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ABSTRACT

A STUDY OF THE RELATIONSHIPS BETWEEN TEACHER-ADMINISTRATOR PERCEPTIONS OF EDUCATIONAL QUALITY AS MEASURED BY THE EDUCATIONAL CHARACTERISTICS CRITERION, (ECC) AND SELECTED COST FACTORS

by Van Dyck Mueller

Purpose of the Study

This study was an attempt to formulate a quality-measurement procedure based on the perceptions held by those individuals, teachers and administrators, most closely associated with the formal educational process. The purpose of the study was three-fold: (1) to determine and analyze the perceptions held by teachers and administrators relating to specific characteristics of educational programs as measured by the Educational Characteristics Criterion, (ECC), (2) to compare teacher-administrator quality perceptions with certain selected educational cost factors, and (3) to determine the extent to which the perceptions measured in a national study were similar to those measured by Berg[1] in his study of Michigan teachers and administrators.

Procedure and Design

The measurements of teacher and administrator perceptions of educational quality were secured by means of responses to the Educational Characteristics Criterion, (ECC). This instrument was

based on the assumption that educational quality resides more in the mind of the observer than in the inherent structure of the educational program. The use of this instrument was further predicated on the assumption that educational quality is determined by a judgment about certain educational characteristics, both school and community, which are perceived as effective in accomplishing the purposes of American public school education. Data for the comparison of teacher-administrator quality perceptions came from responses to fifty-six scored educational characteristics. Each of the individual educational characteristics was assigned to one of the seven following categories in order to provide a vehicle for understanding the effects of and inter-relationships between the various school and community variables: (1) Student's level of knowledge and attitudes, (2) Community attitudes, (3) Curriculum, (4) Use of Facilities, (5) Socio-cultural composition of community, (6) Administration and supervision, and (7) The teacher and teaching methods.

The analysis leading to the comparison of teacher and administrator perceptions of educational quality associated with variations in educational cost factors required data from different school systems within each quartile of financial support and from school systems in different states. The criteria governing the selection of the sample were as follows: (1) an adequate and proportionate number of teacher and administrator respondents within the first and fourth quartiles of the distribution of financial support factors of size (membership), ability (property valuation per pupil), effort (mills for operation), and expenditure per pupil for current operation, and (2) several school districts within each cost quartile representative of a sufficiently large number of the states. Seven U. S. public school districts in the fourth

or high financial support quartile and eighteen U. S. public school districts in the first or low financial support quartile were selected randomly to represent the extremes in cost factors stratified on the basis of size, effort, ability, and expenditure per pupil. Useable data were acquired from 1223 teacher respondents and 92 administrator respondents from the seven districts within the high financial quartile and from 1081 teacher respondents and 82 administrator respondents representing the eighteen districts in the low financial support quartile.

The five major hypotheses, developed and tested were stated as follows:

I. The Educational Characteristics Criterion will show ability to discriminate between the first or low financial support quartile and the fourth or high financial support quartile of United States public school districts (K-12) which are classified on the educational cost factors of size, effort, ability, and expenditure.

II. The Educational Characteristics Criterion will show no ability to discriminate between the responses of teachers and administrators within the low financial support quartile, within the individual large school districts, and within individual small school districts.

III. The Educational Characteristics Criterion will show high reliability within the high financial support quartile and within the low financial support quartile.

IV. The Educational Characteristics Criterion will show high reliability within individual large and small school districts.

V. The individual educational characteristic scores in the Educational Characteristics Criterion will have adequate positive discrimination power with respect to the total quality score and to their related category scores.

The "t" test was used to determine the discrimination with regard to the first two hypotheses. The Hoyt analysis of variance technique was used to estimate reliability from the consistency of individual performance to test the third and fourth sets of hypotheses. The point biserial correlation coefficient was used to determine the positive discrimination power of the individual educational characteristics with respect to total score and their related category scores. In addition to this test of the fifth hypothesis, product-moment coefficients of correlation were computed to provide exploratory data involving relationships between category variables.

Major Findings and Conclusions

The following assessment of the findings was reached:

1. The Educational Characteristics Criterion can discriminate positively between United States school districts having high financial support and those United States school districts having low financial support. The total quality scores, each of seven category scores, and forty-one individual educational characteristics scores of teacher respondents indicate a positive relationship between level of financial support and educational quality. Total quality scores, three category scores, and eighteen individual characteristic scores of administrator respondents indicate that educational quality is present in a significantly higher degree in school district with high financial support than in those school districts with low financial support.

2. The Educational Characteristic Criterion discrimination indicates significant disagreement between teachers and asministrators concerning educational quality within the high financial support quartile and within the low financial support quartile. This unexpected finding

is supported by significant differences between the total quality scores, six category scores, and eighteen individual educational characteristic scores of teachers and administrators in high quartile districts. Teachers and administrators in low quartile districts differ significantly in total quality scores, six category scores, and twenty-four individual educational characteristic scores. Total quality scores, seven category scores, and thirteen individual educational characteristic scores of teachers and administrators within both financial support quartiles indicate the tendency for administrators to overvalue educational quality in relation to teacher value level.

3. The reliability of Educational Characteristics Criterion total scores ranges from .89 to .91 according to teacher or administrator respondents within high and low financial support quartiles. The reliability of category scores according to administrator or teacher respondents within high and low support districts exceeds .56 except for categories I and V. Reliability measurements within individual large and small districts indicate wide variations. In a sampling sense, the number of administrator respondents involved in the analysis of individual large or small districts is too small to draw certain conclusions. Although the relatively short category tests are not sufficiently homogeneous for individual interpretation, the total test scores, based on 56 items appears highly homogeneous.

4. Item analyses tests indicate that all but four of the individual characteristic scores in the Educational Characteristics Criterion had adequate positive discrimination ($p < .01$) with respect to total score and related category score.

In general, the Educational Characteristics Criterion, (ECC), shows promise as a research tool, not only in the type of study outlined

here, but in other types of studies which view the perception of educational quality as a critical point, needing practicable description. The evidence of this study is considered favorable enough to justify the revision and development of a more complete instrument of this nature including other dimensions of classroom and community characteristics. The finding of significant areas of disagreement between responses of teachers and administrators within each financial support quartile should be of importance to those concerned with the development of unified professional goals, expectations, and standards for all educators.

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[1]Arthur D. Berg, "The Determination of the Discrimination and Reliability Indices of the Educational Characteristics Criterion With Implications Concerning Educational Cost-Quality Relationships," Unpublished Ph. D. Thesis, Michigan State University, 1962.

A STUDY OF THE RELATIONSHIPS BETWEEN TEACHER-ADMINISTRATOR PERCEPTIONS OF EDUCATIONAL QUALITY AS MEASURED BY THE EDUCATIONAL CHARACTERISTICS CRITERION, (ECC) AND SELECTED COST FACTORS

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This study is dedicated to my wife, Mildred and to my daughters, Vanessa, Kerry, and Edith. Without their patience and understanding it could not have been written.

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CHAPTER I

THE PROBLEM

Statement of the Problem

Educational quality, since it concerns the most complex and intricate social enterprise known, has never been reduced to a clear, basic formula understandable to laymen and educators. A major difficulty associated with attempts to measure the quality of educational programs is to reach agreement on quality factors and then to develop instrumentation which measures these with some precision. The American public has been inclined, at different periods, to judge educational quality by such varied criteria as literacy, subject-matter skills, vocational skills, income in later life, economic level of a State, health, juvenile delinquency rate, and national scientific progress. Although there seems to be general agreement concerning the measurement of educational quantity and about the need for quality education, what is meant by "quality education" is subject to argument based on diverse sets of values and purposes.

There is a need for the development and testing of quality-related factors of educational programs based on the values and goals of society so that some specific, precise definition may be obtained of quality in education or that we might more readily approach this end. Most of the conflict over what schools are or are not doing and over what constitutes quality education is imbedded in the value system of both proponent and critic. Since it is important to know what people believe "quality" to be and since the concept of quality is a relative one which probably exists more in the mind of the individual than it does in

a particular program, the perceptions held by those individuals most closely associated with the formal educational process are important factors in formulating a quality-measurement process.

Purpose of the Study

The purpose of this study is three-fold:

1. To determine and analyze the perceptions held by teachers and administrators relating to specific characteristics of educational programs as measured by the Educational Characteristics Criterion, (ECC).
2. To compare the perceptions held by teachers and administrators with certain selected educational cost factors.
3. To determine the extent to which the perceptions measured in this national study are similar to those measured by Berg[1] in his research with Michigan teachers and administrators. This study will replicate in all respects but sample population the design, methodology and instrumentation utilized in the Michigan study.

Importance of the Study

Many studies have examined the effect of expenditures on education, and have attempted to estimate the quality of school programs. The available factual evidence and conclusions of over forty years of research overwhelmingly suggests that the better schools do spend

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[1]Arthur D. Berg, "The Determination of the Discrimination and Reliability Indices of the Educational Characteristics Criterion With Implications Concerning Educational Cost-Quality Relationships," Unpublished Ph. D. Thesis, Michigan State University, 1962.

more money per pupil than do the poorer schools. The relationship between expenditure and quality is a positive, although imperfect relationship. It appears that many factors, both cost-related and non-cost-related affect the quality of educational programs. However, since the most powerful of all of the factors which influence the quality of the schools is the level of financial support, further investigations into the effects of non-cost related items such as the perceptions held by selected individuals regarding quality, must be correlated with the cost or expenditure factors.

The problem of the cost-quality relationship in education involves the issue of defining quality education. Most people want to increase the quality of education in the United States, but disagree on what quality education is and how it may be achieved. To achieve quality in education we must not only want it, but we must know what we mean by quality and identify the means by which it may be achieved.

It appears that the concept of quality is a relative one that resides more in the mind of the observer than it does in the actual structure of the school program. If quality is in part a function of the perception of the observer and of the values he holds, the key to definition and measurement of quality resides in the perceptions and value orientations of those making judgments about quality in educational programs. Two groups intimately concerned with the learning process, and therefore in a position to influence quality education positively or negatively through their perceptions of quality and their value orientations, are school administrators and teachers.

The measurement and analysis of the perceptions of teachers and administrators through a wide sampling of both non-cost and cost related factors in the Educational Characteristics Criterion, (ECC), will make available a basic research tool to study further the vital question of quality education. The development of an adequate measure

of quality as perceived by laymen and educators will take the problem of excellence out of the sphere of mere opinion and place it positively in the realm of sound, quality educational practice. As quality-related factors are identified in education, better tools can be provided for curriculum planning, program administration, staffing and community relations programs.

The national application, testing, and analysis of the Educational Characteristics Criterion, (ECC), will meet the pressing need for a comprehensive, but practical device to appraise the quality of an educational program in any given school district in the United States from a new and different point of reference; the perceptions of those personnel most closely associated with the classroom operation of the school program and able to affect program improvement.

Assumptions Upon Which This Study Is Based

There are almost as many definitions of educational quality in the literature as there are educational authorities. One definition of quality education puts great emphasis upon high level education and pays particular emphasis to difficult and advanced work. Another concept of quality education would put the major emphasis on doing whatever the school needed to do, with emphasis on doing this very well. Quality is perceived differently by each individual because of personal value orientations, goals and past experiences. American schools tend to reflect the values of the dominant groups in the communities which they serve. For this reason values may vary from one school community to another. In earlier decades the homogeneous social origin and training of most teachers and administrators tended to reduce this range of variation. In current years however, there has been an increase in the heterogeniety of social backgrounds of educators.

Havighurst reports on a number of recent studies which indicate that "teachers are coming to represent more of a cross-section of the American population, this has its effects upon school-community relations."[2] The personal aspect of quality perceptions and the heterogeniety of American society cause difficulty in establishing a definition of educational quality acceptable to all educators and laymen.

For purposes of this study the educational characteristics of school districts that are used as a definition of quality are those for which there has been established a consensus among educational specialists. It is assumed that teachers and administrators are able to relate accurately their perceptions of the educational characteristics of their school district. It is also assumed that the educational characteristics and quality factors in the Educational Characteristics Criterion, (ECC), may be assigned to the following seven categories: (1) use of facilities, (2) students' level of knowledge and attitudes, (3) socio-cultural composition of the community, (4) administration and supervision, (5) curriculum, (6) the teacher and teaching methods, and (7) community attitudes.

It is assumed that school district cost factors of size, effort, ability, and expenditure per pupil are important factors correlated highly with educational quality. Size of a school district is defined as the average daily public school membership (ADM), in grades kindergarten through twelve or from grades one through twelve in those cases where kindergarten is not included in the educational program. It is assumed that size is an important factor affecting educational quality. A small school district tends to provide an educational

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[2]Robert J. Havighurst and Bernice L. Neugarten, Society and Education (Boston: Allyn and Bacon, Inc., 1957), p. 374.

program of lesser scope than a large district. The cost per pupil in the smaller district also tends to be inflated considerably as a result of small pupil-teacher ratios. Effort is a measure of local taxation and is defined in this study as the operational millage levied on the final appraisal of real and personal property valuation of the school district. Ability or wealth is defined as the total final real and personal property valuation of the district expressed in dollars divided by the average daily membership, ADM. Expenditure per pupil reflects the actual per pupil costs for current operation. Current expenditure per pupil includes amounts expended for elementary and secondary day schools divided by average daily membership. Current operating expenditures do not include payment for capital outlay and school debt retirement service.

The basis for the assumptions regarding the relationship of educational quality to cost-related factors of size, effort, ability, and per pupil expenditure are found in the cumulative results of previous research.[3]

Hypotheses and definitions used and data and conclusions compiled and analyzed in previous studies by Berg[4] and Kraft[5] as related to the non-cost and cost-related factors in the Educational Characteristics Criterion, (ECC), are assumed to be precise and accurate within their stated limits.

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[3]William S. Vincent, "Quality Control: A Rationale for Analysis of a School System," IAR Research Bulletin, Vol. I, No. 2 (January, 1961), pp. 1-7.

[4]Arthur D. Berg, loc. cit.

[5]Leonard E. Kraft, "The Perceptions Held by Professors of Education; Professors in Areas Other than Education, and School Board Members on Ninety Factors Which May or May Not Affect the Quality of An Educational Program," Unpublished Ed. D. Thesis, Michigan State University, 1962.

It is further assumed that the sampling techniques used by the Test Division of Harcourt, Brace and World, Incorporated, to standardize the 1964 revision of the Stanford Achievement Test derive a representative randomly selected population of school districts in the United States. The population used in the 1964 Stanford Achievement Test standardization program was drawn from two hundred sixty-seven school districts, located in all fifty states.[6]

The Scope and Delimitation of the Study

This study is delimited as follows:

1. The major variables of the study are derived from individual perceptions of the Educational Characteristics Criterion, (ECC), educational quality factors by teachers and administrators in American public school systems, and from the following cost related factors furnished by school district superintendents: property valuation per pupil (ability), millage for current expenditures (effort), current expenditure per pupil, and average daily membership (ADM), K-12 or 1-12 as adjusted (size).

2. The statistical analyses of this study are concerned with testing the reliability and validity of the Educational Characteristics Criterion, (ECC), and determining the significance of the correlations and inter-relationships between individual quality item scores, category scores, total quality scores, and selected factors of educational cost.

3. This study is limited to data from the high and low financial support quartiles of the national sample of public school districts.

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[6]The samples used in this study were drawn from those school districts which took part in the standardization program of the Stanford Achievement Test (1964 edition).

No conclusions are drawn in regard to the second and third financial support quartiles.

4. This study treats selected educational cost factors of size, effort, ability, and expenditure per pupil as a single composite financial factor and the selected educational quality factors as contained in the Educational Characteristics Criterion, (ECC). The cost and quality factors treated are not intended to be inclusive.

5. The conclusions of this study regarding the relationships between the cost-quality variables are not interpreted to indicate a causal relationship, but merely to indicate a direct association.

Definition of Terms

Public schools. The term public schools as used in this study refers to the publically supported and controlled elementary and secondary schools in selected American school districts which maintain grades K-12 or 1-12.

School district. A school district is a quasi-legal municipal corporation created by the State for the purpose of operating and maintaining public schools having grades K-12 or 1-12, and whose boundaries are not necessarily related to those of other local units of government.

School district type. School district type is defined as the representative characteristics common to groups of individual school districts which are classified as either highest or lowest quartile according to each of the four factors of educational cost; namely, size, ability, effort and expenditure per pupil.

State equalized valuation. The final appraisal of the worth of real and personal property as established for tax purposes by the separate states.

Mill. The value of a tenth of a cent or a thousandth of a dollar.

Size. The average daily public school membership expressed in the number of children of a school district from K-12 or 1-12 as adjusted.

Financial ability. The state equalized valuation expressed in dollars of a school district divided by the average daily resident membership (size).

Average daily membership, ADM. The aggregate days membership for the school district divided by the number of days school was in session.

Financial effort. The tax rate expressed in mills levied in a public school district for purposes of current operation of the school district.

Current expenditures. The total of all expenditures for operation made during a given period of time except for capital outlay and debt service.

Current expenditure per pupil. The cost per pupil computed by dividing the total current operating expense by the average daily membership.

Educational quality. Those educational characteristics of a school district, both school and community, which are perceived by educational authorities as being effective in accomplishing the purposes of American public education. The characteristics are defined by the Educational Characteristics Criterion, (ECC), for purposes of this study.

Total quality score. The sum of the weighted item responses to the Educational Characteristics Criterion, (ECC).

Category quality score. The sum of the weighted item responses of the educational characteristics included in each of the following categories of educational quality: (1) use of facilities, (2) students' level of knowledge, (3) socio-economic composition of community, (4) administration and supervision, (5) curriculum, (6) the teacher and teaching methods, and (7) community attitudes.

Educational characteristic score or item quality score. The weighted response to one educational characteristic or one item of the Educational Characteristics Criterion, (ECC).

Teachers. Persons employed to instruct pupils or students in grades K-12 or 1-12 as adjusted, in a situation where the pupils or students are in the presence of each other. The term is not applied to principals, supervisors or other administrative personnel in this study.

Administrators. The administrative personnel of a school district or school to whom have been delegated the responsibilities for the general regulation, direction, supervision, and coordination of the affairs of the school district or school. Superintendents, principals and supervisors are represented by this term in the study.

Hypotheses

General Hypothesis I

The Educational Characteristics Criterion will show ability to discriminate between the first or low financial support quartile and fourth or high financial support quartile of United States public school districts (K-12) which are classified on the educational cost factors of size, effort, ability, and expenditure.

Operational Hla

There will be a significant difference between the high financial support districts and low financial support districts in the total mean scores according to teacher responses.

Operational H1b

There will be a significant difference between the high financial support districts and low financial support districts in the total mean scores according to administrator responses.

Operational H2a

There will be a significant difference between the high financial support districts and low financial support districts in each category mean score based upon teacher responses.

Operational H2b

There will be a significant difference between the high financial support districts and low financial support districts in each category mean score based upon administrator responses.

Operational H3a

There will be a significant difference between the high financial support districts and low financial support districts in each educational characteristic mean score based upon teacher responses.

Operational H3b

There will be a significant difference between the high financial support districts and low financial support districts in each educational characteristic mean score based upon administrator responses.

General Hypothesis II

The Educational Characteristics Criterion will show no ability to discriminate between the responses of teachers and administrators within the high financial support quartile, within the low financial support quartile, within the individual large school districts, and within individual small school districts.

Operational H4a

Within high financial support districts and within low financial support districts there is no difference between total mean scores of teachers and administrators.

Operational H4b

Within high financial support districts and within low financial support districts there is no difference between each category mean score of teachers and administrators.

Operational H4c

Within high financial support districts and within low financial support districts there is no difference between each educational characteristic mean score of teachers and administrators.

Operational H5a

Within individual large and small school districts there is no difference between total mean scores of teachers and administrators.

Operational H5b

Within individual large and small school districts there is no difference between each category mean score of teachers and administrators.

General Hypothesis III

The Educational Characteristics Criterion will show high reliability within the high financial support quartile and within the low financial support quartile.

Operational H6a

There will be a high consistency in individual educational characteristic scores and the total scores of teacher respondents in the high financial support quartile of districts.

Operational H6b

There will be a high consistency in individual educational characteristic scores and the total scores of administrator respondents in the high financial support quartile of districts.

Operational H6c

There will be a high consistency in individual educational characteristic scores and the total scores of teacher respondents in the low financial support quartile of districts.

Operational H6d

There will be a high consistency in individual educational characteristic scores and the total scores of administrator respondents in the low financial support quartile of districts.

Operational H7a

There will be a high consistency in individual educational characteristic scores and the related category scores of teacher respondents in the high financial support quartile of districts.

Operational H7b

There will be a high consistency in individual educational characteristic scores and the related category scores of administrator respondents in the high financial support quartile of districts.

Operational H7c

There will be a high consistency in individual educational characteristic scores and related category scores of teacher respondents in the low financial support quartile of districts.

Operational H7d

There will be a high consistency in individual educational characteristic scores and related category scores of administrator respondents in the low financial support quartile of districts.

General Hypothesis IV

The Educational Characteristics Criterion will show high reliability within individual large and small school districts.

Operational H8a

There will be high consistency in individual educational characteristic scores and the total scores of teacher respondents in large districts.

Operational H8b

There will be high consistency in individual educational characteristic scores and the total scores of administrator respondents in large districts.

Operational H8c

There will be high consistency in individual educational characteristic scores and the total scores of teacher respondents in small districts.

Operational H8d

There will be high consistency in individual educational characteristic scores and the total scores of administrator respondents in small districts.

Operational H9a

There will be high consistency in individual educational characteristic scores and related category scores of teacher respondents in large districts.

Operational H9b

There will be high consistency in individual educational characteristic scores and related category scores of administrator respondents in large districts.

