions, shall establish specific minimum State wide educational objectives in reading, communications and mathematics skills that should be achieved during the primary grades and during the intermediate grades.

c. Each school division shall provide a kindergarten program of at least one-half day for all eligible children. Attendance in a kindergarten program shall be mandatory for each child of kindergarten age; provided that the parents or guardian of any child may decline to enroll that child in kindergarten or withdraw that child from kindergarten without prejudice, in which case attendance shall not be mandatory.

2. CAREER PREPARATION.

a. The General Assembly concludes that a goal of public education must be to enable each student, upon leaving school, to conduct successfully a program of advanced education or to enter the world of work. Each school division shall, therefore, by September, nineteen hundred twenty-eight, provide programs, approved by the Board of Education, that offer:

1. Career guidance to all secondary students;

2. Adequate preparation to secondary students planning to continue their education; and

3. Vocational education providing marketable skills for students who are not planning to continue their education beyond high school. Those students not completing their public school education should possess the basic skills and attitudes, commensurate with their capabilities, to obtain employment upon leaving school.

b. By June thirty, nineteen hundred seventy-seven, each school division, in cooperation with the Board of Education, shall have a plan for alternative career education to provide instructional choices for parents
and students. By September, nineteen hundred eighty, each school division shall have a program of alternative career education.

c. Students enrolled in alternative education programs approved by the Board of Education shall be counted in the Average Daily Membership of the school division in which they would normally be enrolled. State funds received by a school division for students enrolled in alternative education programs shall be disbursed to the programs in proportion to the number of students actually enrolled therein, in accordance with guidelines established by the Board of Education and to the extent permitted by the Constitution and laws of Virginia.

3. SPECIAL EDUCATION.

Each school division shall have a program, acceptable to the Board of Education, for early identification of students who may need special education. When handicapping conditions have been identified, such students shall be provided with a program of special education which is acceptable to the Board of Education.

4. GIFTED AND TALENTED.

a. Each school division shall provide differentiated instruction to increase educational challenges and to enrich the experiences and opportunities available to the gifted and talented students.

b. High school students who begin advanced education, whether academic or vocational before graduating from high school, shall be awarded a high school diploma upon satisfactory completion of their first year of advanced education, in accordance with regulations prescribed by the Board of Education.

5. PERSONNEL.

a. Each school division shall employ with State basic school aid funds and local funds at least forty-eight professional personnel for each one thousand students in Average Daily Membership.

b. The maximum number of students in Average Daily Membership per certified classroom teacher for each first, second, or third grade classroom in all school divisions shall be as follows: for 1977-78, twenty-eight; for 1978-79, twenty-seven; for 1979-80, twenty-six; for 1980-81, twenty-five; and for 1981-82 and thereafter, twenty-four. Until the school year 1981-82, no kindergarten classroom shall have more than twenty-five students in Average Daily Membership per certified classroom teacher; beginning with such year, no kindergarten classroom shall have more than twenty-four students in Average Daily Membership per certified teacher. If a full-time teacher's aide is
assigned to a kindergarten through third grade classroom, the maximum student limit for that classroom shall be raised by seven.

c. Each school division shall provide a program of personnel development. This program shall be designed to help all personnel to become more proficient in performing their assigned responsibilities, including the identification of individuals with special instructional needs.

6. TEACHER PREPARATION.

a. Beginning with the 1981-82 school year, one certification requirement for teachers beginning their teaching career shall be the successful completion of the equivalent of a five year program of teacher preparation, at least the fifth year of which shall be a supervised teaching internship. The Board of Education is directed to develop the rules and regulations for the operation of this program.

b. After September, nineteen hundred seventy-eight, every certified teacher shall be required every five years to have his or her certificate renewed by a certification board. The Board of Education shall establish general criteria for initial certification and certificate renewal. The courses and inservice training taken for certification renewal shall be demonstrated as pertinent to the subject area in which the teacher now teaches or plans to teach.

7. TESTING AND MEASUREMENT.

a. By September, nineteen hundred seventy-eight, each school division shall primarily utilize testing programs that will provide the individual classroom teacher with information to help in assessing the educational needs of individual students.

b. Beginning in September, nineteen hundred seventy-eight, each school division shall annually administer uniform State wide tests developed by the Department of Education to measure the extent to which each student in that division has progressed during the last year in achieving the specific educational objectives that have been established under Standard 1-B.