Operational H9c

There will be a high consistency in individual educational characteristic scores and related category scores of teacher respondents in small districts.

Operational H9d

There will be a high consistency in individual educational characteristic scores and related category scores of administrator respondents in small districts.

General Hypothesis V

The individual educational characteristic scores in the Educational Characteristics Criterion will have adequate positive discrimination power with respect to the total quality score and to their related category scores.

Operational H10

The correlation coefficient for the relation of individual educational characteristic scores to total score differs significantly from zero.

Operational H11

The correlation coefficient for the relation of each educational characteristic score to its respective category score differs significantly from zero.

Organization of the Thesis

This chapter has presented a statement of the problem, the purpose of the study, the importance of the study, the assumptions upon which the study is based, the general and operational hypotheses, the scope and limitations of the study, and definitions of terms.

In Chapter II, a review of related literature is presented. The review includes theoretical statements and constructs concerning educational quality, instrumentation used in studies of educational quality, and reports of significant empirical studies of educational quality related to cost and non-cost factors.

In Chapter III, the procedure and methodology of the study are presented. The detailed description includes the source of the data, the quality criterion, financial or cost factors, sample selection, research design, and proposed statistical treatment.

In Chapters IV, V and VI the analysis of the data is reported.

In Chapter VII, the summary, conclusions, implications and recommendations for further research are presented.

CHAPTER II

RELATED LITERATURE

Considerable evidence has been accumulated over a period of years concerning the fields of school finance and school quality. Some of this evidence has been developed through research studies; some has been based on carefully evaluated experience. There are many areas of school quality research where decisions must necessarily be based on theoretical and philosophical concepts and values growing out of one's philosophy. The great differences of opinion and most marked controversies are found in the areas where the decisions must be based chiefly on personal value concepts and perceptions growing out of varying points-of-view concerning social organization and the role of education in a democracy.

The succeeding sections of this chapter are devoted to a summary and analysis of the available evidence concerning the definitions of educational quality and their relation to educational cost factors classified under three categories: (1) theoretical statements and constructs about educational needs, values, and quality, (2) instruments used to evaluate the quality of educational programs, and (3) related empirical and theoretical studies. Consideration has been given to the different views of laymen and educators. Since both sentimental and realistic attitudes toward education are voiced in the great clamor for quality education the diverse views present the breadth and complexity of the current problem of: (1) defining and evaluating educational quality and (2) determining its relationship to financial support variables.

Theoretical Statements and Constructs

The National Interest in Education

From the earliest days of the American Republic education has been considered vital to the welfare of the people and the nation. The Northwest Ordinance of 1787 stated this concept:

> Religion, morality, and knowledge, being necessary to good government and the heppiness of mankind, schools and the means of education shall forever be encouraged.[1]

Although controversy over education has been a continuing feature of the American public scene, at no time has there been serious challenge to the proposition that education must be provided. The great debates have dealt with the kinds of education to be provided, for whom, and by whom.

The importance of education to the national life may be seen in this penetrating statement from the Educational Policies Commission:

> Universal opportunity for public education is America's response to a moral principle; that every person should have opportunity to develop his full potential. The interests of the nation--its political effectiveness, prosperity, and security--today lend new urgency to that moral principle.[2]

The Nation's Strength

Throughout the middle years of the twentieth century the American educational system, a distinctive feature of our democratic life, has reeled under the impact of an unprecedented combination of forces, being put to test by the simultaneous strains and pressures of

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[1]Kenneth H. Hanson, Public Education in American Society (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1956), p. 38.

[2]Educational Policies Commission, "National Policy and the Financing of the Public Schools" (Washington, D. C.: National Education Association, 1959), p. 7.

the postwar population boom, the explosive increase in knowledge, and the urgent demands for a vast new supply of highly trained manpower. Lippman was deeply concerned with the critical problems facing education when he stated:

> We are entering upon an era which will test to the utmost the capacity of our democracy to cope with the gravest problems of modern times . . . . We are entering upon this difficult and dangerous period with what I believe we must call a growing deficit in the quantity and the quality of American education . . . . We have to make a breakthrough to a radically higher and broader conception of what is needed and of what can be done. Our educational effort today . . . is still in approximately the same position as was the military effort of this country before Pearl Harbor.[3]

The report of the Conference on the Ideals of American Freedom and the International Dimensions of Education sponsored by the United States Office of Education issued several statements having to do with tests of strength of our nation. These included: (1) A nation's strength lies in the strength of all its people; (2) It is tested in the aspirations of its youth and the quality of its schooling; (3) Our democracy is no stronger than the moral and intellectual fiber of our people; (4) Our country can be no richer than our teachers' minds and our children's opportunities; (5) Since the quiet strength and latent power of education is less tangible than arms or missiles, it has been more difficult to realize; and (6) American education has become the testing ground for democracy.[4]

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[3]Walter Lippman, Education for Leadership: Citizens and Their Schools (New York: National Citizens' Commission for the Public Schools, 1954), pp. 24-25.

[4]U. S. Department of Health, Education and Welfare, Education for Freedom and World Understanding, Bulletin OE-10016 (Washington, D. C.: U. S. Government Printing Office, 1962), pp. 50-51.

During the past decade the American people have been shocked into recognizing a connection between the quality of educational programs and the nation's security. The need for scientists, engineers, and technicians, the inadequate knowledge of many men drafted into military service, and the high draft rejections for illiteracy have been documented in many studies.

However, the need for quality educational programs and better schools is evident for reasons deeper than the important considerations mentioned thus far. The Committee for Economic Development developed the singular issue in the following brief statement:

> A democracy lives or dies by the ability of its people to choose wisely. We need better schools to teach us how to understand the alternatives before us, and how to choose wisely among the real alternatives.[5]

Education For All

Access to educational opportunity in most societies of the past has been a privilege rather than a right. It was inevitable that it should become a right in America, dedicated to the principle that "all men are created equal." This phrase has little meaning unless interpreted to mean equal opportunity for all. The President's Committee for the White House Conference concluded:

> An important . . . reason for the growing importance of education is the plain fact that the schools have become the chief instrument for keeping this nation the fabled land of opportunity it started out to be . . . .
>
> The order given by the American people to the schools is grand in its simplicity; in addition to intellectual achievement, fostering morality, happiness, and useful ability, the talent

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[5]Ralph Lazarus, We Can Have Better Schools (New York: Committee for Economic Development, 1959), p. 4.

of each child is to be sought out and developed to the fullest. Schools of that kind have never been provided for more than a small fraction of mankind.[6]

Penalties of Educational Inequality

The National Committee for the Support of Public Schools points up the shocking fact that the United States, with equal opportunity as one of its ideals, has failed to provide quality educational opportunity for all children. The lack of schooling and poor schooling are associated with such social problems as: (1) low earning capacity, (2) large pupil drop-out rates and subsequent unemployment, (3) rejection from military service, and (4) dependence upon public relief in its various forms.[7]

A project sponsored by President Eisenhower when he was president of Columbia University pointed out that we were "squandering our human resource capital." This waste resulted from "the failure of our society to invest adequately in the development of its people, particularly its young people during their formative years."[8] This study and others in the series made since World War I have pointed out some of the inconsistencies between democratic concepts and practices related to the provision of educational opportunities.

Johns and Morphet state some of the reasons for the differences between concepts and practices as: (1) unresolved conflicts of opinion

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[6]Committee for the White House Conference on Education, A Report to the President (Washington, D.C.: Superintendent of Documents, Government Printing Office, 1956), p. 4.

[7]John K. Norton, ed., Changing Demands on Education and Their Fiscal Implications (Washington, D.C.: National Committee for Support of the Public Schools, 1963), pp. 45-51.

[8]Eli Ginzberg, Human Resources: The Wealth of the Nation (New York: Simon and Schuster, 1958), p. 53.

regarding the place and role of public education, (2) reliance upon outmoded forms of taxation for school support, (3) inequities in local ability, (4) obsolete and antiquated school district structure, (5) tendency to continue the status quo, regardless of desirability, and (6) ineffective leadership.[9]

Quality and Variations in School Support

Conant has recently dramatized inequality in educational opportunity from another dimension. He has pointed out the shocking differences in educational opportunity in different school districts within great metropolitan areas. He concludes: "The contrasts in the money spent per pupil in wealthy suburban schools and in slum schools of the large cities challenges the concept of equality of opportunity in American public education."[10]

The conditions in our rural areas and in city slums are related. A recent report of the Educational Policies Commission points out that large scale migration fails to improve the situation of the disadvantaged. The report summarizes the situation thus:

> Millions of disadvantaged Americans are congregated today in congested sections of the large cities and in the rural areas. It is valid to ask what America means to these millions of people. Certainly it has not been for them a land of equal opportunity. The schools present the best hope for overcoming their cultural handicap. This has been demonstrated repeatedly wherever the efforts of skillful educators and the support of an understanding community have combined to make schools the mighty instruments which only schools can be. If the public fully backs its schools--

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[9]R. L. Johns and E. L. Morphet, Financing the Public Schools (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1960), pp. 8-11.

[10]James B. Conant, Slums and Suburbs: A Commentary on Schools in Metropolitan Areas (New York: McGraw-Hill Book Co., 1961), pp. 145-46.

and only if it does--the time may come when no American is culturally disadvantaged.[11]

A study conducted by Norton and Lawler almost two decades ago revealed the full range of expenditures per pupil of school districts in the United States. It showed that the highest supported school districts were spending 60 times as much per pupil as those with lowest per pupil expenditures.[12] Per pupil average expenditure in 1962 for current expenses ranged from over $500 in three states (New York, New Jersey, and Illinois) to under $250 in three states (South Carolina, Tennessee, and Mississippi). These figures are state averages; they do not reveal the full extent of unequal financial support of public schools within states. Approximately as many children in each state get a better or less well-financed schooling than these averages indicate.[13]

The Financial Needs of Quality Programs

A number of responsible lay and professional groups have estimated the financial support necessary for the public schools to meet the rising demands for higher quality programs.

In 1954, the Finance Committee of the National Citizens Commission for the Public Schools noted the need for "an unremitting effort

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[11]Educational Policies Commission, Education and the Disadvantaged American (Washington, D.C.: National Education Association, 1962), p. 38.

[12]John K. Norton and Eugene S. Lawler, Unfinished Business in American Education (Washington, D. C.: National Education Association and American Council on Education, 1946), p. 4.

[13]National Education Association, Research Division, Ranking of the States, 1962, Research Report 1962-R1 (Washington, D. C.: The Association, 1962), p. 32.

to meet the growing deficit in equipment, in school buildings, and in teachers."[14]

The Committee for the White House Conference reported in 1956 as follows:

> We recommend that a new look be taken at the entire question of how much money this society should spend on education. In view of the recommendations of this Committee concerning the objectives of education, teachers and buildings, it seems obvious that within the next decade the dollars spent on education in this Nation should be approximately doubled. Such an increase in expenditure would be an accurate reflection of the importance of quality education in this society . . . . Good schools are admittedly expensive, but not nearly so expensive in the long run as poor ones.[15]

The special committee dealing with the financing of education at the White House Conference emphasized "the American people want and need not only more schools, but better schools. To meet these needs we must spend more money."[16]

A 1958 estimate of the future costs of quality education was made under the auspices of the Rockefeller Brothers Fund. They concluded:

> Even allowing for considerably greater efficiency in the use of educational funds, it is likely that ten years hence our schools and colleges will require at least double their present level of financial support to handle our growing student population . . . . All of the problems of the schools lead us back sooner or later to one basic problem--financing.[17]

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[14]National Citizens Commission for the Public Schools, Public Education Finance Committee. Financing Public Education in the Decade Ahead (New York: the Commission, 1954), Foreword.

[15]Committee for the White House Conference, op. cit., pp. 6-7.

[16]Ibid., p. 51.

[17]Rockefeller Brothers Fund, The Pursuit of Excellence: Education and the Future of America. Panel Report V of the Special Studies Project (Garden City, N. Y.: Doubleday and Co., 1958), p. 34.

Another study under the auspices of the Committee for Economic Development comes to this conclusion:

> The public schools have not, thus far, been engulfed by the wave of school-age children. The resources going into public education have, in fact, been increasing somewhat faster than enrollments, although clearly less than is necessary to meet widespread desire for excellence.[18]

The conclusions of the Committee for Economic Development were not accepted by all members. William Benton, in dissent, stated that the recommendations in the report did not match the national emergency.[19]

Numerous other statements have given considered views concerning future responsibilities and needs of quality education. One such statement was made by Walter Lippman in 1954. He asked: "Can it be denied that the educational effort is adequate? I do not mean that we are doing a little too late. I mean that we are doing much too little."[20]

The Rockefeller Report referred to earlier reached this general conclusion concerning what it would take to achieve excellence in education:

> It will not be enough to meet the problem grudgingly or with a little more money. The Nation's need for good education is immediate, and good education is expensive. That is a fact which the American people have never been quite prepared to face . . . .
>
> An educational system grudgingly and tardily patched to meet the needs of the moment will be perpetually out of date. We must build for the future in education as daringly and aggressively as

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[18]Committee for Economic Development, Research and Policy Committee, Paying for Better Schools (New York: Committee for Economic Development, 1959), p. 14.

[19]Ibid., p. 6.

[20]Walter Lippman, op. cit., p. 24.

we have built other aspects of our national life in the past.[21]

A recent conference of bipartisan community leaders concluded:

> Substantial increases in expenditures for public schools will be required if economic and other returns from investments in human capital are to be maximized. While money is not everything in providing quality schooling, it is something. Quality schools almost universally are high-expenditure schools. The problem is one of making additional funds count most in buying the quality of schooling demanded by the type of society and economy to which we aspire.[22]

Criticism of Emphasis on Cost-Quality Relationship

Freeman, after extensive studies in school finance, concluded that (1) methods should be adopted for a fuller and more effective utilization of teachers and school facilities, (2) schools should stress and concentrate on subject-matter teaching and eliminate frills, (3) television, films, and other technological methods of saving manpower should be adopted, and (4) the quality of school education will be lifted but school funds need not rise much beyond the growth rate of national income.[23]

Regarding public support of education, Freeman says:

> The American people have loyally and faithfully supported their schools. The record of steeply increasing school revenues is nothing short of spectacular and makes no persuasive case for holding insufficient funds responsible for shortcoming in the product of our public school system.[24]

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[21]Rockefeller Brothers Fund, op. cit., p. 33.

[22]John K. Norton, ed., Changing Demands on Education, op. cit., p. 33.

[23]Roger L. Freeman, School Needs in the Decades Ahead, Vol. I: Financing the Public Schools (Washington, D.C.: The Institute for Social Science Research, 1958), pp. 1-27.

[24]Ibid., Foreword.

Freeman further proposes that the choice in setting future policies does not necessarily lie between high-priced good schools and low-priced bad schools. The alternative suggested is between well-organized schools which stress academic achievement and can be operated at a moderate cost, and "life-adjustment" type schools which cost more and give less.[25]

Clark subscribes to the basic relationship between cost and quality and indicates that to some extent higher quality education can be bought and is a good investment.[26] Regarding quality education he summarizes as follows:

> Any American community can get a great increase in the quality of its schools with the resources it now uses by introducing methods and techniques that have been successful in other communities. Furthermore, any community can get a further rise in quality if it uses more of its resources for education . . . . For greater additional increases in quality are possible with more drastic changes in organization and technology. Cost is a factor in quality, but other things are more important.[27]

How Should Schools Be Judged?

All public institutions in a democracy benefit from continuing reassessment. The schools are no exception. Educational policy in the United States is public policy. It is probable that most of the arguments about what schools are doing or not doing, or what constitutes quality education, is firmly embedded in the value system of the various proponents and critics. Vincent and MacGregor analyzed these differences in terms of the "yardsticks" used by the various evaluators:

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[25]Ibid., pp. 26-27.

[26]Harold F. Clark, Cost and Quality in Public Education, Vol. 5: The Economics and Politics of Public Education (Syracuse, N. Y.: Syracuse University Press, 1963), pp. 50-51.

[27]Ibid., p. 52.

(1) People like Bestor use a yardstick based on the criterion of stability. This is logical since Bestor is a historian concerned with traditions and culture handed down from the past. (2) Zoll, on the other hand, promotes a criterion of economy. Whatever type of educational job is done should be accomplished with the barest minimum of funds. (3) Rickover seems to be totally concerned with a criterion of liberty versus license. He is in favor of taking educational decision making out of the hands of local boards and individual students. (4) Conant is more concerned with the criterion of equality of opportunity. The promotion of minimum foundation type programs to provide every individual with his chance is common in this philosophy. Finally (5) professional students of education tend to be most sensitive to the criterion of adaptability or betterment. Their judgments of schools are usually in terms of up-to-dateness of procedure, responsiveness to the demands of changing society, betterment of program over the years.[28]

Values and Evaluation

Melby makes a plea for giving education a higher place on our scale of values. He concludes:

> The first thing we need to do is to give education a new place in our society. Education suffers today because it does not have enough money but if suffers even more because of its place in society, because instead of being a central concern in our way of life it is an ancillary endeavor . . . . As a people we shall never secure the educational power we need unless we can give education so high a place in our society that it becomes a matter of central concern rather than of secondary attention.[29]

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[28]William Vincent and Archie MacGregor, 1959 Review of Fiscal Policy for Public Education In New York State - Public Tests of School Quality (New York: New York State Educational Conference Board, 1960), pp. 1-2.

[29]Ernest O. Melby, Education for Renewed Faith in Freedom (Columbus, Ohio: The Ohio State University Press, 1959), pp. 68-69.

The National School Boards Association and the American Association of School Administrators firmly believe that there are identifiable criteria of excellence which should undergird any evaluation of the school program. These criteria are set forth as follows: (1) evaluation should be based on stated objectives, (2) evaluation should be based on intimate and comprehensive knowledge of the community, (3) evaluation should be a continuous activity, (4) evaluation should be comprehensive, (5) evaluation should be a cooperative process involving many people, (6) evaluation should identify strengths as well as deficiencies, (7) evaluation should involve many measuring instruments, (8) evaluation should be based on knowledge of children and youth, (9) evaluation requires a school board to look at itself, (10) evaluation should appraise existing practices affecting the staff, (11) evaluation is based on the belief that what people think makes a difference, and (12) evaluation should culminate in self-improvement.[30]

From the cooperative efforts of these organizations a survey of evaluative procedures in twenty-eight selected school districts was made. A panorama of approaches to evaluation is presented in the fourteen publications entitled Quest for Quality.[31] The author concluded:

> The goals that are established and the qualitative standards that are chosen for judging progress toward goals both are related to the values held in the school and the community . . . . Goals may be defined in a variety of ways . . . . Evaluation is determining how well you are doing whatever you claim to be doing.[32]

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[30]American Association of School Administrators and National School Boards Association, Judging Schools with Wisdom (Washington, D. C.: The Association, 1959), pp. 1-11.

[31]American Association of School Administrators and National School Boards Association, Quest for Quality (Washington, D. C.: National Education Association, 1960).

[32]Ibid., "Keys to Quality," Booklet 14, pp. 3-6.

Emphasis on Quality Education

Henry H. Hill in discussing quality education, present and future, emphasized these perceptions of educational quality: (1) Education in the past was for a few people, (2) Education at the present is designed for most of the people, (3) Quality education for the present should mean excellence in every field of endeavor for all pupils who attend schools, (4) All pupils will not be taking the same subjects; neither will they be achieving at the same rate; but the goal of excellence should be the common factor, (5) Those who advocate only classical education as quality education believe in a restrictive, scholarly kind of effort, attainable never in the history of man by more than two or thess per cent of the people, (6) What happens to the remaining ninety-seven per cent is a matter of concern to all thinking citizens.[33]

Chase in analyzing the future of public education summarizes his comments on excellence in education or quality education as follows:

> I am convinced that although weariness and disillusionment may set in when we discover that we cannot bring excellence into being by decree, the forces that demand quality in education are so strong that unless we are going to give way to defeat, the emphasis on quality has to continue.[34]

Callahan also considers the relationship of educational quality to organizational patterns and to financial support in saying:

> It is true some kinds of teaching and learning can be carried out in large lecture classes or through television, but other vital

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[33]Henry H. Hill, "Quality Education - Present and Future," Bulletin of the Bureau of School Service (Lexington, Ky.: College of Education, University of Kentucky, March, 1959), pp. 5-14.

[34]Francis S. Chase, "The Next 50 Years in Public Education," Problems and Opportunities in Financing Education (Washington, D. C.: Committee on Tax Education and School Finance, National Education Association, 1959), p. 12.

> aspects of the education of free men cannot. Until every child has part of his work in small classes or seminars with fine teachers who have a reasonable teaching load, we will not really have given the American high school, or democracy for that matter, a fair trial. To do this, America will need to break with its traditional practice, strengthened so much in the age of efficiency, of asking how our schools can be operated most economically and begin asking instead what steps need to be taken to provide an excellent education for all our children. We must face the fact that there is no cheap, easy way to educate a human being and that a free society cannot endure without educated men.[35]

John Dewey's concern with the societal need for quality education could as easily have been voiced in 1960 as it was in 1900. Dewey's philosophical view held that:

> What the best and wisest parent wants for his own child, that must the community want for all its children. Any other ideal for our schools is narrow and unlovely; acted upon it destroys our democracy.[36]

Summary

1. The controversy over the role of education in our society has assumed major importance in recent years because of events which have led to its consideration as an instrument of national strength and survival in a world of growing complexity.

2. It is clear that if we are about to make wise decisions on educational policy, we must find some way to combine the knowledge of the professional with the wishes of the citizen and the needs of the society. The shocking fact is apparent that while the United States

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[35]Raymond E. Callahan, Education and the Cult of Efficiency (Chicago, Ill.: The University of Chicago Press, 1962), p. 264.