8. ACCREDITATION.

Each school division shall develop by July one of the next school year a plan acceptable to the Board of Education to meet accrediting standards for any school that is unaccredited or accredited with a warning by the Board of Education. The chairman and members of any evaluation committee on which accreditation is based shall be independent of the school division and they shall be selected by the Superintendent of Public Instruction. All accreditation reports shall be open for public inspection.
9. PLANNING AND PUBLIC INVOLVEMENT.

Each school division shall involve the staff and community in revising and extending biennially a six-year school improvement plan. This plan shall be reviewed and approved by the local school board and submitted by July one of each even year to the Superintendent of Public Instruction for approval by the Board of Education. This plan shall include:

1. The measurable objectives of the school division stated in terms of student performance;

2. An assessment of the extent to which the objectives are being achieved, including follow-up studies of former students;

3. Strategies for achieving the objectives of the school division; and

4. Evidence of community participation in the development of the six-year plan.

A report shall be made by November one of each even year to the local school board and to the public on the extent to which measurable objectives of the preceding two school years were achieved. Deviation from the plan shall be explained.

10. POLICY MANUAL.

Each school division shall maintain an up-to-date policy manual which shall include:

1. A grievance procedure prescribed, and amended from time to time as deemed necessary, by the Board of Education;

2. A system of direct communication between the local school board and its employees, along guidelines established or approved by the Board of Education, whereby the views of school employees may be received in an orderly and constructive manner in matters of concern to them; and

3. A cooperatively developed procedure for personnel evaluation.
An up-to-date copy of the school division policy manual shall be kept in the library of each school in that division and shall be available to employees and to the public.

2. The standards of quality prescribed above shall be the only standards of quality required by Section 2 of Article VIII of the Constitution of Virginia.

3. School divisions providing programs and services, as provided in the standards of quality prescribed above, with State basic and local funds may be required to provide such services and programs only to an extent proportionate to the funding therefore provided by the General Assembly.

2. That chapter 316 of the Acts of Assembly of 1974 is repealed. In addition to Standards of Quality which were enacted by the General Assembly, the following planning and management objectives were adopted by the Board of Education for the 1976-78 biennium. These objectives complement the Standards and provide direction for individual schools and teachers in their efforts to provide quality education for children and young people in Virginia.

PLANNING AND MANAGEMENT OBJECTIVES Adopted by the Board of Education, 1976-78

Individual School Planning and Management (Principal and Staff)

In accordance with local policies and regulations, the principal shall be responsible for discharging the following major duties:

a. The principal shall involve the community and his staff in the preparation and implementation of an annual school plan, which shall be consistent with the division-wide plan and which shall be approved by the division superintendent.

b. The principal shall develop a school handbook of policies and procedures which are in compliance with and which implement division policies.

c. The principal shall coordinate the services of all persons who work in the school to provide a healthful, stimulating school environment and an efficient and effective operation.
d. The principal shall assign pupils to classes, programs, and activities that are designed to promote maximum learning. All pupils whose achievement is below a level commensurate with their scholastic aptitude should be diagnosed for learning disabilities and appropriate instruction should be prescribed.

e. The principal shall ensure that instructional materials and equipment are used to provide learning experiences that are compatible with the educational needs of pupils.

f. The principal and his staff shall establish methods of evaluating the progress of individual students and the effectiveness of the instructional program in each classroom and in the school as a whole.

g. The principal shall provide direct instructional supervision and assistance to teachers to help them meet the standards for classroom planning and management and shall utilize available supervisory and other consultant personnel as needed to ensure an effective instructional program in the school.

h. The principal and his staff shall provide for the cooperative evaluation of the teachers and other employees in his school. The evaluation of teachers shall be based on the standards for Classroom Planning and Management.

Classroom Planning and Management (Teacher)

In accordance with local policies and regulations, the teacher shall be responsible for discharging the following major duties:

a. The teacher shall provide for the humanizing of instruction in the classroom. To accomplish this, the teacher should:

   (i) Know the academic strengths and weaknesses of each child;

   (ii) Know the home and community environment of each child;

   (iii) Understand and appreciate each child as an individual of worth;

   (iv) Help each child to recognize is potential, to develop his abilities, and to assume his responsibilities as a member of the group; and

   (v) Treat each child as an individual in accordance with his needs.

b. The teacher shall provide for individual differences in the classroom. To accomplish this, the teacher should:
(i) Provide different subject matter and learning experiences and have different achievement standards for individuals with different abilities and/or past achievements; and

(ii) Provide opportunities for pupils to work independently on meaningful tasks that derive from the contribute to the planned activities of the group.