[36]John Dewey, The School and Society (Chicago, Ill.: University of Chicago Press, 1900), p. 19.

stands for equality of opportunity, it permits gross inequalities in educational opportunity,

3. A number of professional and lay committees have estimated what it would cost to finance quality educational programs in all communities in the United States. They agree that there must be a substantial increase in school expenditures to achieve this end. Their estimates are that approximately a doubling of present expenditures for public schools will be needed during the 1960's. There is agreement and concern for the current wide variations in the quality of schools that are in considerable degree a result of enormous and indefensible differences in the financial support of schools in different regions and localities. Attention is being focused on states and communities with low levels of financial ability which are the sources of millions of disadvantaged citizens.

4. There appears to be agreement that adequate support of quality public school programs will require decisive action on the part of many citizens. Leadership--lay and professional--is essential in developing the nation's sense of values, the outcomes the people look for in education, and the willingness of the people to support quality school programs.

5. Considerable attention has been given to the identification of criteria that may be used in evaluating and judging schools. There appears to be great differences of opinion regarding what the schools shall be and do. Concern with the classification of specific judgments of school quality is being identified in terms of what members of the public think.

6. There appear to be few differences of opinion regarding cost-quality relationships. There is great concern that the fiscal obstacles that now block the road to adequate financial support for public education be removed. Considerable agreement is found in the

premise that the rewards of decisive and intelligent action in providing excellent schools everywhere in the United States would be substantial and the penalties of failure in this regard would be severe.

Instrumentation

The preceding section has shown that in no period of our history have educators, lay citizens, government officials, and almost all other groups, been as concerned as they are at the present time with the quality of education in public schools. The concern for quality has become, some speakers have declared, an issue of national policy. One educator has warned: "We run the grave risk . . . that the term 'quality,' as applied to teaching and learning, will become merely another educational catch-word."[37]

Introduction

Improving the quality of educational programs has been a continuing need which has challenged the public school almost since its founding. The evaluative instruments reviewed in this section are chosen to indicate varied approaches to the problem of devising instrumentation to accurately measure the multiple facets of school quality and the forces operating upon them.

The methods and procedures used in quality evaluation determine the type of measurement and assessment instruments to be used. Previous systematic studies of school quality have been based on evaluation of either process or product. Evaluation of process is approached in various ways. The items used range from short lists of external factors such as length of school term and holding power to appraisal

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[37]Arthur W. Foshay, "The Search for Quality in Education," Horace Mann-Lincoln Institute Interim Report (New York: Teachers' College, Columbia University, 1959), p. 1.

of the over-all design and operation of the program with lists of items descriptive of what is taught and how it is taught. From such measures the quality of the product is estimated from the quality of the process. From tests of school achievement, grades, attitude, and adjustment inventories the quality of the product is estimated directly from the excellence of its measurable facets. In a summary of important educational quality research covering over forty years, Mort found that sixty-four per cent of the studies used process-type quality measurements, twenty per cent used tests of achievement or product type quality determinates, and the remaining sixteen per cent used social and economic characteristics of the adult population in longitudinal studies.[38]

The quality measurement instruments reviewed for this study are contained within three general classifications: (1) instruments used in evaluations organized about local or regionally defined goals, values, and objectives, (2) appraisements designed for use in evaluating varied school programs and organizational patterns, and (3) measures used in empirical studies concerning the effects of public school education on aspects of adult life such as level of economic development and output and extent of public expectancy.

Evaluation of Quality Based Upon Locally Defined Values, Goals, and Objectives

An extensively utilized type of evaluation involves the basic principle that a school program should be evaluated in terms of its established goals and the extent to which it meets the needs of children in the process. A significant example of this type of evaluative

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[38]Paul R. Mort, Walter C. Reusser, John W. Polley, Public School Finance (New York: McGraw-Hill Book Co., 1960), p. 80.

instrument is the Evaluative Criteria of the National Study of Secondary School Evaluation.[39] The contents of this instrument are: (1) a guide for the statement of philosophy and objectives to be accomplished prior to the evaluation; (2) compilation of school and community factual data; (3) extensive series of checklists (twenty-seven) giving criteria for analyzing and appraising (a) general principles underlying the program of the school, (b) curriculum development procedures, (c) program of studies, including extent and nature of offerings, (d) general outcomes of the program of studies, (e) special characteristics of the program of studies, and (f) general evaluation of the program of studies with five-point rating scales of the checklists that are used; (4) charts for statistical and graphical summary of evaluations. The rating of the total school program is based upon the average of ratings for each category. A self-evaluation is recommended to be completed first by professional educators and lay citizens followed by a visiting evaluating committee of professional educators.

Another example of an evaluative instrument dependent upon locally defined objectives is Evaluating the Elementary School: A Guide for Cooperative Study which includes five parts: (1) Formulation of values and goals, (2) Listing of functions, (3) School program, (4) Resources, and (5) Plans for improvement.[40] Sections A and B of the guide provide a means of examining the existing values of the total educational program and related practices. Sections C and D serve as guides for studying and planning the means of improvement of the school program and use of resources. There is no quantitative or

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[39]National Study of Secondary School Evaluation, Evaluative Criteria (Washington, D. C.: The Study, 1960), pp. 3-4.

[40]Southern Association of Secondary Schools, Evaluating the Elementary School: A Guide for Cooperative Study (Atlanta: Commission on Research and Service, the Association, 1951).

qualitative rating of existing practices as included in the Evaluative Criteria. Section E concerns the planning of cooperative and coordinated programs of action toward school improvement.

Similar types of evaluative instruments based on locally defined goals are widely used by state and regional accrediting agencies. Typical of this type of guide or bench mark are the Criteria for Accreditation,[41] University of Michigan and the Policies, Regulations, and Criteria for the Approval of Secondary Schools,[42] formulated by the North Central Association of Colleges and Secondary Schools. The criteria are instruments for continual self-evaluation by local professional and lay citizens as well as guides for visitation teams. Both instruments include the following general categories: (1) philosophy and objectives, (2) the educational program, (3) organization, support and control, (4) the school staff, (5) the library and instructional materials and equipment, (6) administrative and supervisory services, (7) school plant, (8) the school year, day, and week, (9) requirements for graduation, pupil-load and credit, and (10) evaluation, guidance and testing. Schools accredited by these agencies are encouraged to develop objectives and purposes to meet the specialized needs of their pupils and communities with broad educational programs and students' activities appropriate to local goals and objectives. Observations and evaluations are completed in written summary form; no numerical ratings are used.

The National Education Association booklet, "How Good Are Your Schools?" provides a guide for evaluation by parent-teacher

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[41]The University of Michigan, Criteria for Accreditation (Ann Arbor: Bureau of School Services, the University of Michigan, 1961), pp. 1-25.

[42]North Central Association of Colleges and Secondary Schools, Policies, Regulations, and Criteria for Approval of Secondary Schools (Chicago: The Association, 1961).

groups, citizens' committees or other lay groups. The booklet is designed to stimulate concern and study of the following major elements of an effective school system: (1) the school program as a whole, (2) the elementary school program, (3) the junior high school, (4) the senior high school, (5) education for older youth and adults, (6) competency and qualification of teachers, (7) materials of instruction, (8) buildings and equipment, (9) administrative and supervisory staff, (10) adequacy of finance, (11) board of education, (12) citizen interest.[43] Specific questions referring to all educational levels are asked in each section to stimulate interest and study.

The National School Boards Association pamphlet, Yardsticks for Public Schools,[44] is designed as a citizens' introduction to the study of educational quality. Accompanying the booklet is a "Self-Quiz on School Quality," a series of 80 statements given in seven general areas, designed to provide an overall view of the public school and its quality. The rater is asked to make preliminary judgments on how well the schools are prepared to carry out its functions in the following areas: (1) the goals of the school, (2) the school program, (3) teachers and teaching, (4) school buildings and equipment, (5) finances, (6) organization and administration, and (7) citizen action. The identification of additional areas in which more detailed and careful study may be needed is emphasized. This guide to quality evaluation is designed to permit citizens to measure the tangible factors that contribute to better schools and is illustrative of increased citizen interest and involvement in the development of goals and policies for public education.

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[43]National Education Association, How Good Are Your Schools? (Washington, D. C.: The Association, 1958), pp. 1-31.

[44]National School Boards Association, Yardsticks for Public Schools (Evanston, Illinois: The Association, 1959).

Evaluation of Quality Based Upon Normative - Type Measurement

Achievement Tests as Quality Indices

The quality of a school system is measured by its impact upon pupils; whether the potential is high, average, or low. For example, competency in the basic skills, appreciation of and interests in knowledge, knowledge of and interest in our cultural heritage, vocational and educational awareness and planning, human relations, and citizenship values reflect the competency of the school.

Achievement tests such as the Iowa Tests of Basic Skills[45] for use in elementary and junior high school levels, and the Iowa Tests of Educational Development[46] at the high school level provide a partial estimate of quality of any system. The first instrument includes eleven subtests. A composite score is provided as a general index of pupil performance. There are also separate scores for five major tests in the battery: vocabulary, reading comprehension, language skills, work-study skills, and arithmetic skills. In all, fifteen different achievement scores are provided by this test. The second instrument provides a composite score for general performance and separate scores on the following nine subtests: (1) understanding of basic social concepts, (2) background in natural science, (3) correctness and appropriateness of expression, (4) ability to do quantitative thinking, (5) ability to interpret reading materials in social studies, (6) ability to interpret reading materials in the natural sciences,

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[45]Iowa Tests of Basic Skills (Boston: Houghton Mifflin Company, 1956).

[46]Iowa Tests of Educational Development (Chicago: Science Research Associates, 1958).

(7) ability to interpret library materials, (8) general vocabulary, and (9) uses of sources of information. These two measures of quality in school systems were used by the New York State Education Department to study the relation of scores of tests to level of school expenditure. The findings of the 1954 Cooperative Study of Educational Programs in New York State Public Elementary Schools[47] and the Quality Measurement Project[48] are summarized later in this chapter.

Bloom and Statler[49] of the University of Chicago in 1957 reported an extensive study concerned with factors associated with educational achievement as measured by standard Tests of General Educational Development. Many sub-test scores are provided in (1) English composition, (2) the social studies, (3) the natural sciences, (4) literature, and (5) mathematics. According to Bloom and Statler, "These tests were designed to measure as directly as possible the attainment of some of the ultimate objectives of the entire program of general education."[50] An analysis of the findings of this study and other research utilizing pupil achievement scores as measures of quality are dealt with subsequently in this chapter.

Quality Measured by Administrative and Structural Setting Criteria

Some research studies have defined school quality in such terms as type and number of teachers employed, adequacy of materials and

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[47]New York State Educational Conference Board, What Good Schools Do for Children (Albany: the Board, 1954).

[48]William D. Firman et al., Procedures in School Quality Evaluation: A Second Report of the Quality Measurement Project (Albany: New York State Education Department, 1961).

[49]Benjamin S. Bloom and Charles R. Statler, "Changes in the States on the Tests of General Educational Development from 1943 to 1955," School Review 65: 204-21 (Summer, 1957).

[50]Ibid., p. 205.

facilities, and length of school term or amount of schooling provided. Leonard Ayres is generally credited with making the initial scientific inquiry into educational quality. In his Index which follows, Ayres used ten items, five of which had to do with the financial setting and five of which had to do with tangible characteristics of the school program:

1. Per cent of school population attending school daily.
2. Average days attended by each child of school age.
3. Average number of days schools were kept open.
4. Per cent that high school attendance was of total attendance.
5. Per cent that boys were of girls in high schools.
6. Average annual expenditure per child attending.
7. Average annual expenditure per child of school age.
8. Average annual expenditure per teacher employed.
9. Expenditure per pupil for purposes other than teachers' salaries.
10. Expenditure per teacher for salaries.

The intercorrelation between the two sets of factors was found to be .78.[51]

Another study utilizing measures of educational efficiency as quality criteria was reported in 1936. D. T. Ferrell found a strong relationship between quality and expenditure when quality was defined by his Six Item Index:

Index:

1. Per cent average daily attendance is of the census.
2. Holding power as measured by the average of the sum of
   (a) per cent eighth grade enrollment is of first grade enrollment, and
   (b) per cent high school enrollment is of the total public school enrollment.
3. Per cent of teachers employed who have a given amount of preparation.

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[51]Leonard P. Ayres, An Index Number for State School Systems (New York: Russell Sage Foundation, 1920).

4. Per cent of teachers employed who have had at least three years or more of teaching experience.
5. Per cent the number of teachers is of the number of pupils.
6. Per cent the number of days in the elementary school term is of 200 days.[52]

Mort reported two studies concerned largely with the relationship of school costs to teaching personnel and other school facilities. In 1933 a study in New Jersey[53] and another in 1934 in Maine,[54] the main areas of concern in an evaluative scale included: (1) administrative services, (2) supervisory services, (3) services to typical children, (4) school buildings, (5) instructional staff, (6) classroom procedures, (7) course offerings, and (8) home-school contacts.

Hirch used as a measure of educational quality an index comprised of six basic factors:

1. The number of teachers per 100 pupils in average daily attendance.
2. The number of college hours of education of the average teacher.
3. The average teacher's salary
4. The per cent of teachers with more than 10 years of experience.
5. The number of high school credit units offered.
6. The per cent of high school seniors entering college.[55]

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[52]Doctor Thomas Ferrell, Relation Between Current Expenditures and Certain Measures of Educational Efficiency in Kentucky County and Graded School Systems, George Peabody College for Teachers, Contributions to Education No. 216 (Richmond, Kentucky: Eastern State Teachers College, 1937).

[53]Paul R. Mort, director, Reconstruction of the Systems of Public Support in the State of New Jersey, Report of the Governor's School Survey Commission, Vol. II. (Trenton: The Commission, 1933).

[54]Paul R. Mort, director, The Financing of the Public Schools of Maine (Augusta: Maine School Finance Commission, 1934).

[55]Werner Z. Hirsch, Analysis of Rising Costs of Public Education (Washington: Joint Economic Committee, 1959).

In a publication several years ago, the Educational Policies Commission proposed a formula by which any community might estimate current needs for quality schools:

> In a school district of adequate size the minimum annual per pupil current expenditure needed today to provide a good educational program is about twelve per cent of the salary necessary to employ a qualified beginning teacher in that district.[56]

Quality As Emphasis on Fundamental Objectives and Sound Procedures

A third type of instrumentation designed to assess educational quality seeks to go beyond quantitative data on personnel, facilities or test scores as measures of quality. This type of study assumes that to test the inner essence of educational quality it is necessary to go into a school system and carefully observe what is going on there. The concepts of quality measurement contained in the previously discussed instruments are frequently included in this level of measurement. Many of the instruments developed in this area are the result of the work of Mort and his associates at Columbia University. They are basically an attempt to measure the quality of the product from the quality of the process.

Mort and Cornell developed their Guide for the Self-Appraisal of School Systems[57] in 1937. This evaluative device, popularly known as the "Lag Book" rendered a score for what was defined as the "Adaptability" of the school system. This theory proposes that the speed with which a district or even an individual teacher takes on new,

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[56]Educational Policies Commission, An Essay on Quality in Public Education (Washington: National Education Association, 1959), pp. 24-25.

[57]Paul R. Mort and Frances G. Cornell, Guide for Self-Appraisal of School Systems (New York: Bureau of Publication, Teachers' College, Columbia University, 1937).

acceptable educational ideas is the best indication of educational quality. This instrument provides a checklist of 183 items purported to represent improvements in educational practice that had occurred during this century. Fifty-eight of the 183 items dealt with classroom instruction, another 86 dealt with educational leadership, and the remainder with physical facilities and business management. The instrument sought to determine which communities had more speedily taken on improved practices. The degree to which they had done this was taken as an indication of their adaptability.

Another observational instrument of greater range but of less objective character was developed in 1942. A Guide for the Analysis and Description of Public School Services,[58] referred to as the "Blue Book," contained 1091 items reflecting practices felt to be quality determinants. The original Mort-Burke-Fisk instrument provided for classification of the data into 15 divisions related to purpose. Vincent reported that 73 per cent of the items in the guide correlated with expenditure.[59]

The testing and analysis of these instruments laid the basis for the development of The Growing Edge[60] as a measure of adaptability. Each item in the instrument is a description of a specific school practice. The high school form consists of 85 items; the

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[58]Paul R. Mort, Arvid J. Burke, and Robert S. Fisk, A Guide for the Analysis and Description of Public School Services (New York: Institute of Educational Research, Teachers' College, Columbia University, 1942).

[59]New York State Educational Conference Board, What Education Our Money Buys (Albany, New York: The Board, 1943).

[60]Paul R. Mort, William S. Vincent, and Clarence A. Newell, The Growing Edge: An Instrument for Measuring the Adaptability of School Systems (New York: Metropolitan School Study Council, Teachers College, Columbia University, 1946).

elementary form contains 64 items. The specific practices included in this instrument are organized around four major facets of educational purpose: (1) the teaching of skills in a real or realistic fashion and the teaching of a wide range of skills, (2) the teaching of areas of knowledge realistically, (3) the discovery and development of special aptitudes of individuals through test and tryout, and (4) the development of gross behavior patterns, like citizenship, character, and thinking. The instrument may be applied as a self-evaluation guide or by outside observers. Tests of reliability made by the split-halves technique yielded a coefficient of reliability of .88 for the high school form and .89 for the elementary form. An indication of the validity of the instrument is revealed by an inter-correlation of .68 between the two forms.

Mort and his associates have studied hundreds of factors in the effort to determine just what it is that makes for quality schools. The relationship of these factors to quality and their relation to each other have been subjected to a great variety of checks and counter-checks in hundreds of studies carried on over the years. The complete review of these studies is contained in the three volume text, Administration for Adaptability.[61]

Cornell, Lindvall, and Saupe developed and tested an instrument called the Student Perception Inventory.[62] The measuring instrument is directed at descriptive measurement of the school institution, not the learner or the product of the educative process. It attempts to

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[61]Donald Ross, Editor, Administration for Adaptability (New York: Institute of Administrative Research, Teachers College, Columbia University, 1958), 750 pp.

[62]Frances G. Cornell, Carl M. Lindvall, and Joe L. Saupe, An Exploratory Measurement of Individualities of School and Classrooms (Urbana, Illinois: Bureau of Educational Research, College of Education, University of Illinois, 1953).

measure differences in classrooms as a means of characterizing differences of school systems. The Inventory is administered to the students of a classroom. The content of the test is comprised of 40 items which are scored and ten items which purports to divert the teacher and student from the real purpose of the test. The content of the items is divided into four parts: (1) Differentiation, (2) Social Organization, (3) Pupil Initiative, and (4) content. The validity of the two test forms produces a product-moment correlation of .85. An estimate of equivalence reliability of the classroom mean scores is shown as .94 according to the Spearman-Brown Prophecy Formula.

Measurement of Quality Based on Economic Output, Public Expectancy, and Adult Life

In the late 1930's Thorndike carried on a study seeking to trace the relative causal effects of education and other factors of socio-economic concern. Thorndike's G Index[63] or goodness index, was made up of five health items, seven educational items, two recreational items, eight economic and social items, five "creative comfort" items and nine other miscellaneous items. In his analysis Thorndike compared the social and educational scene measured by his index with the social and educational conditions of 1900. As measures of educational characteristics of 1900, five items chosen from the Ayres Index[64] were used. The average correlation of the five educational items from 1900 with the 1930 G score was .41.

The measurement of public understanding and expectancy of

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[63]Edward L. Thorndike, Education as Cause and as Symptom (New York: The Macmillan Company, 1939).

[64]Ayres, op. cit.

education were the purposes for the development of What Should Our Schools Do?[65] by Mort and others. The instrument was composed of one hundred statements designed to measure the sentiment and feelings of parents toward newer ideas and practices in education.

The Time Scale was developed as a measure to be used in assessing community expectancy of schools in terms of their capacity to adapt to new social needs and forces. Twenty-two adaptations were selected to constitute a good sample of the educational inventions and practices which were in the process of diffusion throughout the American educational system. The twenty-two items are identified in terms of their presence and date of introduction and are scordd by means of an index. The reliability coefficient (split-half) for a revised thirty-three item Time Scale is .84.[66]

Measures of public understanding have been obtained largely through the use of structured polls. Under the auspices of the Metropolitan School Study Council two polls were developed by W. Donald Walling to reflect professional concern for adaptability.[67] Walling's Poll Number One contrasts educational procedures typical of the year 1900 with education more descriptive of schools of 1950. The poll contains ten items in each category and gives the respondent an opportunity to pick and choose at will among the 20 characteristics.

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[65]Paul R. Mort, Frances G. Cornell, and Norman Hinton, What Should Our Schools Do?: A Poll of Public Opinion on the School Program (New York: Bureau of Publication, Teachers College, Columbia University, 1938).

[66]Paul R. Mort and Truman Pierce, A Time Scale for Measuring the Adaptability of School Systems (New York: Metropolitan School Study Council, Teachers College, Columbia University, 1947).

[67]W. Donald Walling, A Study of Public Opinion About Schools (New York: Metropolitan School Study Council, Teachers College, Columbia University, 1952).

Walling's Poll Number Two is likewise a measure whose criterion is adaptability. It contains 16 statements about what schools can do. These range from reducing the auto accident rate to achieving world peace. The respondent indicates whether he thinks the schools can do much, little, or nothing in connection with each objective.