c. The teacher shall make use of available instructional materials and other resources that are appropriate to the needs of the pupils. To accomplish this, the teacher should supplement the textbook and make appropriate use of:

(i) Additional reading materials, such as library books and reference materials, magazines, and newspapers;

(ii) Educational television and other audio-visual aids;

(iii) Demonstrations, dramatizations, and other classroom activities;

(iv) Field trips;

(v) Resource persons and school-related youth organizations, and

(vi) Individual and group projects, in or out of school.

d. The teacher shall organize learning activities to achieve specific objectives which should include:

(i) The development of needed skills

(ii) The understanding of specific concepts;

(iii) The solution of meaningful problems; and

(iv) The development of wholesome attitudes.

e. The teacher shall provide a favorable psychological environment for learning. To accomplish this, the teacher should:

(i) Develop and use questioning techniques that require pupils to employ the higher cognitive processes as well as to demonstrate retention and comprehension;

(ii) Encourage pupils to express their ideas in group discussions; and
(iii) Involve pupils in planning and conducting class activities under the guidance and direction of the teacher.

f. The teacher shall evaluate the progress of students. To do this, the teacher should:

(i) Emphasize the application of knowledge to new situations;

(ii) Include achievement in all areas of instruction, habits of work, attitudes, personal traits, and group relationships; and

(iii) Help each pupil to develop the ability to evaluate his own progress and to involve him in the evaluation process.

Commonwealth of Virginia

Department of Education

Richmond, VA 23216
Standards of Quality and Objectives
for
Public Schools in Virginia
1978-80
STANDARDS OF QUALITY
FOR
PUBLIC SCHOOLS IN VIRGINIA
ENACTED
BY
THE GENERAL ASSEMBLY OF VIRGINIA, 1978

Whereas, Section 2 of Article VIII of the Constitution of Virginia provides that standards of quality for the several school divisions shall be determined and prescribed from time to time by the Board of Education, subject to revision only the General Assembly; and
Whereas the goals of public education in Virginia are to aid each pupil, consistent with his or her abilities and educational needs, to:

1. Develop competence in the basic learning skills;
2. Progress on the basis of achievement;
3. Quality for further education or employment;
4. Develop ethical standards of behavior and participate in society as a responsible citizen;
5. Develop a positive and realistic concept of self and others;
6. Endeavor to enhance the beauty of the environment and everyday life;
7. Practice sound habits of personal health; and

Whereas, the Board of Education has prescribed such standards for the 1978–80 biennium, and it is now the desire of the General Assembly that such standards be revised; now, therefore,

Be it enacted by the General Assembly of Virginia:
1. The standards of quality for the school divisions in the Commonwealth for the 1978-80 biennium shall be:

1. BASIC LEARNING SKILLS.

   A. The General Assembly believes that the fundamental goal of the public schools of this Commonwealth must be to enable each student to acquire in the elementary grades a mastery of certain basic skills necessary for success in school and for a productive life in the years beyond. Therefore, each school division shall give the highest priority in its instruction program to developing to the best of each student's ability the reading, communications, and mathematics skills of all students, with concentrated effort in the primary grades (kindergarten through grade three) and intermediate grades (four through six). Remedial work shall begin for low-achieving students upon identification of their needs.

   B. Each school division shall use Statewide minimum educational objectives in reading, communications (with emphasis on writing, grammar, listening and speaking), and mathematical skills appropriate for each child that should be achieved in the primary and intermediate grades.

   C. Each school division shall provide a kindergarten program of at least one-half day for all eligible children.

2. CAREER PREPARATION.

   The General Assembly believes that the ultimate goal of public education must be to enable each student, upon leaving school, to continue successfully a program of advanced education or to enter the world of work. Therefore, each school division shall provide programs acceptable to the Board of Education that offer:

   A. Career guidance to all secondary students including students with disabilities;

   B. Adequate preparation for students who plan to continue their education beyond high school;

   C. Vocational education providing marketable skills for students who do not plan to continue their education beyond high school or who do not plan to finish high school.

3. SPECIAL EDUCATION.

   Each school division shall have a program, acceptable to the Board of Education, for early identification of students who may need special education. When handicapping conditions have been identified, such students
shall be provided with a program of special education that is acceptable to the Board of Education.

4. GIFTED AND TALENTED.

A. Each school division shall provide differentiated instruction to increase educational challenges and to enrich the experiences and opportunities available to gifted and talented students.