Mort's Sequential Simplex of Factors

A highly organized and integrated empirical model of the behavior of local schools, called the sequential simplex, has been developed over the years by Mort and his associates.[68] The model focuses on explaining the quality of the educational product in local school systems defined by the number of, and speed of adoption of, certain educational practices. The factors that influence adaptations are grouped into five categories of varying directness in impact on the auality of education: (1) legal structure and administration, (2) status measures of school and community, (3) educational climate, (4) school system policy, and (5) the individual school. This model does provide some insights into the interrelationship of changing educational goals, and the spending necessary to achieve them. The factors explaining school spending and even the amount spent are used in the sequential simplex as independent variables that help explain the quality of education. In this study school cost factors including expenditure is the dependent variable to be explained by the perceptions of other factors. Mort's framework, therefore, is not appropriate in this study.

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[68]Paul R. Mort and Orlando F. Furno, Theory and Synthesis of a Sequential Simplex (New York: Institute of Administrative Research, Teachers College, Columbia University, 1960).

Summary

1. Some measures of school quality have been designed to measure factors of educational quality in such terms as type and number of teachers employed, adequacy of materials and facilities, and amount of schooling provided. These instruments are based on the premise that better educational results are obtained when enough resources are diverted into salaries, equipment and facilities. This type of evaluative instrumentation apparently has some value. Its weakness is the assumption that enough staff, more facilities, and more time in school result in better educational returns. This may be true, but is not proved by the kind of evidence measured, for the actual educational results are not determined.

2. Achievement test scores are used to measure educational quality by another group of investigators. The assumption here is that the ability to score high on tests is quality in education. Recent research has emphasized that test results may not reflect ability to apply knowledge and skills later in life and that tests measure but a small part of what a pupil should learn in school. In addition test results may reflect many factors other than education--intelligence, health, cultural experiences, socio-economic background of parents, and emotional stability.

3. The complex factors involved in designing evaluative instruments to assess quality are in part caused by the fact that the school is only one environmental factor shaping educational performance. The influences of other cultural factors cannot be denied. The definition and measurement of educational quality are in the beginning stages of development. Further research is needed in all aspects of instrument design to determine validity and reliability.

4. The outcomes of quality educational programs cannot be finally assessed at any one time by measurement, observation, or judgment. The valuation placed on any given outcome of education is in the end justified only by history.

Related Empirical and Theoretical Studies

The empirical and theoretical studies of educational quality have been investigated and considered in conformity with three categories: (1) relationships between educational quality and expenditure level; (2) relationships between educational quality and other-cost factors; and (3) relationships between quality educational programs and non-cost factors.

In the mid-twenties Columbia University began its leadership role in educational quality research. Under the direction and sponsorship of Paul R. Mort there have been many attempts to measure the quality of education and to relate it to cost. These studies contribute significantly to the research which is available and several of the more pertinent types of studies are reviewed in this section.

Level of Expenditure and Educational Quality

Expenditure Level and Achievement Test Results

Several studies have sought to relate expenditure level with results on standard tests of achievement. One of these studies was reported by Powell[69] in 1933. He gave tests of school achievement to matched groups of children in both low and high expenditure one-teacher schools in New York State. Powell found that the pupils in

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[69]Orrin E. Powell, Educational Returns at Varying Expenditure Levels (New York: Bureau of Publications, Teachers College, Columbia University, 1933).

high expenditure schools were superior by 1.44 years in every measure of school achievement over those in low expenditure schools at the end of the fifty year of school experience.

In 1938, Grimm[70] used achievement tests results to study educational opportunities in relation to cost in a statistical sample of the elementary schools of Illinois. The districts were selected so that high, middle and low expenditure schools were equally represented. He found that the pupils in the middle groups of schools were generally superior to the pupils in the low group, but that the level of discrimination between high-expenditure and middle-expenditure was slight. Children in the low expenditure schools were found to lag as much as four and five years behind pupils in the high group in reading, arithmetic, language and geography.

Bloom and Statler[71] reported a comprehensive study in 1957 concerned with the factors associated with educational achievement as measured by standard Tests of General Educational Development. Tests were administered to 35,330 high school seniors in 184 high schools in 48 states in 1943 and to 38,773 seniors in 834 high schools in 48 states in 1955. The study compared the results of the 1943 and 1955 research and presented the following observations:

1. The national level of educational competence as measured by tests of GED has risen significantly from 1943 to 1955.
2. The states vary considerably in the performance of their high school seniors on the different tests. The differences are as great in 1955 as they were in 1943.

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[70]Lester R. Grimm, Our Children's Opportunities in Relation to School Costs (Springfield: Illinois Education Association, Department of Research and Statistics, 1938).

[71]Benjamin S. Bloom and Charles R. Statler, loc. cit.

3. The differences among the various states in the pupil performance on the tests is related to differences in financial support. There is a correlation of .75 between expenditure level and school quality as measured by these tests. Average teacher salary correlated at a .75 level with pupil performance on the tests and a correlation of .73 exists between pupil performance on these tests and school expenditure ten years previously.[72]

This research emphasized that there was also a high correlation between the level of formal education of the adult population in a state and the scores made by its high school seniors in both years.

In 1954 the New York State Educational Conference Board,[73] reported on an extensive study of the relation of educational achievement in public elementary schools to level of expenditure. Over 100 school systems participated in the research and their pupils were tested in their mastery of basic skills. One of the major findings of this study was that "the schools which achieve the highest mastery of essential skills and do the most to promote all objectives cost the most."[74]

The Quality Measurement Project[75] of the New York State Education Department was created to develop improved methods for assessing the quality of school systems. Over one hundred school systems of all types were used in the exploratory study; and 70,000 children participated in testing programs of intelligence and achievement over a four year period. The Iowa Test of Basic Skills and the Iowa Tests of Educational Development were the two measures of educational quality used in this project. Among the findings were these:

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[72]Ibid., p. 220.

[73]The New York State Educational Conference Board, loc. cit.

[74]Ibid., p. 2.

[75]William D. Firman, et al., op. cit., pp. 3-19.

1. There was a strong positive correlation between the level of per pupil expenditure for instruction in the school systems and the scores on the Iowa tests, at the fourth, seventh and tenth grade levels.
2. There was a difference of approximately two grade equivalents between low and high expenditure systems in grade 4; in grade 7 there was a difference of slightly more than two grade equivalents; and in grade 10 there was a difference of four grade equivalents.
3. After statistical treatment to eliminate the variance due to parental and community influences on the educability of pupils, there was still a significant positive relationship between level of expenditure and test scores.[76]

Expenditure Level and Administrative and Structural Setting

Leonard Ayres is generally credited with making the initial scientific inquiry into the measurement of educational quality. Ranking states according to their expenditures for education between 1896 and 1920, he found high correlations between such rank and factors such as pupils staying in school, pupil attendance, and lengths of the school day and school year.[77]

Another study in the 1920's also reported on the ability of the forty-eight states to support education. Norton found that in the financially able states more money was spent per pupil, school plant was superior, pupils attended school for longer terms each year, teacher preparation levels were higher, and illiteracy rates were lower. He concluded that the general level of educational attainment of the people was significantly higher in the states which were spending more

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[76]Ibid., p. 64.

[77]Leonard P. Ayres, loc. cit.

for education than in states with low school expenditures.[78]

A study of 249 Kentucky county and city school systems was conducted by Ferrell in 1935. Using a Six-Item Index quality was measured in terms of teaching personnel, facilities, and administrative features. Ferrell found a strong relationship (r = .92) between quality as defined by his Index and expenditures and concluded that schools which spent more did a better job of holding pupils in school, had smaller classes, longer terms, and employed better prepared teachers.[79]

Studies by Mort in New Jersey (1933)[80] and Maine (1934)[81] found expenditure indexes highly and positively related to quality as measured by adequacy of staff, preparation, school plant, and provisions for atypical children.

In a more recent study Werner Z. Hirsch suggests six categories of administrative and structural factors as quality or productivity determinants and compares them with expenditure level for the period 1900-1958. Hirsch's findings indicated a correlation coefficient of over .97 between expenditure level and the variables of teachers' salaries and preparation level, proportion of high school students, average daily attendance, and pupil-teacher ratio.[82]

Expenditure Level and Adequate Setting and Procedures for Individual Growth

A landmark study of 36 Pennsylvania school systems by Mort

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[78]John K. Norton, The Ability of States to Support Education (Washington, D.C.: National Education Association, 1926).

[79]Doctor Thomas Ferrell, loc. cit.

[80]Paul R. Mort, Reconstruction of the Systems of Public Support in the State of New Jersey, op. cit., pp. 26-29.

[81]Paul R. Mort, The Financing of the Public Schools of Maine, op. cit., pp. 64-97.

[82]Werner Z. Hirsch, loc. cit.

and Cornell in 1938 gave the first comprehensive test of the adaptability theory of educational quality. The Guide for the Self-Appraisal of School Systems was devised to assess the work of the school. Mort and Cornell calculated not only the correlation between current expenditure per weighted membership unit (r = .587) but correlation between quality and a variety of other factors such as per cent of business and professional workers (r = .59) and general educational level of the adult population (r = .56). Mort and Cornell found that although level of expenditure was by no means the only factor in educational quality it accounted for more than half of the variation in the adaptability or quality scores.[83]

In the famous Regents' Inquiry in New York State in 1938, Grace and Moe ranked forty-three school systems on a five-point scale after visitation. They found that high educational efficiency is not achieved without high expenditure. Although some districts had high cost and inferior returns, no districts that had low costs got distinctly superior educational returns. After correction for sparsity a correlation of .50 was found between expenditures and quality as measured by the five-point rating scale.[84]

Strayer's survey of 138 West Virginia elementary schools representative of three expenditure levels utilized the Mort-Burke-Fisk Guide to measure school quality. This study showed that the most significant effect of high expenditure level was greater emphasis upon the characteristics of the school program that are concerned with the

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[83]Paul R. Mort and Frances G. Cornell, American Schools in Transition: How Our Schools Adapt Their Practices to Changing Needs (New York: Teachers College, Columbia University, 1941).

[84]A. G. Grace and G. A. Moe, State Aid and School Costs: Report of the Regents' Inquiry (New York: McGraw-Hill Book Company, 1938), pp. 324-329.

individual pupil and his needs.[85]

In a study of a state on the bottom of the educational support scale, McLure[86] found that variations in educational expenditure were related positively to plant adquacy, library services, availability of instructional aids, achievement test results, staff preparation and experience, and attitudes of pupils toward their schools and education in general. Quality was measured by using 153 items drawn from the instrument, What Education Our Money Buys. In emphasizing that low expenditures resulted in serious losses in educational returns, McLure concluded that:

> Schools that spend little money on pupils usually have unattractive buildings, few books, little teaching equipment and supplies, poor teaching . . . . Perhaps most important of all next to expenditure level, there must be in the minds of the layman and the educator the picture of what constitutes a good education.[87]

In 1954, James Griffis studied school facilities and procedures at three cost levels in 44 Texas school systems and based on findings derived from direct observation of 100 modern educational practices reported the scope of educational program and services consistently increased with increase in level of expenditure.[88]

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[85]George D. Strayer, director, A Report of a Survey of Public Education in the State of West Virginia (Charleston: Legislative Interim Committee, State of West Virginia, 1945), pp. 562-597.

[86]William P. McLure, Let Us Pay for the Kind of Education We Need: Report of a Study of State and Local Support of Mississippi's Schools (University of Mississippi: Bureau of Educational Research, University of Mississippi, 1948), pp. 3-29.

[87]Ibid., pp. 3, 52.

[88]James T. Griffis, Educational Production at Three Cost Levels (Houston, Texas: Gulf School Research Development Association, 1955).

Expenditure Level for Small Expense Items and Program Quality

A new area of study of cost-quality relationships was established by Brickell in his analysis of items, other than salaries of teachers and the maintenance of plant in the school budgets of 31 school systems. Brickell found that "small expenditures" had in aggregate a considerable relationship to quality. Brickell suggested that good schools do not spend more money on everything.[89]

Bothwell's research is the most recent in a series of studies similar to Bricknell's. It is concerned with gains in quality education derived from selectively increasing some small-expense items in school budgets. Bothwell found in studying 71 school systems throughout the United States that careful balance and discrimination among all items of expenditure advance high quality education, and that overemphasis in any one area of expenditure can be detrimental to achievement of quality.[90]

Expenditure Level and School-Staff Characteristics

An important study of desirable staff characteristics was made by Hilton C. Buley. Adaptability or quality scores measured by the Growing Edge were positively correlated with the faculty's average years of preparation (.58 for elementary teachers and .39 for secondary teachers). Buley found a significant, positive relationship between a district's expenditure level and average years of professional training of the staff. Other significant quality factors concerning staff were identified as frequency and amount of travel, number and types of books

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[89]Henry M. Brickell, An Analysis of Certain Non-Instructional-Staff Expenditures (New York: Teachers College, Columbia University, 1953).

[90]Bruce K. Bothwell, Creative Expenditures for Quality Education (New York: Associated Public School Systems, 1958).

and journals read, and the number of years of service in the same district.[91]

Hall[92] and Grogan[93] in similar studies of school-staff characteristics and level of expenditure found that significant relationships exist between a district's expenditure policy and certain factos of educational quality related to staff behavior, attitude, and status.

High Level Expenditure and Educational Quality

In 1949 Woollatt reported a study of some 50 high-expenditure school systems in the metropolitan area of New York City. The criterion of quality used by trained observers was the Growing Edge. This study reported that these high expenditure schools were not only doing a superior job in teaching skills, but were doing outstanding work in developing in pupils the ability to think, and building good character habits. Woollatt found no point of diminishing returns among the high, positive relationships between indexes of cost and quality.[94]

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[91]Hilton C. Buley, "Personal Characteristics and Staff Patterns Associated With the Quality of Education" (New York: Unpublished Ed. D. project, Teachers College, Columbia University, 1947), pp. 22-30.

[92]Harold D. Hall, "Relationships of Selected Characteristics of Organization to Practice in School Systems: An Exploratory Measure of the Extent and Diffusion of Administrative Procedures and Staffing Practices and Their Relationships to Selected Characteristics of School Systems" (Urbana: Unpublished Ed. D. project, University of Illinois, 1956).

[93]Robert S. Grogan, "Determination of Staff Characteristics That Should Be Assessed in Future Studies (New York: Unpublished Ed. D. project, Teachers College, Columbia University, 1961).

[94]Lorne H. Woollatt, The Cost-Quality Relationship on the Growing Edge (New York: Teachers College, Columbia University, 1949).

In 1956 with the same type of schools, Furno adjusted accumulative expenditure policies for inflation and regional differences and found a coefficient of correlation of .60 between indexes of expenditure and program quality. Furno found that drastic increases or decreases in level of expenditure in particular years are less influential in advancing quality than a long-range program of school support which is discriminating as to items and adequate in amount.[95]

Other Cost Factors and Educational Quality

Wealth or Ability

Wealth, expressed in terms of taxable property valuation in support of each child in average daily attendance was found by Pierce to relate positively with quality as measured by the Time Scale and the Growing Edge. The relation of wealth or ability to support education to the quality of education in a sample of wealthy communities established the following coefficients of correlation: (1) combined elementary and high school group, .30; (2) high school, .32; and (3) elementary school, .61.[96]

Mort and Cornell in their study of 344 communities in Pennsylvania considered as average for the nation, found the correlation of ability and adaptability was .30.[97]

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[95]Orlando F. Furno, "The Projection of School Quality from Expenditure Level" (New York: Unpublished Ed. D. project, Teachers College, Columbia University, 1956).

[96]Truman M. Pierce, Controllable Community Characteristics Related to the Quality of Education (New York: Bureau of Publications, Teachers College, Columbia University, 1947), p. 68.

[97]Paul R. Mort and Frances G. Cornell, American Schools in Transition, op. cit., pp. 139-148.

This relationship between ability and various measures of quality has been verified by other investigations. A complete and comprehensive analysis of the significance of this financial or cost factor is reported by Vincent.[98]

Effort

The relationships between aspects of school quality and tax rate taken as a direct measure of local effort have been established through numerous research ventures by Mort and his colleagues at Columbia University. Vincent reports that established correlations between quality and effort is as follows: (1) Metropolitan School Study Council districts, 1940-1945, r = .35; same districts in 1950-1955, r = .48.[99]

Need

The size of a school district or the need for educational services as measured by the number of pupils it serves has been determined to be a significant factor in relation to school quality. In Mort's Pennsylvania study size, as measured by school population was found to correlate .43 with adaptability.[100] In Pierce's study of school districts near New York City the correlations are: time scale, .33; high school, .32; and elementary school, .08.[101] The results indicate that size as measured by school population is not as closely

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[98]William S. Vincent, "Quality Control: A Rationale for Analysis of a School System," IAR Research Bulletin, Vol. I, No. 2 (January, 1961), pp. 1-7.

[99]William S. Vincent, op. cit., p. 7.

[100]Paul R. Mort and Frances G. Cornell, American Schools in Transition, op. cit., pp. 129-131.

[101]Truman M. Pierce, op. cit., p. 59.

related to adaptability in the elementary school as in the high school. Studies by Smith[102] and Ostrander[103] support previous conclusions that the relationship between size of school system and quality is more positive at the secondary level than at the elementary level.

A study by Burton Krietlow is directly related to the basic question of school size. In 1949, Kreitlow paired ten Wisconsin communities on the basis of non-reorganized and recently reorganized schools. The relationship between school quality as measured by learning opportunities and achievement and the relationship between achievement and cost were studied. In the twelfth year of this study Kreitlow concluded that boys and girls of the same range of intelligence in larger school situations showed academic achievement superior to the pupils in the non-reorganized and smaller school districts. In addition he found that the greater achievement in the larger district costs only $12 more per elementary pupil per year.[104]

Relationships of Wealth, Effort and Size

An intensive study of sixty Wisconsin school districts by the Midwest Administration Center at the University of Chicago analyzed the relationship between support factors and quality of educational

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[102]Stanley V. Smith, "Quality of Education Related to Certain Social and Administrative Characteristics of Well-Financed Rural School Districts" (New York: Unpublished Ph.D. project, Teachers College, Columbia University, 1954).

[103]Chester B. Ostrander, "A Study of Characteristics of New York State Central Schools Classified on the Basis of Enrollment Size (New York: Unpublished Ed. D. project, Teachers College, Columbia University, 1961).

[104]Burton W. Kreitlow, School District Reorganization . . . Does It Make a Difference in Your Child's Education? (Madison: Agricultural Experiment Station, University of Wisconsin, 1961).

programs as measured by trained observers. The report included these findings: School districts receiving the largest number of "excellent" ratings were those most likely to be (1) those of the greatest size, (2) those with the greatest wealth in terms of equalized valuation per resident pupil in average daily attendance, and (3) those with the highest district levy in dollars.[105]

In 1957, Turck studied the relationship between need, effort, and ability in Michigan high school districts and found: (1) size of membership and taxable wealth (ability) correlated at a .27 level; (2) school districts as they increase in size of membership (need) expend more effort (tax rate); the correlation coefficients increased from small districts, at -.08, medium, .13; and large, .19; (3) no consistent relationship (-.03) was apparent between ability and effort.[106] Another study of Michigan school districts by Rhee showed that the most contributive variable to the differences in selected financial and educational factors was either financial need or financial ability. Financial effort did not have any significant relationship with the differences of the other factors.[107]

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[105]John Guy Fowlkes and George E. Watson, School Finance and Local Planning (Chicago: The Midwest Administration Center, 1957), pp. 74-85.

[106]Merton J. Turck, Jr., "A Study of the Relationships Among and Factors of Financial Need, Effort and Ability in 581 High School Districts in Michigan" (East Lansing: Unpublished Ed. D. project, Michigan State University, 1960).

[107]Jeung Rhee, "An Analysis of Selected Aspects of the Public School Finance System in Michigan" (East Lansing: Unpublished Ph. D. project, Michigan State University, 1961).

Non-Cost Factors and Educational Quality

Relationships of Quality and Attitudes, Expectations and Values

The Walling Polls were applied by McGovern to both teachers and members of the public in 105 central New York State school districts. McGovern found a relationship of .32 between public understanding and quality (as measured by the Growing Edge) on Poll Number One. This study confirmed earlier Institute of Administrative Research studies that found that the better informed the public is, the higher the quality of its schools. McGovern also applied Walling's Poll Number Two to more than 10,000 citizens. A correlation of .34 was obtained between public understanding and quality as measured by the Growing Edge. Teachers in general scored higher than laymen on both polls. The lowest score faculty scored higher than the highest scoring lay group on Poll Number One and only two communities scored higher than the two lowest staffs on Poll Number Two. Community background seemed to have a strong influence upon public expectancy in McGovern's study. The differences between rural and suburban responses on Walling's polls seemed to show that the experiences of people and the degree of internal communication in a community relate positively whether they expect much or little from their schools.[108]

In his study of districts in the Metropolitan School Study Council, Pierce found that good will factors and expressions of understanding of what schools do correlated .69 with adaptability.[109] Ayer subjected the Pierce data to statistical factor analysis and identified wealth and

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[108]Earl McGovern, A Study of Opinion About Schools (New York: Institute of Administrative Research, Teachers College, Columbia University, 1956).

[109]Truman M. Pierce, op. cit., pp. 11-12.

cultural level as the population characteristics most strongly related to adaptability.[110]

Community Size and Quality

Studies by Mort[111] and Swanson[112] show a positive correlation between educational quality and bigness. The relationship slows in cities over 28,000 because, the researchers analyzed, the problem of two-way communication became increasingly difficult. The "we-feeling" among staff members as far as program and policies were concerned decreased measurably as community size increased beyond this figure.

Socio-Economic Factors and Quality

Shapiro conducted a series of cross-section analyses of state by state expenditures for education for 1920-1950 in terms of eleven socio-economic independent variables. Shapiro concluded that regional differences have dropped sharply since 1920 in a trend toward greater regional homogenization. In the over-all regressions state per capita personal income contributes most to the explanation of both public and societal per pupil expenditures for education.[113] Miner analyzed

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[110]Frederick L. Ayer, "An Analysis of Controllable Community Factors Related to Quality of Education" (New York: Unpublished Ph. D. Thesis, Teachers College, Columbia University, 1950).