B. High school students who begin advanced education, whether academic or vocational, before graduating from high school shall be awarded high school diplomas upon satisfactory completion of their first year of advanced education, in accordance with regulations prescribed by the Board of Education.

5. ALTERNATIVE EDUCATION.

A. By September 1980 each school division shall offer alternatives to the traditional public school programs which will provide educational program choices for students whose needs are not being met by such traditional programs.

B. Students enrolled in alternative education programs approved by the Board of Education shall be counted in the Average Daily Membership of the school division in which they would normally be enrolled. State funds received by a school division for students enrolled in alternative education programs shall be disbursed to the programs in proportion to the number of students actually enrolled therein, in accordance with guidelines established by the Board of Education and to the extent permitted by the Constitution and laws of Virginia.

6. RESPONSIBLE STUDENT CONDUCT.

A. By June 30, 1979, each school division shall have conducted a thorough assessment of student conduct and attendance, with extensive involvement of students, parents and teachers and in accordance with guidelines of the Board of Education.

B. By September 1980 each school division shall have developed standards of student conduct and attendance, with extensive involvement with students, parents, teachers, administrators and school board members and shall have implemented a plan to assist students to achieve self-direction and responsible citizenship to the end that public education may be conducted in an atmosphere free of disruption and threat to person or property, supportive of the full exercise of individual civil rights, and conducive to learning.
7. PERSONNEL.

A. Each school division shall employ with State and local basic, special education, and vocational education funds a minimum of 54 certified instructional personnel for each 1,000 students in Average Daily Membership; 48 of such Instructional personnel shall be paid from the basic school aid fund.

B. The average number of first-, second- and third-grade students in Average Daily Membership per certified classroom teacher in each such grade in each school division, and the maximum number of such students in Average Daily Membership per certified classroom teacher in any one classroom shall not exceed the following:

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<tr>
<th>School Year</th>
<th>School Division Average:</th>
<th>Classroom Maximum:</th>
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<tr>
<td>1978-79</td>
<td>26</td>
<td>31</td>
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<td>1979-80</td>
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<td>1980-81</td>
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<td>1981-82</td>
<td>23</td>
<td>28</td>
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<tr>
<td>1982-83</td>
<td>22</td>
<td>27</td>
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</tbody>
</table>

No kindergarten classroom shall have more than 25 students in Average Daily Membership per certified teacher.

If a full-time teacher's aide is assigned to a kindergarten, first-, second-, or third-grade classroom, the maximum number of students that may be assigned to such classroom shall be increased by five. Special education, remedial and resource teachers, teachers aides, and all ancillary professional personnel shall not be counted in computing the school division average.

The Board of Education is authorized to grant a waiver from the requirements of this Standard, not to exceed one year's duration, but only because of construction in progress or for extraordinary circumstances. A school division shall not be considered in violation of this Standard pending timely application for a waiver.

The Board of Education shall develop regulations for the purpose of determining compliance with this Standard by the school divisions.

8. STAFF PREPARATION AND DEVELOPMENT.

A. Starting with the 1981-82 school year, one certification requirement for persons beginning teaching careers shall be successful completion of an undergraduate program which includes an introduction to the elementary or secondary school environment. Such introduction shall provide a period of extensive supervised classroom experience in
accordance with rules and regulations developed by the Board of Education. This experience shall be in addition to the probationary period for beginning teachers.

B. A certified teacher shall be required every five years to have his or her certificate renewed. The Board of Education shall establish criteria for initial certification and for certificate renewal. The courses and inservice training taken for certificate renewal shall be demonstrated as pertinent to the subject area in which the teacher now teaches or plans to teach, developmental stages of students, or professional staff responsibilities.

C. Each school division shall provide a program of personnel development. This program shall be designed to help all personnel become more proficient in performing assigned responsibilities, including identification of students with special instructional needs and classroom planning and management.

9. TESTING AND MEASUREMENT.

A. Each school division shall administer tests primarily to provide the classroom teacher with information to help in assessing the educational needs of individual students. For primary and intermediate grades such testing shall include, at least annually, the administration of criterion-referenced tests developed or approved by the Department of Education to measure the progress of each student toward achieving educational objectives established under Standard IB as follows:

- Beginning with school year, 1978-79: reading and mathematics objectives, grades 1 through 3.
- Beginning with school year 1980-81: reading and mathematics objectives, grades 5 and 6, communications objectives, grades 1 through 6.