[111]Paul R. Mort and Frances G. Cornell, American Schools in Transition, op. cit., pp. 360-362.

[112]Austin D. Swanson, "An Analysis of Factors Related to School System Quality in the Associated Public School Systems" (New York: Unpublished Ed. D. project, Teachers College, Columbia University, 1960), Chapter 5.

[113]Sherman Shapiro, "Some Socioeconomic Determinants of Expenditures for Education," Comparative Education Review (October, 1962), pp. 160-166.

educational expenditures during 1959-1960 in over 1100 local school systems in 23 states. Expenditures were studied in relation to data about the schools themselves, the communities and states in which they are located, the interrelationship between state and local financing and other relevant socio-economic factors. The levels of state per capita income are found to correlate .66 with state property valuation per capita. The effect of fiscal dependence or independence of school systems is found to influence spending with fiscally dependent schools spending less.[114] This observation is also confirmed in a recent study by James.[115] He concludes that wealth factors, per capita income, per household income, and property valuations tend to influence expenditures more in fiscally independent districts than in the dependent ones.

From the cumulative research findings Kumpf describes the quality school in terms of socio-economic factors. He concludes that:

> An adaptable school tends to be located in a community which: (1) has many people represented in white-collar or professional occupations, (2) has a high cultural level, (3) has a high percentage of home ownership, (4) has a high per capita wealth, (5) has a low percentage of foreign born, and (6) has a fairly high median educational level for residents who are 25 years of age or older.[116]

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[114]Jerry Miner, "Social and Economic Factors in Spending for Public Education," The Economics and Politics of Public Education, Vol. II (Syracuse University Press, 1963), pp. 93-138.

[115]H. Thomas James, School Revenue Systems in Five States (Stanford: School of Education, Stanford University, 1961), pp. 29-71.

[116]Carl H. Kumpf, The Adaptable School (New York: The Macmillan Co., 1952).

Quality as Perceptions of Educators and Laymen

Kraft studied the perceptions held by professors of education, professors in areas other than education, and school board members from four regions of the United States in terms of ninety factors judged to affect the quality of an educational program. The following conclusions were arrived at: (1) there appears to be a relationship between the group the individual was a member of and his perception of the factors, (2) there is agreement in each group as to the importance and relevance of the factors concerned with teaching and teaching methods, (3) there is agreement between groups in attributing less value to the outside-the-classroom category of characteristics, and (4) there is no relationship between the geographic region of residence and his perception of characteristics in five of the seven categories.[117]

Quality as Perceptions Held by Teachers and Administrators

The elemental or items analysis approach to the identification of quality-related factors is present in the research of Berg with the Educational Characteristics Criterion, (ECC). Berg's sample was comprised of 871 teacher respondents and 82 administrator respondents from two Michigan school districts in the high quartile of each cost factor of size, ability, effort and expenditure per pupil. The sample also included 1091 teacher respondents and 106 administrator respondents from thirty-nine Michigan districts in the first quartile of each cost factor. Berg's findings were as follows: (1) the

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[117]Leonard E. Kraft, "The Perceptions Held by Professors of Education; Professors in Areas Other Than Education, and School Board Members on Ninety Factors Which May or May Not Affect the Quality of An Educational Program" (East Lansing: Unpublished Ed. D. thesis, Michigan State University, 1962).

Educational Characteristics Criterion, (ECC), discriminated positively between high and low financial support districts according to total score, each of the seven category scores, and forty-one of fifty-six individual item scores, (2) agreement was present between perceptions of teachers and administrators in total score, six of seven category scores, and twenty-four of fifty-six individual item scores, (3) the reliability of the Educational Characteristics Criterion total scores ranges from .89 to .95 according to teacher and administrators within high or low support quartiles, (4) the reliability of category scores was .61 and above except for category five, and (5) each of the fifty-six individual educational characteristics except two had significant positive discrimination ability with respect to total score and its related category score. Berg concluded that the Educational Characteristics Criterion (ECC) is an excellent measure of quality in public school districts in Michigan.[118]

Summary

1. The findings in early inquiries that higher expenditures secure a higher quality of teaching, facilities, and materials have been repeatedly confirmed by later research.

2. The studies reviewed show that pupils on the average make higher scores on tests of achievement in elementary schools and in the academic subjects in high schools in high-expenditure districts as compared with low-expenditure systems.

3. The effect of long-range financial support in a school system is cumulative and the ultimate or point of diminishing returns, in

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[118]Arthur D. Berg, "The Determination of the Discrimination and Reliability Indices of the Educational Characteristics Criterion With Implications Concerning Educational Cost-Quality Relationships" (East Lansing: Unpublished Ph. D. thesis, Michigan State University, 1962).

educational quality has apparently not been reached in even highest expenditure schools.

4. States and regions which make excellent efforts and have superior ability in terms of wealth per pupil rank substantially higher than low-expenditure and ability states in educational achievement and in earning power.

5. The financial determinants of size (need), wealth (ability), effort (tax rate), and per pupil expenditure have significant individual and cumulative effects on the quality of educational programs.

6. The opinions, perceptions, attitudes and values of laymen and educators have a significant relationship to educational quality. Public expectancy has been observed to be a factor closely associated with personal traits, values and experiences and in turn related positively to educational quality. These factors rank close to expenditure level in relation to quality of schools.

7. On the basis of the studies reviewed it is apparent that school quality is an exceedingly complex concept and that a number of factors both cost and non-cost affect the major relationship between expenditure and quality. Quality education is achieved by bringing to bear all influential factors, including expenditure.

Chapter Summary

1. Current wide variations in the quality of schools in the United States are in a considerable degree a result of indefensible differences in the financial support in different regions and localities.

2. Research in the identification of quality-related factors has outdistanced the ability of school districts to put into practical application this research which is available. The initial success of educators in building a data bank for the definition of educational quality is not accomplishing its purposes in a broad effective manner.

3. Adequate support for quality educational programs for all children and adults will require intelligent and decisive action on the part of laymen and educators. The beliefs, attitudes, perceptions, and goals of a variety of publics must be assimilated into a program to clarify the issues of quality in education and achieve agreement on basic needs.

4. Central coordination would assist efforts to improve educational quality through action research and infusion of already validated practices. It is clear that the United States has the financial resources and technical knowledge to provide what pupils need today and what the present state of society requires an educational program to be.

5. The next third of this century will doubtless be one of economic and social adjustment, but also one of great ferment in adjusting what the schools do in light of clearer insights into the nature of learning and the needs of our times. The continued study of educational quality can proceed from a background of significant previous research.

CHAPTER III

METHODOLOGY OF THE STUDY

The present study is based on a design that makes possible the determination and analysis of the perceptions of teachers and administrators which are related to specific factors of educational quality as measured by the Educational Characteristics Criterion, (ECC). The research design also permits the analysis of the relationship between teacher-administrator perceptions and certain selected educational cost factors.

Plan for Securing Cost-Quality Factors and Necessary Data

Educational Quality Factors

The factors of educational quality were obtained from individual perceptions of teachers and administrators in the specified population of the sixty-two educational quality items in the Educational Characteristics Criterion, (ECC).

Educational Cost Factors

The factors of size (average daily membership), effort (total mills levied for current operation), ability (final appraised valuation of all property divided by ADM), and expenditure per pupil (total expenditures including debt service and capital outlay divided by ADM) were obtained from data submitted by the Superintendents of Schools of the two hundred and fifty (250) public school systems participating in the 1964 Stanford Achievement Test standardization program.

This standardization sample represents school districts in all fifty states and was used in this study for the following reasons:

1. It provided entry in a carefully selected and drawn sample.
2. Uniform and precise financial data was available from the public school systems in the sample.
3. Data for additional related research will be available to allow study of the relationships between achievement level as measured by the Stanford Achievement Test, selected cost factors, and the Educational Characteristics Criterion, (ECC).

On August 28, 1963 a letter[1] was sent to all of the Superintendents of the public school districts in the Stanford Achievement Test standardization sample inviting their cooperation and participation in the research study. Included with the letter was a Preliminary Data Sheet[2] requesting information concerning the number of teachers and administrators within the district and detailed cost data for the 1962-63 school year. Affirmative replies and preliminary data was received from one hundred thirty (130) superintendents of the districts in the sample, representing school districts in forty-four (44) states.

Development of the Instrument and Plan for Its Administration

The Instrument

The Educational Characteristics Criterion, (ECC), was

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[1]Appendix A.

[2]Appendix B.

developed by Herbert C. Rudman of Michigan State University.[3] It is based upon the assumption that quality of an educational program resides more in the mind of the observer than in the inherent structure of the educational program itself. Educational quality is determined by a judgment about certain educational characteristics of a school district, both school and community, which are perceived as effective in accomplishing the purposes of American public school education. Several hundred quality and quality-related factors were identified by the Michigan State University faculty. A significantly high level of agreement was prevalent on ninety educational characteristics. On the basis of these ninety characteristics a study was conducted by Kraft[4] during 1961. Professors of education, professors in curricular areas other than education, and school board members were asked to make judgments concerning the relatedness of these ninety characteristics to a concept of quality. On the basis of the highest levels of agreement by these selected samples in perception of the ninety educational characteristics, a revised version of the instrument consisting of sixty-two educational characteristics was tested by Berg.[5]

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[3]Herbert C. Rudman, "The Relationship Between the Financial Support of Education and Quality of Educational Program as Expressed by Certain Related Variables," (unpublished report, Michigan State University, East Lansing, 1961).

[4]Leonard E. Kraft, "The Perceptions Held by Professors of Education; Professors in Areas Other than Education, and School Board Members on Ninety Factors Which may or May Not Affect Quality of an Educational Program" (East Lansing: unpublished Ed. D. Thesis, Michigan State University, 1962).

[5]Arthur D. Berg, "The Determination of the Discrimination and Reliability Indices of the 'Educational Characteristics' Criterion With Implications Concerning Educational Cost-Quality Relationships" (East Lansing: unpublished Ph. D. Thesis, Michigan State University, 1962).

Reliability and discrimination indices were determined through study of the perceptions of teachers and administrators in selected Michigan school districts. Fifty-six educational characteristics were utilized in providing scores for respondents. A slightly revised version of the instrument consisting of the sixty-two previously identified educational characteristics was used in this study. The format and design of the instrument was revised to provide for the Educational Characteristics Criterion (ECC)[6] of fifty-five items, a separate sheet of Instructions for Responding to the Educational Characteristics Criterion,[7] and a Supplemental Information Form[8] of seven items to be completed by the Superintendent of each school district in the sample.

The instrument is a pencil-and-paper type suitable for individual response. The approximate respondent time is thirty minutes, but there is no time limit. Responses are made by marking an "x" over the number which represents the degree to which each educational characteristic is perceived to be present in a given situation, e.g., "Most Characteristic"--4; "Somewhat Characteristic"--3; "Slightly Characteristic"--2; "Least Characteristic"--1. Teachers and building principals are directed to relate the statements to their building experience. Central administrators and supervisors are directed to relate the educational characteristic statements to the school system in total.

The educational characteristic scores are obtained by the sum of the weighted response to each characteristic. Weightings are

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[6]Appendix C.

[7]Appendix D.

[8]Appendix E.

determined by the degree (4, 3, 2, 1) to which each characteristic is perceived to be present in a given situation. The category scores are obtained by the sum of the individual educational characteristic scores included in each of the seven categories. The total score is derived from the sum of the fifty-five educational characteristic scores and one item score from the Supplemental Information Sheet.

Plan for Administration of the Instrument

The required number of instruments (ECC) and individual respondent instruction sheets, each set enclosed in a separate envelope for each respondent, was sent to the Superintendents of the sample school districts. Envelopes and instruments for administrator respondents were stamped Administrator for identification. General Instructions for Distribution, Administration, and Mailing were included in each package.[9] Additional copies of the general instructions and the supplementary information form to be completed by the superintendent and a cover letter[10] of explanation were mailed separately. The Superintendent was requested to complete the factual data required on the Supplementary Information Form, comprising the six non-categorized and unscored items (1-6) and the single categorized and scored item (7) in order to obtain uniform and accurate identifying data.

Instruments were then distributed to teachers and administrators by the Superintendent. The necessity for securing individual rather than group perceptions of teacher and administrator respondents was stressed and implemented by requesting that all instruments be

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[9]Appendix F.

[10]Appendix G.

completed and returned to the collection point within forty-eight hours after distribution. Respondents were assured that all information would be treated confidentially and anonymously in order to protect individual teachers and administrators and guarantee uninhibited responses.

Determination of Categories Within the Instrument

Each of the fifty-six scored educational characteristics had been assigned to one of seven categories in the previous studies in order to provide a means of understanding the effects of and interrelationships between the various school and community factors associated with educational quality. The seven separate categories utilized in this study follow the logical categorization developed by Rudman and utilized in the previous studies by Berg and Kraft. The list of categories and their respective item statements follows:

Category I. Student's Level of Knowledge and Attitudes

8. Students show a positive attitude toward scholastic work.
9. Students evidence accurate knowledge of self.
16. Students are knowledgeable about the educational and social opportunities available to them.
51. Pupils consider an academic grade of at least "B" to be the norm for academic achievement.
52. The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement.
54. Parents and patrons in the community consider an academic grade of at least "B" to be the norm for academic achievement.

Category II. Community Attitudes

21. Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education.

28. The perceptions of parents and patrons concerning the purposes of education are consistent and clear.

29. The local newspaper has shown a high interest in local school affairs.

30. There is no lag between the values taught in the school and what is practices in the community.

36. A high percentage of the electorate in the community vote in school elections.

37. There are outstanding community leaders in this community who exhibit great interest in school affairs.

39. The community exhibits a great concern for the development of aesthetic and artistic interests.

40. A two-way communication channel readily exists between the home and the school.

45. The parents in this community expect their children to perform their share of family chores.

53. A high value is placed on education by the parents and patrons (those residents of a school district without school-age children) of the community.

55. Parents condone or encourage early dating for their children.

Category III. Curriculum

4. Teachers perceive a coherent and coordinated structure to the educational program.

5. Concensus exists among the staff concerning the goals of the educational program.

6. A structure has been developed that permits continual curriculum improvement.

15. A great variety of instructional techniques are presently used in the classroom.

17. A complete comprehensive testing program including intelligence and achievement testing is available in the schools.

Category IV. Use of Facilities

32. The physical facilities of the school system (buildings and equipment) are completely adequate.

Category V. Socio-Cultural Composition of the Community

25. The social status of teachers is very high in this community.

34. Cultural experiences are readily available in the community.

38. This is a highly stable community which does not have too many people leaving.

41. A high percentage of high school students own personal cars.

42. A high percentage of homes own television sets.

44. A high degree of ethnic, racial, and religious homogeneity exists among the local population.

46. This community is composed of people who are predominantly Protestant.

47. This community is composed of people who are predominantly Catholic.

48. This community is composed of people who are predominantly Jewish.

49. The population of this community is equally divided between Protestants and Catholics.

50. One or two ethnic groups comprise the largest number of residents in the community.

Category VI. Administration and Supervision

56. School program is accredited by state and/or regional accrediting agencies.

10. Professional staff of the school system are involved in in-service education.

22. Lay members of the community are highly involved in the planning of educational goals with the school staff.

23. Regulations governing student conduct are highly explicit and detailed.

26. Regulations governing personnel policies are highly explicit and detailed.

27. Citizens are highly organized to discuss school problems.

35. Teachers' judgments are almost always used in the determination of educational policies.

Category VII. The Teacher and Teaching Methods

1. Teachers have an intimate knowledge of children.

2. Teaching practices reflect concern for individual differences.

3. Teaching practices reflect a knowledge of individual differences.

7. Evidence exists of instructional and/or curricular experimentation.

11. Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions.

12. All teachers are certified to teach at the grade level or subject they are now teaching.

13. Teachers have complete freedom to teach what they consider to be important.

14. A great variety of instructional techniques are presently used in the classrooms.

18. Teachers often avail themselves of professional help.

19. Complete freedom is granted to students to investigate any local, state, national, or international issue.

20. Availability to students of materials that reflect all shades of political and sociological points of view.

24. High degree of teacher participation in social and political activities of the community.

31. There exists a high level of cooperation among teachers of the staff.

33. The community and its residents are used for instructional purposes.

43. A great deal of homework is assigned to students.

Non-Categorized and Unscored Items (completed only by Superintendent)

Item 1. School district.

Item 2. State

Item 3. Type of organization pattern followed in school district:
a. 6-3-3, b. 8-4, c. 6-6, d. 5-3-4, e. 6-2-4, f. Other.

Item 4. Approximate average pupil-teacher ratio - elementary:
a. 50-1, b. 45-1, c. 40-1, d. 35-1, e. 30-1, f. 25-1, g. 20-1, h. Less than 20-1.

Item 5. Approximate average pupil-teacher ratio - secondary:
a. through h., similar to Item 4.

Item 6. Type of population center: a. Rural, b. City -
1. less than 2500, 2. 2500-4999, 3. 5000-9999, 4. 10,000-24,999, 5. 25,000-99,000, 6, 100,000 and over.

Selection of Population

The population for this study consisted of the school systems participating in the 1964 Stanford Achievement Test standardization program. This representative standardization population consisted of 267 school districts drawn from all fifty states. Seventeen of the school districts were determined to be non-public schools and were eliminated from consideration. The remaining school districts, representing forty-nine states, were invited to participate in initial phases of this study. One hundred and thirty school districts responded affirmatively, and made available data on all of the financial cost factors. Participating districts represent all but six of the fifty states.

Classification of School Districts on the Basis of Cost Factors

The conclusions of previous research correlating the interrelationships of educational cost factors have shown the advisability of considering them as a group to emphasize their combined effects on total financial support of educational programs. In order to maintain similar strength in the research plan for this study, the one hundred and thirty cooperating school districts from the Stanford standardization population having kindergarten through twelfth grade or first through twelfth grade programs as adjusted in 1962-63 were classified by quartile on each cost factor of size, ability, effort, and expenditure per pupil. Tables 1-4 display the distribution and classification according to the four cost factors.

TABLE 1.--Classification of 130 school districts according to ability (property valuation per pupil).

Quartile	Property Valuation Per Pupil (Dollars)
Quartile 4	17720 - 68744
Quartile 3	8497 - 17300
Quartile 2	5174 - 8457
Quartile 1	730 - 5054
Median - $8477	

TABLE 2.--Classification of 130 school districts according to size (average daily membership).

Quartile	Size (Average Daily Membership)
Quartile 4	3957 - 62250
Quartile 3	2464 - 3898
Quartile 2	1498 - 2443
Quartile 1	172 - 1469
Median - 2453	

TABLE 3.--Classification of 130 school districts according to effort (mills levied for operation).

Quartile	Millage
Quartile 4	33.46 - 92.70
Quartile 3	21.24 - 33.30
Quartile 2	14.00 - 21.00
Quartile 1	7.00 - 14.00
Median 21.12	

TABLE 4.--Classification of 130 school districts according to expenditure per pupil for current operation.

Quartile	Expenditure Per Pupil (Dollars)
Quartile 4	452 - 963
Quartile 3	383 - 448
Quartile 2	320 - 379
Quartile 1	144 - 319
Median - $381	

Classification of Districts on the Four Cost Factors

The cost factor data showed that ten of the thirty-one school districts in the first quartile of expenditure distribution were also in the first quartile of the effort, ability, and size distribution. This represents 32 per cent of the districts in the first quartile based on the expenditure factor and 8 per cent of the total number of districts. In the fourth quartile of expenditure distribution there were eight school districts which were also in the fourth quartile of the size, ability and effort distributions, representing 25% of the districts in the quartile or 6% of the total number of districts. In order to provide an adequate size sample of districts and respondents within districts a classification was made of districts which were in the first quartile in expenditure and in the first or second quartiles of ability, size, and effort. Twenty-one districts in the first quartile of the expenditure factor were assigned to this classification.

Selection of the Sample

The method of selecting the sample depended primarily upon the necessity of providing an adequate and proportionate number of respondents, both teacher and administrator, in school districts within the first and fourth quartiles of the distribution of financial factors, and secondarily upon the desirability of providing several school districts within each quartile. Since previous national research with the educational characteristics in the instrument did not show significant differences in perceptions of respondents between regions of the United States, no pre-determined geographical method of distribution of districts was used.

First or Low Financial Support Quartile of Districts

Ten of the 32 school districts in the first quartile on all cost factors were selected. Eight districts in the first quartile of the expenditure factor and in the first or second quartile of size, effort, and ability were selected in order to provide a sufficient number of teacher and administrator respondents to match the number in the high financial support quartile. The planned number of respondents for the first quartile districts designated as "low financial support quartile of districts" was 1364 teachers and 84 administrators, based on a 100 per cent sampling of the nineteen districts. Usable data was obtained from the completed instruments of 1081 teachers respondents and 82 administrator respondents representing all of the nineteen districts in the quartile.

Fourth Quartile or High Financial Support Quartile of Districts

Seven of the eight school districts in the fourth quartile of expenditure distribution which were also in the fourth quartile of size, effort, and ability were selected randomly in order to provide an adequate number of districts and a sufficient number of respondents to correspond to the low financial support quartile. The planned number of respondents for the fourth quartile districts designated as "high financial support quartile of districts" based upon 100 per cent sampling was 1618 teachers and 113 administrators. Usable data was acquired from the completed instruments of 1223 teacher respondents and 92 administrator respondents from the seven school districts within the fourth or high financial quartile of districts.

Analysis of Financial Factors in High and Low Support Districts

Table 5 presents an analysis of the cost factors of size, ability, effort, and expenditure for the seven school districts comprising the fourth or high financial support quartile of districts and for the 18 districts representing the first or low financial support quartile of districts. Additional comparative data is presented concerning numbers of teachers and administrators, pupil-teacher ratios, pupil-administrator rations, and administrator-teacher ratios. The arithmetic mean for each of the cost factors is also noted.

Mailing Procedures

On August 28, 1963 a letter was sent to the Superintendents of the 250 school districts in the study population inviting their cooperation and participation in the research study. Included with the letter was a preliminary data sheet requesting information concerning the four cost factors and concerning the number of teachers and administrators employed within the district for the 1963-64 school year. After receiving affirmative replies and cost data from 130 school districts, the districts were ordered in quartiles based on the financial factors and a sample drawn from the highest and lowest financial quartiles.

On October 10, 1963 the packages of instruments and cover letters to each superintendent were mailed to the seven districts in the high financial quartile and to the eighteen districts in the low financial quartile. An individual instruction sheet was enclosed with each instrument which was to be sealed and returned to a collection point upon completion. Superintendents in each school district were furnished detailed instructions for collection and return of completed

TABLE 5.--Comparative financial factors for seven combined high support districts and eighteen combined low support districts.

	Number of Districts	Teachers		Administrators		Pupils	
		Frequency	Mean	Frequency	Mean	Frequency	Mean
High Quartile	7	1618	231.14	113	16.14	31968	4566.85
Low Quartile	18	1364	75.7	84	4.67	36641	2035.60

(continued)	Mean Valuation Per Pupil (Ability)	Mean Millage (Effort)	Mean Expenditure Per Pupil
High Quartile	$26337	36.83	$636.37
Low Quartile	7098	18.00	267.85

(continued)	Pupil-Teacher Ratio	Pupil-Administrator Ratio	Administrator-Teacher Ratio
High Quartile	19.7-1	282.9-1	14.3-1
Low Quartile	26.8-1	436.2-1	16.2-1

instruments. Completed responses were received from all of the twenty-five districts which had agreed to participate.

Treatment of the Data

Each of the returned instruments was coded with an assigned district number upon its removal from the envelope to insure its identification for IBM punching and verifying. All of the returned instruments were checked for completeness. Incomplete instruments were not considered usable and were discarded. The data on the supplementary information form completed and returned by each school district Superintendent were coded with instructions to gang punch items 1-7 on all teacher and administrator respondent IBM cards for the respective school district. Item 7 on the Superintendent's supplementary information was weighted and scored according to the following system: 4 points for accreditation by state and/or regional agency - a "yes" answer; 1 point for a "no" answer indicating no accreditation or approval by either state or regional agency.

The data were coded, punched and verified for IBM and computer tabulation. The IBM card layout utilized 78 columns, providing for individual characteristic scores (56 columns); category scores (15 columns); total scores (3 columns); district number (2 columns); and all other supplementary data from the instruments. Printed IBM listing from card data was completed to facilitate computations for further statistical tests and to recheck the completeness and accuracy of each respondent instrument.

Statistical Methodology and Research Design

Research Design

1. The "t" test for the significance of the difference between the mean scores of the respondent types was used to determine the

discrimination of the instrument.

2. The Hoyt analysis of variance method was used to measure the reliability of the instrument. This reliability was computed from the consistency of individual performance upon test items based upon individual item to total score and item to category score within the high and low financial support quartiles of districts.

3. The reliability of the instrument based upon individual item to total score consistency and item to category score consistency within individual districts was also computed by the Hoyt analysis of variance method.

4. The point biserial correlation coefficient was obtained to determine positive discrimination power of the individual educational characteristic scores with respect to total score and their related category scores.

Statistical Methodology

Statistical treatments of the data in this study were conducted through the use of the facilities of the Computer Laboratory, Michigan State University. Data was processed through the use of the Control Data Corporation (CDC) 3600 computer. The 3600 is a large scale electronic computer suited for scientific analysis. AES program descriptions (Core Routines) were used to calculate standard deviations, means, squares and sums of squares for computing the "t" test. Core and AOV library routines were also utilized and adapted to calculate the analysis of variance and point biserial correlation coefficients on the CDC 3600. Computer calculations were checked at random by performing the statistical treatment on a mechanical calculator to verify the results obtained.

Summary

The factors of educational quality utilized in this study were secured by means of the Educational Characteristics Criterion, (ECC). Educational cost factors of size, ability, effort and expenditure were obtained from data submitted by the Superintendents of 130 public school districts in forty-four states. The districts were then classified by quartiles according to the educational cost factors. A sample of seven districts in the fourth or high financial support quartile and eighteen districts in the first or low financial support quartile was selected. Usable data was received from 1223 teacher respondents and 92 administrator respondents in the fourth quartile districts and from 1081 teacher and 82 administrator respondents in the first quartile districts.

The data were scored and coded for IBM tabulation and statistical treatments required for tests of reliability and for item analyses were processed through the use of the CDC 3600 computer. The "t" test was used to determine discrimination. The Hoyt Analysis of Variance method was used to measure reliability from the consistency of individual performance on test items within high and low financial quartiles. The point biserial correlation coefficient was obtained to determine positive discrimination power of individual characteristics to category and total scores.

CHAPTER IV

ANALYSIS OF HYPOTHESIS I DATA--DISCRIMINATION BETWEEN FINANCIAL QUARTILES

The analysis of data is reported in the following three chapters. Each chapter is composed of a statement of the major hypothesis tested, a summary of the findings, a description and interpretation of the statistical treatment, the results of the statistical treatment of the data, an evaluation of the hypothesis by means of a criterion of significance, and the decision to accept or reject the null hypothesis.

The hypotheses being tested are stated in the null form and are designated by the symbol H_o. The .05 level of significance is used to define the probability level that is considered too low to warrant support of the hypothesis being tested. If the probability of the occurrence of the observed data is smaller than the level of significance, then the data are considered to be contradictory to the hypothesis and a decision is made to reject the null hypothesis. Rejection of the null hypothesis is regarded as a decision to accept the research hypothesis. The non-rejection or acceptance of the null hypothesis signifies the rejection of the corresponding research hypothesis. The decision rules outlined here are used as guides in summarizing the results of all subsequent statistical tests.

This chapter contains the analysis of the ability of the Educational Characteristics Criterion, (ECC), to discriminate between high and low financial support quartiles of United States public school districts (K-12).

The first general null hypothesis and six operational null hypotheses are as follows:

The Educational Characteristics Criterion will show no ability to discriminate between the first or low financial support quartile and the fourth or high financial quartile of United States public school districts (K-12) which are classified on the educational cost factors of size, effort, ability, and expenditure.

H1a: There is no difference between the high financial support districts and low financial support districts in the total mean scores according to teacher responses.

H1b: There is no difference between the high financial support districts and low financial support districts in the total mean scores according to administrator responses.

H2a: There is no difference between the high financial support districts and low financial support districts in each category mean score based upon teacher responses.

H2b: There is no difference between high financial support districts and low financial support districts in each category mean score based upon administrator responses.

H3a: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based upon teacher responses.

H3b: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based upon administrator responses.

Summary of Hypothesis I Results

1. Educational Characteristics Criterion, (ECC) discrimination findings show that according to the total scores of teachers and the total scores of administrators, educational quality is present to a

significantly higher extent in school districts having high educational financial support than in school districts having low educational financial support (Table 7).

2. Educational Characteristics Criterion, (ECC) discrimination results indicate that according to each of the seven category scores of teachers, educational quality is present to a significantly higher extent in school districts having high educational financial support than in school districts having low educational financial support (Table 8). The findings indicate that administrator quality scores significantly discriminate between high and low financial support districts in the following three categories: IV, use of facilities; V, socio-cultural composition of community; IV, administration and supervision (Table 8).

3. Educational Characteristics Criterion, (ECC) discrimination measures indicate that according to each of eighteen individual educational characteristic scores of both teachers and administrators, educational quality exists in a significantly greater extent in school districts having high educational financial support than in school districts having low educational financial support (Table 9).

4. Educational Characteristics Criterion, (ECC) discrimination indicates a significant negative relationship concerning educational quality and educational financial support according to each of the three educational characteristic scores of either teachers or administrators presented in Table 10.

5. Educational Characteristics Criterion, (ECC) discrimination findings indicate that according to scores of each of the twenty-three educational characteristics listed in Table 11, educational quality is present in significantly greater degree in school districts having high financial support than in school districts with low financial support. The twenty-three characteristics vary in their relationship to educational financial support according to respondent type since

administrator scores of these same characteristics indicate there is no significant difference in educational quality between high and low financial support school districts.

6. Educational Characteristics Criterion, (ECC) discrimination findings indicate that variations in relationships of quality to financial support according to respondent type include two individual educational characteristics which according to mean scores of administrators do not significantly discriminate between high and low financial support districts and which according to teacher scores exist in a significantly higher measure in low educational financial support school districts than in school districts having high educational financial support (Table 12).

7. Educational Characteristics Criterion, (ECC) discrimination indicates that for one educational characteristic (Table 13), teacher scores do not significantly discriminate between high and low financial support districts and which according to administrator scores is present in a significantly higher degree in school districts having low financial support than in school districts having high educational financial support.

8. Educational Characteristics Criterion, (ECC) non-discrimination is present in nine individual educational characteristics scores according to scores of either teachers or administrators. These indicate no significant difference exists in educational quality between high and low financial support districts (Table 14).

9. An analysis of the findings of this study indicates strong relationships between teacher samples according to total score, category scores, and individual educational characteristics scores. Differences are apparent in the relationship between teacher and administrator perceptions of educational quality and financial support in the comparable discrimination results (Table 6).

10. The overall findings related to the ability of the Educational Characteristics Criterion, (ECC) to discriminate positively between educational quality in high and low educational financial support districts indicate a strong positive relationship between perceptions of educational quality and level of financial support (Table 6). The findings in terms of contrasts between administrator and teacher quality perceptions and level of financial support will be analyzed in detail following results of Hypothesis II.

Statistical Tests and Treatments

The "t" distribution was used to test the significance of the observed differences between the mean scores of high financial support districts and low financial support districts according to teacher and administrator responses. The limits within which the hypotheses will be tenable and outside of which they will be rejected are based on a .05 level of significance. The "t" values which cut off 2.5 percent of the area in each tail of the "t" distribution provide the measure of relative difference between the mean scores. The "t" statistic will be numerically large when (1) the null hypothesis is not true or (2) the null hypothesis is true but the difference between the mean experimental errors is larger than what is expected on the basis of the assumptions underlying the use of this experimental design.

The null hypotheses will be accepted if the "t" value exceeds the significance level of .05 ($p > .05$). The region of rejection for the null hypotheses is defined by the two tails of the confidence limits, (.025, .975). Where very strong rejections of null hypotheses occur, higher probability levels for rejecting the null hypotheses are given, for example: $p < .001$ or $p < .01$.

Table 6. Summary of relationships between educational quality and financial support as indicated by frequency of discrimination and non-discrimination of individual educational characteristics within categories according to teacher and administrator responses in Michigan and United States samples.[1]

Category and No. of Items	Teachers						Administrators						Both					
	United States			Michigan			United States			Michigan			United States			Michigan		
	+	-	NS	+	-	NS	+	-	NS	+	-	NS	+	-	NS	+	-	NS
I: Student's Level of Knowledge and Attitudes (6)	4	0	2	6	0	0	2	0	4	4	0	2	2	0	2	4	0	0
II: Community Attitudes (11)	7	1	3	10	1	0	4	1	6	8	1	2	4	1	3	8	1	0
III: Curriculum (5)	4	0	1	5	0	0	1	0	4	5	0	0	1	0	1	5	0	0
IV: Use of Facilities (1)	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
V: Socio-cultural Composition of Community (11)	7	2	2	7	2	2	4	2	5	6	2	3	4	1	1	6	2	2
VI: Administration and Supervision (7)	5	0	2	6	0	1	1	0	6	6	0	1	1	0	2	6	0	1
VII: The Teacher and Teaching Methods (15)	13	2	0	14	1	0	5	1	9	11	0	4	5	1	0	11	0	0
Total Score: (56)	41	5	10	49	4	3	18	4	34	41	3	12	18	3	9	41	3	3

Key: + indicates association of high quality with high financial support, low quality with low financial support.

- indicates association of high quality with low financial support and low quality with high financial support.

NS indicates non-significant association of quality with degree of financial support.

The frequency of the educational characteristics which have the same quality-financial relationship according to either teachers or administrators is indicated under "Both."

[1]See Appendices H and I for additional statistical data.

Summaries of the results of the statistical treatments are presented in tabular form in the following sections. Additional data is included in the appendices and referred to as needed in the analysis of the test results.

The determination of whether an observed difference in total, category, and individual characteristic mean scores between respondents from high and low financial support districts is of such magnitude that it cannot be attributed to chance factors or sampling variation is the major interest. Additional examination and analysis is concerned, however, with whether individual educational characteristics are positively or negatively related to a particular level of financial support.

Results and Evaluation of Statistical Treatment

Total Quality Scores

In order to determine if the Educational Characteristics Criterion could provide information which would allow discrimination between high and low financial support quartiles, the total mean scores appearing in Table 7 were compared by means of the "t" test. On the basis of the significant differences in total mean scores shown in Table 7 we reject the null hypotheses:

> H1a: There is no difference between the high financial support districts and low financial support districts in the total mean scores according to teacher responses.
>
> H1b: There is no difference between the high financial support districts and low financial support districts in the total mean scores according to administrator responses.

and accept the research hypotheses that the Educational Characteristics Criterion, (ECC) will discriminate positively between the first or low financial support quartile and the fourth or high financial support quartile and the fourth or high financial support quartile according to

responses of both teachers and administrators. This discrimination represents a significant relationship between educational quality and educational financial support as defined in this study.

Table 7. Differences in total mean scores of respondents from high financial support districts and low financial support districts.[2]

Score Total	Teachers		Administrators	
	High	Low	High	Low
	153.095	144.408	159.000	152.232
	S ($p < .001$)		S ($p < .02$)	

S indicates a level of significance between mean scores at a minimum of $P < .05$.

$P < .001$ and $p < .02$ represent higher levels of significance than minimum required.

Category Scores

Table 8 presents the results of the comparison of each category mean score between high and low financial support quartiles of school districts. On the basis of the significant differences in category mean scores we reject the null hypothesis:

> H2a: There is no difference between the high financial support districts and low financial support districts in each category mean score based upon teacher responses.

and accept the research hypothesis that the Educational Characteristics Criterion, (ECC) will discriminate between the district types according to teacher responses. A significant positive relationship between educational quality as measured by category mean scores and financial support is indicated since significant differences in category mean scores appear for teacher respondents from different district types.

[2]See Appendix H for additional statistical data.

Additional analysis of the data in Table 8 leads to the rejection of the null hypothesis:

> H2b: There is no difference between the high financial support districts and low financial support districts in each category mean score based upon administrator responses.

for category IV: ("Use of Facilities"), category V: ("Socio-cultural Composition of Community"), and category VI: ("Administration and Supervision") and the acceptance of the research hypothesis that the Educational Characteristics Criterion, (ECC) will discriminate positively between district types according to administrator responses to these categories. On the basis of no significant differences in category mean scores we accept the null hypothesis H2b for category I: ("Student's Level of Knowledge and Attitudes"), category II: ("Community Attitudes"), category III: ("Curriculum"), and category VII: ("The Teacher and Teaching Methods"). The lack of positive discrimination between administrator responses according to district type for these four categories indicates the lack of a significant positive relationship between educational quality and financial support factors. The implications of the failure of administrator responses to substantiate the hypothesis of a difference between each category mean score by district type is discussed in Chapter VII.

Individual Educational Characteristic Scores

Appearing in Table 9 are eighteen individual educational characteristics which are present in a significantly higher degree in high financial support districts than in low financial support districts according to both teacher and administrator responses. On the basis of the significant difference in individual educational characteristic mean scores we reject the null hypotheses:

Table 8. Differences in category mean scores of respondents from high financial support districts and low financial support districts.[3]

Score	Teachers		Administrators	
	High	Low	High	Low
Category I: Student's Level of Knowledge and Attitudes	16.32	15.56	17.47	16.87
	S ($p < .001$)		NS ($p > .05$)	
Category II: Community Attitudes	28.54	26.92	29.76	28.27
	S ($p < .001$)		NS ($p > .05$)	
Category III: Curriculum	16.07	15.06	16.57	16.22
	S ($p < .001$)		NS ($p > .05$)	
Category IV: Use of Facilities	2.90	2.39	3.18	2.63
	S ($p < .001$)		S ($p < .001$)	
Category V: Socio-Cultural Composition of Community	27.58	26.15	27.99	26.67
	S ($p < .001$)		S ($p < .02$)	
Category VI: Administration and Supervision	16.55	15.52	17.46	16.43
	S ($p < .001$)		S ($p < .05$)	
Category VII: The Teacher and Teaching Methods	45.09	42.81	46.58	45.15
	S ($p < .001$)		NS ($p > .05$)	

S indicates statistically significant difference between category scores at a minimum of $p < .05$.

NS indicates a non-significant statistical difference between category mean scores.

[3]See Appendix H for additional statistical data.

H3a: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based upon teacher responses.

H3b: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score according to administrator responses.

for the eighteen individual items listed in Table 9 and accept the research hypothesis that the Educational Characteristics Criterion, (ECC) will discriminate between high and low financial support districts according to both teacher and administrator responses. The results substantiate the hypothesis for these eighteen items that differences in individual characteristic scores may be revealed by respondents from different district types.

Table 9. Individual educational characteristics which are present in a significantly higher degree in high financial support districts than in low financial support districts according to both teacher and administrator responses.[4]

Item No.	Educational Characteristic
Category I:	Student's Level of Knowledge and Attitudes
8	Students show a positive attitude toward scholastic work.
16	Students are knowledgeable about the educational and social opportunities available to them.
Category II:	Community Attitudes
21	Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education.
39	The community exhibits a great concern for the development of aesthetic and artistic interests.

Continued

[4]See Appendix I for additional statistical data.

Table 9 - Continued

Item No.	Educational Characteristic
Category II: Community Attitudes - continued	
40	A two-way communication channel readily exists between the home and the school.
53	A high value is placed on education by parents and patrons (those residents of a school district without school-age children) of the community.
Category III: Curriculum	
15	A great variety of instructional techniques are presently used in the classroom.
Category IV: Use of Facilities	
32	The physical facilities of the school system (buildings and equipment) are completely adequate.
Category V: Socio-cultural Composition of the Community	
34	Cultural experiences are readily available in the community.
41	A high percentage of high school students own personal cars.
42	A high percentage of homes own television sets.
48	This community is composed of people who are predominantly Jewish.
Category VI: Administration and Supervision	
27	Citizens are highly organized to discuss school problems.
Category VII: The Teacher and Teaching Methods	
7	Evidence exists of instructional and/or curricular experimentation.
12	All teachers are certified to teach at the grade level or subject they are now teaching.

Continued

Table 9 - Continued

Item No.	Educational Characteristic
Category VII: The Teacher and Teaching Methods - continued	
14	A great variety of instructional techniques are presently used in the classrooms.
18	Teachers often avail themselves of professional help.
20	Availability to students of materials that reflect all shades of political and sociological points of view.

The Educational Characteristics Criterion, (ECC), provides a discrimination between district types according to both teacher and administrator responses for each of the three educational characteristics listed in Table 10. The discrimination however, indicates a significant negative relationship since the mean scores for respondents in low financial support districts significantly exceed the mean scores for respondents in the high financial support quartile. On the basis of the significant differences in individual characteristic mean scores we reject the null hypotheses:

> H3a: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on teacher responses.
>
> H3b: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on administrator responses.

for each of the three educational characteristics listed in Table 10 and accept the research hypotheses that these individual items will discriminate negatively between district types in terms of educational quality and educational support. The three characteristics appear to be typical of rural-oriented smaller communities and are not closely associated with factors tending to influence financial support of school districts.

Table 10. Individual educational characteristics which are present in a significantly higher degree in low financial support districts than in high financial support districts according to both teachers and administrators.[5]

Item No.	Educational Characteristic
Category II: Community Attitudes	
45	The parents of this community expect their children to perform their share of family chores.
Category V: Socio-cultural Composition of Community	
46	This community is composed of people who are predominantly Protestant.
Category VII: The Teacher and Teaching Methods	
24	High degree of teacher participation in social and political activities of the community.

The remaining analysis is devoted to individual educational characteristics which vary in their relationship to educational financial support according to respondent type.

On the basis of significant differences in item mean scores for each of the items listed in Table 11, we reject the null hypothesis:

> H3a: There is no difference between the high financial support districts and low financial support districts in each educational characteristics mean score based on teacher responses.

and on the strength of non-significant difference in item mean scores we accept the null hypothesis:

> H3b: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on administrator responses.

[5]See Appendix I for additional statistical data.

for each of the individual educational characteristics appearing in Table 11. Administrator responses will not discriminate between district types while teacher responses discriminate at a significantly positive level.

Table 11. Individual educational characteristics which according to teacher responses are present in a significantly higher degree in high financial support districts than in low financial support districts and according to administrator responses are not significantly different in relation to district type.[6]

Item No.	Educational Characteristic
Category I:	Student's Level of Knowledge and Attitudes
51	Pupils consider an academic grade of at least a "B" to be the norm for academic achievement.
54	Parents and patrons in the community consider an academic grade at least "B" to be the norm for academic achievement.
Category II:	Community Attitudes
28	The perceptions of parents and patrons concerning the purposes of education are consistent and clear.
36	A high percentage of the electorate in the community vote in school elections.
55	Parents condone or encourage early dating for their children.
Category III:	Curriculum
4	Teachers perceive a coherent and coordinated structure to the educational program.
6	A structure has been developed that permits continual curriculum development.
17	A complete comprehensive testing program including intelligence testing and achievement testing is available in the schools.