B. Each school division shall administer annually normative tests for the purpose of assessing the educational progress of selected groups of students. The Department of Education shall develop or select such tests, provide scoring services and determine the students to be tested.

C. It is the policy of the Commonwealth that the awarding of a high school diploma shall be based upon achievement. In order to receive a high school diploma from an accredited secondary school after January 1, 1981, students shall earn the number of units of credit prescribed by the Board of Education and attain minimum competencies prescribed by the
Board of Education. Attainment of such competencies shall be demonstrated by means of a test prescribed by the Board of Education.

10. ACCREDITATION AND SCHOOL EVALUATION.

Each school division shall develop by July one of the next school year a plan acceptable to the Board of Education to meet accrediting standards for any school that is unaccredited or accredited with a warning by the Board of Education. The chairman and members of any visiting committee conducting evaluation as part of the accreditation process shall be independent of the school division and shall be selected by the Superintendent of Public Instruction. All accreditation reports shall be open for public inspection.

11. PLANNING AND PUBLIC INVOLVEMENT.

Each school division shall involve the staff and community in revising and extending annually a six-year school improvement plan. This plan shall be reviewed and approved by the local school board and submitted by January fifteen of each odd-numbered year to the Superintendent of Public Instruction for approval by the Board of Education. This plan shall include:

A. the measurable objectives of the school division stated in terms of student performance,

B. an assessment of the extent to which the objectives are being achieved, including follow-up studies of former students,

C. strategies for achieving the objectives of the school division,

D. evidence of community participation in the development of the six-year plan.

A report shall be made by November one of each even year to the local school board and to the public on the extent to which the measurable objectives of the preceding two school years were achieved. Deviations from the plan shall be explained.

12. POLICY MANUAL.

Each school division shall maintain and follow an up-to-date policy manual which shall include, at minimum,

A. a grievance procedures prescribed, and amended from time to time as deemed necessary, by the Board of Education,

B. a system of direct communication between the local school board and its employees, based on guidelines established or approved by the Board.
of Education, whereby views of school employees may be received in an orderly and constructive manner in matters of concern to them,

C. a cooperatively developed procedure for personnel evaluation.

An up-to-date copy of the school division policy manual shall be kept in the library of each school in that division and shall be available to employees and to the public.

2. The standards of quality prescribed above shall be the only standards of quality required by Section 2 of Article VIII of the Constitution of Virginia.

3. School Divisions providing programs and services as provided in the standards of quality prescribed above, with State basic and local funds may be required to provide such services and programs only to the extent proportionate to the funding therefor provided by the General Assembly.

4. Notwithstanding any other provision of law, the Board of Education shall have authority to seek school division compliance with the foregoing standards by requesting the office of the Attorney General to institute appropriate action, except that in seeking compliance with the grievance procedure provided for in Standard 12, the authority of the Board of Education shall be limited to the procedural aspects of the grievance procedure to the exclusion of the merits of the controversy.


In addition to the standards of quality which were enacted by the General Assembly, the following planning and management objectives have been adopted by the Board of Education. These objectives complement the standards and provide direction for individual schools and teachers in their efforts to provide quality education for children and young people in Virginia.

PLANNING AND MANAGEMENT OBJECTIVES Adopted by the Board of Education

Individual School Planning and Management (Principal and Staff)

In accordance with local policies and regulations, the principal shall be responsible for discharging the following major duties:

a. The principal shall involve the community and his or her staff in the preparation and implementation of an annual school plan, which shall be consistent with the division wide plan and which shall be approved by the division superintendent.
b. The principal shall develop a school handbook of policies and procedures which are in compliance with and which implement division policies.

c. The principal shall coordinate the services of all persons who work in the school to provide a healthful, stimulating school environment and an efficient and effective operation.

d. The principal shall assign pupils to classes, programs, and activities that are designed to promote maximum learning. All pupils whose achievement is below a level commensurate with scholastic aptitude should be diagnosed for learning disabilities and appropriate instruction should be prescribed.

e. The principal shall ensure that instructional materials and equipment are used to provide learning experiences that are compatible with the educational needs of pupils.

f. The principal and his or her staff shall establish methods of evaluating the progress of individual students and the effectiveness of the instructional program in each classroom and in the school as a whole.

g. The principal shall provide direct instructional supervision and assistance to teachers to help them meet the objectives for classroom planning and management and shall utilize available supervisory and other consultant personnel as needed to ensure an effective instructional program in the school.

h. The principal and his or her staff shall provide for cooperative evaluation of the teachers and other employees in his or her school. The evaluation of teachers shall be based on the objectives for classroom planning and management.