Continued

[6]See Appendix I for additional statistical data.

Table 11 - Continued

Item No.	Educational Characteristic
Category V: Socio-cultural Composition of Community	
47	This community is composed of people who are predominantly Catholic.
49	The population of this community is equally divided between Protestants and Catholics.
50	One or two ethnic groups comprise the largest number of residents in the community.
Category VI: Administration and Supervision	
10	Professional staff of the school system are involved in in-service education.
22	Lay members of the community are highly involved in the planning of educational goals with the school staff.
26	Regulations governing personnel policies are highly explicit and detailed.
35	Teachers' judgments are almost always used in the determination of educational policies.
Category VII: The Teacher and Teaching Methods	
1	Teachers have an intimate knowledge of children.
2	Teaching practices reflect concern for individual differences.
3	Teaching practices reflect a knowledge of individual differences.
11	Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions.
19	Complete freedom is granted to students to investigate any local, state, national, or international issue.

Continued

Table 11 - Continued

Item No.	Educational Characteristic
Category VII: The Teacher and Teaching Methods - continued	
31	There exists a high level of cooperation among teachers on the staff.
33	The community and its residents are used for instructional purposes.
43	A great deal of homework is assigned to students.

Through the examination of differences between responses of teachers and administrators within high financial support districts and within low financial support districts significant differences are found. In terms of the findings, these differences between teacher and administrator responses to individual educational characteristics which occur regardless of district type, will be subjected to a complete analysis of possible determinants following the discussion and evaluation of Hypotheses II, Chapter V.

On the basis of the significant differences in individual educational characteristic mean scores we reject the null hypothesis:

> H3a: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on teacher responses.

for the two individual items reported in Table 12, and based on the non-significant difference in individual educational characteristic mean scores we accept the null hypothesis:

> H3b: There is no significant difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on administrator responses.

for the educational characreristics listed in Table 12. The results substantiate the research hypothesis that the Educational Characteristics Criterion, (ECC) will discriminate between district types according to teacher responses. The discrimination according to teacher responses indicates the relationship between educational quality and financial support is negative. The administrator responses show no positive or negative discrimination between district types.

Table 12. Individual educational characteristics which according to teacher responses are present in a significantly higher degree in low financial support districts than in high financial support districts and according to administrator responses are not significantly different in high financial support districts than in low financial support districts.[7]

Item No.	Educational Characteristic
Category V: Socio-cultural Composition of Community	
25	The social status of teachers is very high in this community.
Category VI: Administration and Supervision	
13	Teachers have complete freedom to teach what they consider to be important.

The results of discrimination level and direction on the two items in Table 12 which according to teacher respondents are present to a greater degree in low financial support districts than in high financial support districts are probably related in a positive manner more to the size of the school district and community than to the other cost factors. The rationale for this assumption is based upon the

[7]See Appendix I for additional statistical data.

greater freedom and flexibility reflected in the procedures in many small school districts and communities.

On the basis of the non-significant difference in individual item mean scores we accept the null hypothesis:

> H3a: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on teacher responses.

for the one educational characteristic presented in Table 13, and on the basis of significant difference in the item mean score we reject the null hypothesis:

> H3b: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on administrator responses.

for the one educational characteristic presented in Table 13. The research hypothesis that the Educational Characteristics Criterion, (ECC) will discriminate between district types is rejected according to teacher responses and accepted according to administrator responses. However, the discrimination according to administrator responses indicates a negative relationship between quality and financial support since the individual educational characteristic is present in a significantly higher degree in low financial support districts.

Table 13. Individual educational characteristic which, according to administrator responses is present in a significantly higher degree in low financial support districts than in high financial support districts and according to teacher responses is not significantly different according to district type.[8]

Item No.	Educational Characteristic
Category V: Socio-cultural Composition of Community	
38	This is a highly stable community which does not have too many people leaving.

[8]See Appendix I for additional statistical data.

According to teacher responses there is no significant difference in the community stability. Administrator respondents feel that the highly stable community is more likely to contain the low educational financial support district than the high financial support school district.

On the basis of the non-significant differences in individual educational characteristic mean scores we accept the null hypotheses:

H3a: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on teacher responses.

H3b: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score based on administrator responses.

for each of the nine educational characteristics presented in Table 14 and reject the research hypothesis that the Educational Characteristics Criterion, (ECC) will discriminate between high and low financial support school districts according to both teacher and administrator responses. The data shows no significant relationship between educational quality as measured by these items and financial support.

Table 14. Individual educational characteristics which are not significantly different in high financial support districts and low financial support districts according to both teachers and administrators.[9]

Item No.	Educational Characteristic
Category I:	Student's Level of Knowledge and Attitudes
9	Students evidence accurate knowledge of self.
52	The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement.

Continued

[9]See Appendix I for additional statistical data.

Table 14 - Continued

Item No.	Educational Characteristic
Category II: Community Attitudes	
29	The local newspaper has shown a high interest in local school affairs.
30	There is no lag between the values taught in the school and what is practiced in the community.
37	There are outstanding community leaders in this community who exhibit great interest in school affairs.
Category III: Curriculum	
5	Consensus exists among the staff concerning the goals of the educational program.
Category V: Socio-cultural Composition of the Community	
44	A high degree of ethnic, racial, and religious homogeniety exists among the local population.
Category VI: Administration and Supervision	
23	Regulations governing student conduct are highly explicit and detailed.
56	School program is accredited by the state and/by regional accrediting agencies.

Individual Educational Characteristic Score Relationships and Summary

1. A strong positive relationship between educational quality, as measured by teacher and administrator perceptions, and educational financial support is indivated by teacher responses to forty-one of the fifty-six individual educational characteristics (Table 11). Administrator responses to eighteen of these characteristics indicate the

same relationship between high quality and high support and between low quality and low support (Table 9).

2. High educational quality is significantly associated with low financial support and low educational quality with high financial support according to both teacher and administrator responses to three individual educational characteristics (Table 10). Teacher responses to two additional characteristics indicating a significant negative relationship between educational quality and financial support are found in Table 12. According to administrator responses one additional educational characteristic is present in a significantly higher degree in low financial support districts than in high financial support districts (Table 13).

3. The summaries in Table 1 and Table 15 indicate considerable difference between teacher and administrator perceptions of educational quality and educational financial support. Strong positive relationships are found in a greater degree in teacher responses than in administrator responses.

4. A summary of the relationships between individual educational characteristics and educational financial support presented in this study is compared with corresponding findings from the 1962 Michigan study (Table 1 and 15). Agreement is present in forty individual educational characteristics which according to teacher responses are present in a higher degree in high financial support districts than in low financial support districts. Administrator responses to sixteen individual characteristics show a positive relationship between educational quality and financial support according to both studies.

Identical negative relationships between quality and financial support are found in teacher responses to three individual educational characteristics and administrator responses to two educational characteristics.

Table 15. Relationships between financial support level and differences in educational quality as measured by individual educational characteristic mean scores, category mean scores, and total scores for respondents in Michigan and United States samples of teachers and administrators.[10]

Category and Item No.	Teachers		Administrators	
	United States	Michigan	United States	Michigan
Category I: Student's Level of Knowledge and Attitudes	+	+	NS	+
8	+	+	+	+
9	NS	+	NS	+
16	+	+	+	+
51	+	+	NS	+
52	NS	+	NS	NS
54	+	+	NS	NS
Category II: Community Attitudes:	+	+	NS	+
21	+	+	+	+
28	+	+	NS	+
29	NS	+	NS	+
30	NS	+	NS	+
36	+	+	NS	NS
37	NS	+	NS	+
39	+	+	+	+
40	+	+	+	+
45	-	-	-	-
53	+	+	+	+
55	+	+	NS	NS
Category III: Curriculum	+	+	NS	+
4	+	+	NS	+
5	NS	+	NS	+
6	+	+	NS	+
15	+	+	+	+
17	+	+	NS	+

Continued

Table 15 - Continued

Category and Item No.	Teachers		Administrators	
	United States	Michigan	United States	Michigan
Category IV: Use of Facilities (32)	+	+	+	+
Category V: Socio-cultural Composition of Community	+	+	+	+
25	-	+	NS	+
34	+	+	+	+
38	NS	NS	-	NS
41	+	+	+	+
42	+	+	+	+
44	NS	-	NS	-
46	-	-	-	-
47	+	+	NS	+
48	+	+	+	NS
49	+	+	NS	+
50	+	NS	NS	NS
Category VI: Administration and Supervision	+	+	+	+
10	+	+	NS	+
22	+	+	NS	+
23	NS	NS	NS	NS
26	+	+	NS	+
27	+	+	+	+
35	+	+	NS	+
56	NS	+	NS	+
Category VII: The Teacher and Teaching Methods	+	+	NS	+
1	+	+	NS	+
2	+	+	NS	+
3	+	+	NS	+
7	+	+	+	+
11	+	+	NS	+
12	+	+	+	+
13	-	-	NS	NS
14	+	+	+	+

Continued

Table 15 - Continued

Category and Item No.	Teachers		Administrators	
	United States	Michigan	United States	Michigan
Category VII: (continued) The Teacher and Teaching Methods	+	+	NS	+
18	+	+	+	+
19	+	+	NS	NS
20	+	+	+	NS
24	-	+	-	+
31	+	+	NS	NS
33	+	+	NS	+
43	+	+	NS	+
Total Score	+	+	+	+

Key: + indicates association of high quality with high financial support, low quality with low financial support.

- indicates association of high quality with low financial support and low quality with high financial support.

NS indicates non-significant association of quality with degree of financial support.

CHAPTER V

ANALYSIS OF HYPOTHESIS II DATA--DISCRIMINATION BETWEEN TEACHER-ADMINISTRATOR PERCEPTIONS OF QUALITY WITHIN FINANCIAL QUARTILES

This chapter is the analysis of the ability of the Educational Characteristics Criterion, (ECC), to discriminate between the perceptions of teachers and of administrators within the high financial support quartile of school districts, within the low financial support quartile of school districts, and within selected individual large and small school districts. The statements comprising the analysis follow the outline presented in the preceding chapter.

The second general null hypothesis and five operational null hypotheses are stated as follows:

> The Educational Characteristics Criterion, (ECC) will show no ability to discriminate between the responses of teachers and administrators within the high financial support quartile, within the low financial support quartile, within individual large school districts, and within individual small school districts.
>
> H4a: Within high financial support districts and within low financial support districts there is no difference between total mean scores of teachers and administrators.
>
> H4b: Within high financial support districts and within low financial support districts there is no difference between each category mean score of teachers and administrators.
>
> H4c: Within high financial support districts and within low financial support districts there is no difference between each educational characteristic mean score of teachers and administrators.

H5a: Within individual large and small school districts there is no difference between total mean scores of teachers and administrators.

H5b: Within individual large and small school districts there is no difference between each category mean score of teachers and administrators.

Summary of Hypothesis II Results Concerning High and Low Financial Support School Districts

1. Educational Characteristics Criterion, (ECC) discrimination between total mean scores of teachers and administrators within high financial support districts and within low financial support districts indicates that there are significant differences between teachers and administrators within each district type concerning the level of educational quality of the district (Table 19).

2. Educational Characteristics Criterion, (ECC) discrimination between category mean scores of teachers and administrators within each district type indicates that there is disagreement between teacher and administrator perceptions of educational quality regardless of district type for each category except category V: ("Socio-cultural Composition of Community"). Table 20 graphically presents this data.

3. Educational Characteristics Criterion, (ECC) discrimination between category mean scores of teachers and administrators within high financial support districts and within low financial support districts indicates that administrators are overvaluing all seven categories of educational characteristics within each district type (Table 16).

4. Educational Characteristics Criterion, (ECC) non-discrimination findings indicate that according to the individual educational characteristic mean scores of teachers and administrators within each district type there is agreement in regard to educational quality represented in each of the twenty-eight educational characteristics in Table 21.

5. Educational Characteristics Criterion, (ECC) discrimination measures indicate that according to each of four individual educational characteristics appearing in Table 22, administrators in high financial support districts are overvaluing educational quality. Non-discrimination between individual educational characteristic mean scores within low quartile districts indicates consensus between teachers and administrators as to the educational quality measured by these four characteristics.

6. Educational Characteristics Criterion, (ECC) discrimination between individual educational characteristic mean scores of teachers and administrators within low financial support districts indicate that administrators are undervaluing educational quality as represented by one educational characteristic (Table 23, Part I) and overvaluing educational quality as represented by nine educational characteristics (Table 23, Part II). Consensus exists between teacher and administrator perceptions of quality as measured by these ten characteristics within the high financial support districts.

7. Educational Characteristics Criterion, (ECC) provides a significant measure of discrimination between individual educational characteristic mean scores of teachers and administrators within either high financial support districts or low financial support districts for each of the fourteen quality characteristics listed in Table 24. The discrimination findings indicate that administrators, regardless of district type, are undervaluing the educational characteristic in Part I, Table 24 and overvaluing the thirteen educational quality characteristics in Part II of Table 24.

8. Summaries of the findings concerning relationships between teacher and administrator perceptions of educational quality according to district type are compared with the findings of the 1962 Michigan study in Tables 16 and 17. Findings in both studies show a tendency for

administrators to overvalue educational quality according to total mean scores and all category mean scores. Agreement in the results of each study is present in regard to the non-discrimination present in mean scores of category V: ("Socio-cultural Composition of Community") and the significant discrimination present in Category VII: ("The Teacher and Teaching Methods"). Similar results are found in administrator-teacher perceptions of quality as measured by thirty-four individual educational characteristics within high financial support districts and thirty-five individual educational characteristics within low financial support districts. However the overall results in the Michigan study indicate a general level of consensus between administrator and teacher perceptions of educational quality while the overall findings in this study indicate significantly different perceptions of educational quality are held by teachers and administrators.

Table 16. Relationships of teacher and administrator perceptions of quality within high and low financial support districts in Michigan and United States samples.

Category and Item No.	High Financial Support Districts		Low Financial Support Districts	
	United States	Michigan	United States	Michigan
Category I: Student's Level of Knowledge and Attitudes	+	NS	+	NS
8	+	+	+	+
9	+	+	+	+
16	+	+	+	+
51	NS	NS	+	NS
52	NS	NS	NS	NS
54	NS	NS	+	+

Continued

Table 16 - Continued

Category and Item No.	High Financial Support Districts		Low Financial Support Districts	
	United States	Michigan	United States	Michigan
Category II: Community Attitudes	+	NS	+	NS
21	+	NS	NS	NS
28	NS	NS	NS	NS
29	+	-	NS	+
30	NS	NS	NS	NS
36	NS	-	NS	NS
37	+	NS	+	NS
39	NS	-	NS	NS
40	+	NS	+	+
45	NS	-	NS	NS
53	NS	NS	NS	+
55	-	NS	-	-
Category III: Curriculum	+	NS	+	NS
4	NS	NS	NS	NS
5	NS	NS	+	NS
6	NS	NS	+	NS
15	+	+	+	NS
17	NS	NS	+	+
Category IV: Use of Facilities (32)	+	+	+	NS
Category V: Socio-cultural Composition of Community	NS	NS	NS	NS
25	+	NS	NS	NS
34	NS	NS	NS	NS
38	NS	NS	NS	NS
41	NS	NS	NS	NS
42	NS	NS	NS	NS
44	NS	-	NS	NS
46	NS	-	NS	NS
47	NS	NS	NS	-
48	NS	-	-	-
49	NS	NS	NS	-
50	NS	-	NS	NS

Continued

Table 16 - Continued

Category and Item No.	High Financial Support Districts		Low Financial Support Districts	
	United States	Michigan	United States	Michigan
Category VI: Administration and Supervision	+	-	+	NS
10	NS	NS	NS	NS
22	NS	NS	NS	NS
23	NS	NS	NS	+
26	NS	NS	+	NS
27	NS	+	NS	-
35	+	+	+	+
56	NS	a	NS	a
Category VII: The Teacher and Teaching Methods	+	+	+	+
1	NS	+	NS	+
2	NS	NS	NS	NS
3	NS	NS	NS	NS
7	+	NS	+	+
11	NS	NS	NS	NS
12	+	a	+	a
13	NS	NS	NS	NS
14	+	NS	+	NS
18	+	+	NS	NS
19	+	NS	+	+
20	+	+	+	+
24	NS	NS	NS	-
31	NS	NS	+	NS
33	NS	NS	+	NS
43	NS	+	+	NS
Total Score	+	NS	+	NS

[a]Data not available from Michigan study.

Key: + indicates significant difference between administrator and teacher perception with administrator overvaluing or teacher undervaluing quality scores.

- indicates significant difference between administrator and teacher quality perception with teacher overvaluing or administrator undervaluing quality scores.

NS indicates no significant difference between teacher and administrator quality perception.

Table 17. Summary of relationships between teacher and administrator perceptions of quality within individual high and low financial support districts in Michigan and United States samples.

Category and No. of Items	High Financial Support Districts						Low Financial Support Districts						Both					
	United States			Michigan			United States			Michigan			United States			Michigan		
	+	-	NS	+	-	NS	+	-	NS	+	-	NS	+	-	NS	+	-	NS
I: Student's Level of Knowledge and Attitudes (6)	3	0	3	3	0	3	5	0	1	4	0	2	3	0	1	3	0	2
II: Community Attitudes (11)	4	1	6	0	4	7	2	1	8	3	1	7	2	1	6	0	0	4
III: Curriculum (5)	1	0	4	1	0	4	4	0	1	1	0	4	1	0	1	0	0	3
IV: Use of Facilities (1)	1	0	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0
V: Socio-cultural Compopition of Community (11)	1	0	10	0	4	7	0	1	10	0	3	8	0	0	9	0	1	5
VI: Administration and Supervision (7)	1	0	6	2	0	4	2	0	5	2	1	3	1	0	5	1	0	3
VII: The Teacher and Teaching Methods (15)	6	0	9	4	0	10	8	0	7	4	1	9	5	0	6	2	0	7
Total Score: (56)	17	1	38	11	8	35	22	2	32	14	6	34	13	1	28	6	1	24

Key: + indicates significant difference between administrator and teacher perception with administrators overvaluing or teachers undervaluing quality score.

- indicates significant difference between administrator and teacher perception with administrator undervaluing or teacher overvaluing quality score.

NS indicates no significant difference between teacher and administrator quality perception.

The frequency of the educational characteristics which have the same teacher-administrator perceptual relationship according to either low or high financial support level is indicated under "Both."

Summary of Tests of Hypothesis II Concerning Individual Large and Small School Districts

1. Educational Characteristics Criterion, (ECC) non-discrimination between teacher and administrator total quality scores within one large school district and within one small school district indicates that significant agreement exists between teachers and administrators within each district concerning the level of educational quality in the respective district schools. ECC discrimination between total mean scores of teachers and administrators in the other small district indicates significant difference or disagreement between teacher and administrator perceptions of educational quality (Table 25).

2. Educational Characteristics Criterion, (ECC) non-discrimination between category mean scores of teachers and administrators within one large district of the high financial support quartile indicates agreement between teacher and administrator perceptions of educational quality as measured by categories I: ("Student's Level of Knowledge and Attitudes"), II: ("Community Attitudes"), VI: ("Administration and Supervision"), and VII: ("The Teacher and Teaching Methods"). Discrimination between teacher and administrator category scores within this district is indicated by the significant differences in their perceptions of education quality in categories III: ("Curriculum"), IV: ("Use of Facilities"), and V: ("Socio-cultural Composition of Community"). Table 26 reports the summary of these relationships.

3. Educational Characteristics Criterion, (ECC) non-discrimination between category mean scores of teachers and administrators within two small school districts representing the low financial support quartile of districts shows agreement between teacher and administrator perceptions of educational quality for all seven categories in District No. 23 and administrator-teacher agreement for categories I: ("Student's Level of Knowledge and Attitudes"), III: ("Curriculum"), IV: ("Use of Facilities"), and VI: ("Administration and Supervision")

for District No. 15. Significant disagreement or discrimination between teacher and administrator quality perceptions of categories II: ("Community Attitudes"), V: ("Socio-cultural Composition of Community"), and VII: ("The Teacher and Teaching Methods") is noted for District No. 15.

4. The findings indicate a lack of systematic agreement between the individual large school district scores and the high financial support quartile results and between the two small school district findings and the low financial support quartile results. The relationships between teacher and administrator perceptions of educational quality within individual large and small school districts appear to differ from their respective financial quartiles according to the unique and special values and expectations within individual school districts and communities (Tables 20 and 26).

5. The systematically positive agreement between teacher and administrator perceptions of educational quality within individual large and small school districts in the 1962 Michigan study are not verified fully by the findings of this study. Table 18 summarizes the comparative relationships of teacher and administrator category mean scores of individual large and small school districts. Comparable results are found in categories I: ("Student's Level of Knowledge and Attitudes"), III: ("Curriculum"), IV: ("Use of Facilities"), and VI: ("Administration and Supervision") for small school districts within the low financial support quartile and categories I: ("Student's Level of Knowledge and Attitudes") and II: ("Community Attitudes") for the large school district within the high financial support quartile. With the exception of one small district, the results for total quality scores of teachers and administrators substantiate the difference in over-all findings of this study as compared to the 1962 study of Michigan teachers and administrators. The differences in over-all results and findings were initially indicated in the analysis of Tables 16 and 17.

Table 18. Summary of relationships between teacher and administrator quality perceptions within individual large and small school districts in Michigan and United States samples.