Classroom Planning and Management (Teacher)

In accordance with local policies and regulations, the teacher shall be responsible for discharging the following major duties:

a. The teacher shall provide for humanizing of instruction in the classroom. To accomplish this, the teacher should:

   (i) Know the academic strengths and weaknesses of each child;

   (ii) Know the home and community environment of each child;

   (iii) Understand and appreciate each child as an individual or worth;
(iv) Help each child to recognize his or her potential, to develop his or her abilities, and to assume his or her responsibilities as a member of the group; and

(v) Treat each child as an individual in accordance with his or her needs.

b. The teacher shall provide for individual differences in the classroom. To accomplish this, the teacher should:

   (i) Provide different subject matter and learning experiences and have achievement standards for individuals with different abilities and/or past achievements; and

   (ii) Provide opportunities for pupils to work independently on meaningful tasks that derive from and contribute to the planned activities of the group.

c. The teacher shall make use of the available instructional materials and other resources that are appropriate to the needs of the pupils. To accomplish this, the teacher should supplement the textbook and make appropriate use of:

   (i) Additional reading materials, such as library books and reference materials, magazines, and newspapers;

   (ii) Educational television and other audio-visual aids;

   (iii) Demonstrations, dramatizations, and other classroom activities;

   (iv) Field trips;

   (v) Resource persons and school-related youth organizations; and

   (vi) Individual and group projects, in or out of school.

d. The teacher shall organize learning activities to achieve specific objectives which should include:

   (i) The development of needed skills;

   (ii) The understanding of specific concepts;

   (iii) The development of wholesome attitudes; and

   (iv) The solution of meaningful problems.
e. Develop and use questioning techniques that require pupils to employ the higher cognitive processes as well as to demonstrate retention and comprehension;

   (ii) Encourage pupils to express their ideas in group discussions; and

   (iii) Involve pupils in planning and conducting class activities under the guidance and direction of the teacher.

f. The teacher shall evaluate the progress of students. To do this, the teacher should:

   (i) Emphasize the application of knowledge of new situations;

   (ii) Include achievement in all areas of instruction, habits of work, attitudes, personal traits, and group relationship; and

   (iii) Help each pupil to develop the ability to evaluate his or her own progress and to involve him or her in the evaluation process.
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APPENDIX B

CONSUMER PRICE INDEX
## CONSUMER PRICE INDEX

### 1970 BASE YEAR

<table>
<thead>
<tr>
<th>Year</th>
<th>Index Average</th>
<th>Percent Increase Over Preceding Year</th>
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THE EFFECTS OF IMPLEMENTATION
OF STANDARDS OF QUALITY POLICY
ON THE QUALITY OF EDUCATION IN VIRGINIA, 1972-1980

by

Iris T. Metts

(ABSTRACT)

The present investigation took place in the State of Virginia, where the instrument of State wide change was the Standards of Quality (hereafter SOQ). For the first time in the history of Virginia, performance standards for education were prescribed by the State constitution. The State Board was directed, subject to the ultimate authority of the General Assembly, to prescribe Standards of quality for the Commonwealth's school divisions.

It was the goal of the study to define those SOQ factors and processes that affected quality education and to determine to what extent State policy influenced quality education. Inherent in the perception of improved quality of education was the assumption of the academic advancement of students.

Correlations and hierarchial (stepwise) analysis methods were used to analyze the effects of SOQ policy implementation school divisions in Virginia from 1972 to 1980. The composition of the total variance in the regression equation was examined to identify the effect of the independent variables, i.e., SOQ policy standards, SOQ financial policy -- per pupil cost and classroom teacher salary, the five year planning process and environmental factors on student achievement in reading, mathematics and language arts as measured by the State standardized testing program.

A summary of some significant conclusion of the study follows:

1. State test score norms did improve substantially over the period of implementation of SOQ policy. There was some justification from research findings that SOQ policy contributed somewhat to
improved achievement, but non-school factors such as percentage of minorities in the community, family income and student ability were found to have the greatest impact on student achievement.

2. Implementation of SOQ policy did not promote equity in teacher salaries, operational cost per pupil and student achievement local school divisions in Virginia.

If the intent of SOQ policy was the implementation of educational policy throughout Virginia, it must be judged to have been effective in getting localities to meet specific program and personnel quantity standards. Yet, SOQ policy fell far short of assuring equal opportunities for academic achievement for students among the school divisions in Virginia.