Category	Large School Districts			Small School Districts		
	United States (No. 2)	Michigan (No. 1)	United States (No. 15)	United States (No. 23)	Michigan (No. 10)	Michigan (No. 37)
I: Student's Level of Knowledge and Attitudes	NS	NS	NS	NS	NS	NS
II: Community Attitudes	NS	NS	+	NS	NS	NS
III: Curriculum	+	NS	NS	NS	NS	NS
IV: Use of Facilities	+	NS	NS	NS	NS	NS
V: Socio-cultural composition of Community	+	NS	+	NS	NS	NS
VI: Administration and Supervision	NS	+	NS	NS	NS	NS
VII: The Teacher and Teaching Methods	NS	+	+	NS	NS	NS
Total Score:	NS	+	+	NS	NS	NS

Key: + indicates significant difference between administrator and teacher perception with administrator overvaluing or teacher undervaluing quality score.

NS indicates no significant difference between teacher and administrator perceptions of educational quality.

Statistical Tests and Treatments

The "t" test statistic was used to determine the significance of the observed differences between the mean scores of teachers and administrators. The statistical objectives dictated the .05 level of significance for rejection or acceptance of the null hypotheses. The null hypotheses will be accepted if the "t" value exceed the chosen significance level ($P > .05$), indicating agreement of perception between teachers and administrators. The null hypotheses will be accepted if the "t" statistic is not greater than the significance level indicating non-agreement or difference in the perceptions of teachers and administrators.

The full statistical tests and techniques described and used in analyzing Hypothesis I, Chapter IV, are used to fulfill the objectives of the analysis of Hypothesis II. A comparison is made of the levels of agreement and disagreement between teacher and administrator perceptions of educational quality according to the levels of financial support. The objectives of these tests and treatments require specifying the extent of agreement between teacher and administrator responses in both low and high financial support districts and the additional effects of financial support levels on the relationships between teacher and administrator perceptions of educational quality.

Results and Evaluation of Statistical Treatment

Total Scores Within High and Low Financial Support Districts

In order to determine if the Educational Characteristics Criterion, (ECC) could provide information concerning the unanimity of teacher and administrator perceptions of quality within low and high

financial support quartiles, the total mean scores appearing in Table 19 were compared by means of the "t" test. On the basis of statistically significant differences in total mean scores we reject the null hypothesis:

> H4a: Within high financial support districts and within low financial support districts there is no difference between total mean scores of teachers and administrators.

and reject the research hypothesis that the Educational Characteristics Criterion, (ECC) will not discriminate positively between the responses of teachers and administrators.

Table 19. Differences between the total mean scores of teachers and administrators according to high and low educational financial support school districts.[1]

Score	High Financial Support Districts		Low Financial Support Districts	
	Teachers	Administrators	Teachers	Administrators
Total	153.095	159.000	144.408	152.231
	S(P < .005)		S(P < .001)	

S indicates a level of significance between mean scores at a minimum of P < .05.

P < .005 and P < .001 represent higher levels of significance than the minimum required.

The positive discrimination between teacher and administrator responses concerning educational quality indicates that there is significant disagreement between teachers and administrators concerning total educational quality within both high and low educational financial support districts.

[1]See Appendix J for additional statistical data.

Category Scores Within High and Low Financial Support Districts

Table 20 presents the results of the comparison of each category mean score of teacher and administrator responses according to district type. On the basis of the significant differences in category mean scores we reject the null hypothesis:

> H4b: Within high financial support districts and within low financial support districts there is no difference between each category mean score of teachers and administrators.

for each category except category V: ("Socio-cultural Composition of Community") and reject the research hypothesis that the Educational Characteristics Criterion, (ECC) will not discriminate between teacher and administrator responses within high or low financial support districts. On the basis of non-discrimination between teachers and administrators for category V: ("Socio-cultural composition of community") we accept the null hypothesis H4b and the research hypothesis which indicates an expected agreement between teacher and administrator responses according to district type.

The significant level of discrimination between the responses of teachers and administrators in six of the seven categories indicates that there is a difference in their perceptions of the effects of the various influences upon educational quality within both high and low financial support school districts. The level of category mean scores described in Table 20 also indicate that administrators in both district types are overvaluing the educational quality in relation to the views of teachers within the same district types. It is also possible to interpret this effect as an undervaluing of educational quality by teachers as opposed to the responses of administrators to the identical measures of quality. The uniformly higher category mean scores of administrators is present regardless of district type indicating independence from the financial support factors.

Table 20. Differences between category mean scores of teachers and administrators according to high and low educational financial support districts.[2]

Score	High Financial Support Districts		Low Financial Support Districts	
	Teacher	Administrators	Teacher	Administrators
Category I: Student's Level of Knowledge and Attitudes	16.32	17.47	15.56	16.87
	S(P < .001)		S(P < .001)	
Category II: Community Attitudes	28.54	29.76	26.92	28.27
	S(P < .05)		S(P < .05)	
Category III: Curriculum	16.07	16.57	15.06	16.22
	S(P < .05)		S(P < .05)	
Category IV: Use of Facilities	2.90	3.18	2.39	2.63
	S(P < .01)		S(P < .02)	
Category V: Socio-cultural Composition of Community	25.58	27.99	26.15	26.67
	NS(P > .05)		NS(P > .05)	
Category VI: Administration and Supervision	16.55	17.46	15.16	16.43
	S(P < .02)		S(P < .005)	
Category VII: The Teacher and Teaching Methods	45.09	46.58	42.81	45.15
	S(P < .02)		S(P < .001)	

S indicates statistically significant difference between category mean scores at a minimum of P < .05 with higher levels indicated.

NS indicates a non-significant statistical difference between category mean scores.

[2]See Appendix J for additional statistical data.

The non-discrimination present in category V: ("Socio-cultural Composition of Community") signifies consensus between teacher and administrator perceptions of educational quality related to the characteristics concerning community and environmental factors. It could be assumed that teacher and administrator expectations regarding the relationships between educational quality and socio-cultural factors are similar in school districts of both high and low financial support quartiles.

Individual Educational Characteristic Scores Within High and Low Financial Support Districts

Based on an item by item analysis of individual educational characteristic mean scores to determine non-significant differences between teacher and administrator responses we accept the null hypothesis:

> H4c: Within high financial support districts and within low financial support districts there is no difference between each educational characteristic mean score of teachers and administrators.

for the twenty-eight individual educational characteristics appearing in Table 21 and accept the research hypothesis that the Educational Characteristics Criterion, (ECC) will not discriminate between teacher and administrator perceptions of educational quality within high and low financial support districts.

The results of the non-discrimination of these individual items substantiate the findings that category V: ("Socio-cultural Composition of Community") provides the highest degree of consensus between administrator and teacher perception of educational quality.

On the basis of the significant differences in individual educational characteristic mean scores we reject the null hypothesis:

Table 21. Individual educational characteristics on which consensus exists between teachers and administrators within high financial support districts and within low financial support districts.[3]

Item No.	Educational Characteristic
Category I: Student's Level of Knowledge and Attitudes	
52	The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement.
Category II: Community Attitudes	
28	The perceptions of parents and patrons concerning the purposes of education are consistent and clear.
30	There is no lag between the values taught in the school and what is practiced in the community.
36	A high percentage of the electorate in the community vote in school elections.
39	The community exhibits a great concern for the development of aesthetic and artistic interests.
45	The parents in this community expect their children to perform their share of family chores.
53	A high value is placed on education by the parents and patrons (those residents of a school district without school-age children) of the community.
Category III: Curriculum	
4	Teachers perceive a coherent and coordinated structure to the educational program.
Category V: Socio-cultural Composition of Community	
34	Cultural experiences are readily available in the community.
38	This is a highly stable community which does not have too many people leaving.

Continued

[3]See Appendix K for additional statistical data.

Table 21 - Continued

Item No.	Educational Characteristic
Category V: Socio-cultural Composition of Community (cont'd)	
41	A high percentage of high school students own personal cars.
42	A high percentage of homes own television sets.
44	A high degree of ethnic, racial, and religious homogeniety exists among the local population.
46	This community is composed of people who are predominantly Protestant.
47	This community is composed of people who are predominantly Catholic.
49	The population of this community is equally divided between Protestants and Catholics.
50	One or two ethnic groups comprise the largest number of residents in the community.
Category VI: Administration and Supervision	
10	Professional staff of the school system are involved in in-service education.
22	Lay members of the community are highly involved in the planning of educational goals with the school staff.
23	Regulations governing student conduct are highly explicit and detailed.
27	Citizens are highly organized to discuss school problems.
56	School program is accredited by the state and/or regional accrediting agencies.[a]

Continued

[a]Teacher scores were obtained from administrator information sheet.

Table 21 - Continued

Item No.	Educational Characteristic
Category VII: The Teacher and Teaching Methods	
1	Teachers have intimate knowledge of children.
2	Teaching practices reflect concern for individual differences.
3	Teaching practices reflect a knowledge of individual differences.
11	Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions.
13	Teachers have complete freedom to teach what they consider to be important.
24	High degree of teacher participation in social and political of the community.

H4c: Within high financial support districts and within low financial support districts there is no difference between each educational characteristic mean score of teachers and administrators.

for the high financial support quartile districts and accept the null hypothesis for the low financial support districts for the four individual characteristics reported in Table 22. The research hypothesis that the Educational Characteristics Criterion, (ECC) will not discriminate between administrator and teacher responses is rejected for the high financial support quartile and accepted for the low financial support quartile districts. The significant discrimination or differences in perceptions in the high financial support districts indicate that administrators are overvaluing the four characteristics listed in Table 22, in relation to item mean scores of teacher respondents for the same characteristics.

Table 22. Individual educational characteristics which are overvalued by administrators in high financial support districts and on which consensus exists between teachers and administrators in low financial support districts.[4]

Item No.	Educational Characteristic
Category II: Community Attitudes	
21	Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education.
29	The local newspaper has shown a high interest in local school affairs.
Category V: Socio-cultural Composition of Community	
25	The social status of teachers is very high in this community.
Category VII: The Teacher and Teaching Methods	
18	Teachers often avail themselves of professional help.

The findings indicate that administrators of high financial support districts view the social status of teachers and the extent to which teachers seek professional help somewhat differently than the teachers. It is also apparent that teacher values and standards relating to the extent of knowledge about education shown by lay members of the community are somewhat higher than administrator values and standards. The overvaluing by administrators of the characteristic representing interest in school affairs by the newspaper could logically be attributed in part by the kind and type of news coverage and interest shown.

[4]See Appendix K for additional statistical data.

Based on the significant difference in individual educational characteristic mean scores we reject the null hypothesis:

> H4c: Within high financial support districts and within low financial support districts there is no difference between each educational characteristic mean score of teachers and administrators.

for the low financial support districts and accept the null hypothesis for the high financial support districts for the ten individual items appearing in Table 23. The research hypothesis stating that the Educational Characteristics Criterion, (ECC) will not discriminate significantly between teachers and administrators is rejected for the low quartile districts and accepted for the high financial support districts. Administrators in the low financial quartile undervalue the single characteristic in the first part of Table 23 and overvalue the nine educational characteristics reported in the second part of Table 23.

Table 23. Individual educational characteristics which are undervalued (Part I) or overvalued (Part 2) by administrators in low financial support districts and on which consensus exists between teachers and administrators in high financial support districts.[5]

Item No.	Educational Characteristic
Part 1 - Undervalues by Administrators in Low Financial Support Districts	
Category V: Community Attitudes	
48	This community is composed of people who are predominantly Jewish.
Part 2 - Overvalued by Administrators in Low Financial Support Districts	
Category I: Student's Level of Knowledge and Attitudes	
51	Pupils consider an academic grade of at least "B" to be the norm for academic achievement.

Continued

[5]See Appendix K for additional statistical data.

Table 23 - Continued

Item No.	Educational Characteristic
Category I: Student's Level of Knowledge and Attitudes (cont'd)	
54	Parents and patrons in the community consider an academic grade of at least "B" to be the norm for academic achievement.
Category III: Curriculum	
5	Consensus exists among the staff concerning the goals of the educational program.
6	A structure has been developed that permits continual curriculum experimentation.
17	A complete comprehensive testing program including intelligence and achievement testing is available in the schools.
Category VI: Administration and Supervision	
26	Regulations governing personnel policies are highly explicit and detailed.
Category VII: The Teacher and Teaching Methods	
31	There exists a high level of cooperation among teachers of the staff.
33	The community and its residents are used for instructional purposes.
43	A great deal of homework is assigned to students.

An analysis of the results reported in Table 23 indicates that administrators of low financial quartile districts understate the proportion of Jewish population in their communities. The findings also show that administrators in low quartile districts overvalued the nine individual educational characteristics in Part 2 of Table 23. The absence of administrator overvaluing in Category II: ("Community

Attitudes") and Category V: ("Socio-cultural Composition of Community") is evident. It appears that teachers and administrators perceive the characteristics concerning socio-economic-cultural aspects of their communities in similar ways. The nine characteristics which are overvalued by low quartile administrators deal with values and expectations which largely can be classified as part of the internal structure of the school program. These significant differences in perceptions of educational quality by teachers and administrators in the low financial support districts could be attributed to (1) basic differences in educational values, standards and expectations, and (2) lack of ineffectiveness of communications between teaching and administrative personnel.

The Educational Characteristics Criterion, (ECC) provides a measure of discrimination between teachers and administrators within either high financial support or low financial support districts for each of the fourteen individual educational characteristics listed in Table 24. The discrimination indicates an undervaluing of the single educational characteristic in Part 1 since the teacher item mean score significantly exceeds the administrator mean score for the same item. The remaining thirteen individual characteristics are overvalued by administrators in both high and low quartile districts according to their relationship to teacher mean scores. On the basis of the significant differences in individual characteristic mean scores we reject the null hypothesis:

> H4c: Within high financial support districts and within low financial support districts there is no difference between each educational characteristic mean score of teachers and administrators.

and reject the research hypothesis of non-discrimination between teacher and administrator responses with school districts of high and low financial support for the individual items reported in Table 24.

Table 24. Individual educational characteristics which are undervalued (Part 1) or overvalued (Part 2) by administrators in low financial support districts and in high financial support districts.[6]

Item No.	Educational Characteristic
Part 1: Undervalued by Administrators	
Category II: Community Attitudes	
55	Parents condone or encourage early dating for their children.
Part 2: Overvalued by Administrators	
Category I: Student's Level of Knowledge and Attitudes	
8	Students show a positive attitude toward scholastic work.
9	Students evidence accurate knowledge of self.
16	Students are knowledgeable about the educational and social opportunities available to them.
Category II: Community Attitudes	
37	There are outstanding community leaders in this community who exhibit great interest in school affairs.
40	A two-way communication channel readily exists between the home and the school.
Category III: Curriculum	
15	A great variety of instructional techniques are presently used in the classroom.
Category IV: Use of Facilities	
32	The physical facilities of the school system (buildings and equipment) are completely adequate.
Category VI: Administration and Supervision	
35	Teachers' judgments are almost always used in the determination of educational policies.

Continued

[6]See Appendix K for additional statistical data.

Table 24 - Continued

Item No.	Educational Characteristic
Category VII: The Teacher and Teaching Methods	
7	Evidence exists of instructional and/or curricular experimentation.
12	All teachers are certified to teach at the grade level or subject they are now teaching.
14	A great variety of instructional techniques are presently used in the classrooms.
19	Complete freedom is granted to students to investigate any local, state, national or international issue.
20	Availability to students of materials that reflect all shades of political and sociological points of view.

The overvaluing or undervaluing of the individual educational quality characteristics listed in Table 24 can be assumed to occur independently of district type. Administrators, according to their perceptions, tend to overvalue quality in relation to perceptions of teachers since thirteen of the individual items listed are overvalued while only a single item is undervalues.

The findings with regard to administrator overvaluing of quality determinants reveal the presence of overvaluing to be associated with educational characteristics which normally occur in the classroom situation. An imperfect but discernable pattern emerges from the characteristics appearing in Table 24. Administrators, regardless of district type, tend to overvalue the quality characteristics generally measured by intimate knowledge of students and of activities conducted by the teacher within classrooms. This tendency is particularly evident in the contract between administrator-teacher responses to the three items in Category I: ("Student's Knowledge and Attitudes"); the

Category III item relating to instructional techniques in use; and the five characteristics in Category VII: ("The Teacher and Teaching Methods"). These educational characteristics are all closely related to the level of classroom instruction. The significant differences in quality perception of these items may be assumed to reflect either a difference in values and expectations between teachers and administrators or an indication of inadequacy of administrator information concerning those quality characteristics which are associated most closely with individual students and individual classroom activities.

Administrators regardless of district financial support level also overvalue the adequacy of school facilities and the extent of the use of teacher judgments in educational policy making. Assuming adequate information concerning these characteristics, the reasons for administrator overvaluing could be influenced by the presence of different expectations, standards, or values than those held by teachers. Teacher norms and expectations concerning these quality determinants are apparently higher than the administrator norms for the same educational characteristics.

Results of Total Score Tests Within Large and Small Districts

In order to determine if the Educational Characteristics Criterion, (ECC) could provide information concerning the differences between teacher and administrator perceptions of quality within a large school district exemplifying the characteristics of the high financial support quartile and within two small school districts conforming to the characteristics of the low financial support quartile, total quality mean scores and category mean scores were compared statistically.

Data for testing Hypothesis II in the method described was provided by the random selection of one high financial quartile district and two low financial quartile districts. District No. 2 was selected as

characteristic of a large school district (207 teacher respondents, 23 administrator respondents). District No. 15 (71 teacher respondents, 5 administrator respondents) and District No. 23 (61 teacher respondents and 4 administrator respondents) were chosen as characteristic of small school districts within the low financial support quartile.

Based on statistically non-significant difference in total mean scores reported in Table 25, we accept the null hypothesis:

> H5a: Within individual large and small school districts there is no difference between total mean scores of teachers and administrators.

for District No. 2 and District No. 23 and reject the null hypothesis for District No. 15. The research hypothesis that the Educational Characteristics Criterion, (ECC) will not discriminate between perceptions of teachers and administrators is accepted for Districts No. 2 and 23 and rejected for District No. 15.

Table 25. Differences between the total mean scores of teachers and administrators within Districts No. 2, No. 15, and No. 23.[7]

District No. and Size	Teachers	Administrators	Statistical Significance of Difference
No. 2 (Large	165.951	171.565	NS (P > .05)
No. 15 (Small	137.323	155.600	S (P < .001)
No. 23 (Small)	139.032	159.500	NS (P > .05)

The non-significant difference or agreement between the perceptions of teachers and administrators as measured by total quality

[7]See Appendix L for additional statistical data.

mean scores within District No. 2 representative of the high financial support quartile and District No. 23 representing the low financial support quartile are in disagreement with the results derived from the entire low and high financial quartiles. The finding for each of the full financial support quartiles indicated a significant difference between teacher and administrator perceptions of quality based on total mean scores. The test of Hypothesis II for District No. 15 indicates significant difference or disagreement between teacher and administrator perceptions of quality based on total mean score. This finding is in agreement with the results of the tests of the total mean score for the entire low financial support quartile. The effects of various special influences within individual school districts are apparently responsible for differences from the perceptual relationships established for the entire low and high financial support quartiles.

Results of Category Score Tests Within Large and Small Districts

Based on non-significant differences in category mean scores reported in Table 26 we accept the null hypothesis:

> H5b: Within individual large and small school districts there is no difference between each category mean score of teachers and administrators.

for all category scores listed for District No. 23 (small); and for categories I, II, VI, and VII in District No. 15 (small). The research hypothesis that the Educational Characteristics Criterion, (ECC) will not discriminate between teacher and administrator perceptions of quality is accepted for all category scores of District No. 23; category

Table 26. Differences between category mean scores of teachers and administrators within Districts No. 2, No. 15, and No. 23.[8]

Score	District No. 2		District No. 15		District No. 23	
	Teach.	Admin.	Teach.	Admin.	Teach.	Admin.
Category I: Student's Level of Knowledge and Attitudes	18.80	19.48	14.87	16.80	15.41	18.25
	NS		NS		NS	
Category II: Community Attitudes	32.15	33.09	25.65	28.80	25.23	31.25
	NS		S(P < .05)		NS	
Category III: Curriculum	16.43	17.22	14.79	15.80	14.72	16.00
	S(P < .05)		NS		NS	
Category IV: Use of Facilities	3.05	3.65	2.03	2.40	2.56	3.00
	S(P < .001)		NS		NS	
Category V: Socio-cultural Composition of Community	30.60	31.61	24.86	28.60	24.28	27.00
	S(P < .05)		S(P < .001)		NS	
Category VI: Administration and Supervision	18.56	18.74	14.82	15.20	14.89	17.25
	NS		NS		NS	
Category VII: The Teacher and Teaching Methods	46.36	47.78	40.31	48.00	41.95	46.75
	NS		S(P < .001)		NS	

The statistical significance level is P > .05 except where indicated.

[8]See Appendix L for additional statistical data.

I, II, VI, VII scores for District No. 2; and category I, III, IV, and VI scores for District No. 15. The null hypothesis and the research hypothesis are rejected for category III, IV, and V scores for District No. 2 and for Category II, V, and VII scores for District No. 15.

The findings of the tests on the individual large school district support the findings for the high financial support quartile districts (Table 20) only for categories III: ("Curriculum") and IV: ("Use of Facilities"). The perceptions of teachers and administrators concerning measures of educational quality indicated by these two categories differ significantly. The results of small district tests with the exception of category V: ("Socio-cultural Composition of Community") for District No. 23 and Categories II: ("Community Attitudes") and VII: ("The Teacher and Teaching Methods") for District No. 15 do not support the discrimination findings for the low financial support quartile districts (Table 20). The variable patterns found in the overall analysis of relationships between teacher and administrator perceptions of educational quality indicate apparent differences in teacher-administrator values and expectations within each financial quartile of districts. The analysis indicates that teachers and administrators in both high and low financial support districts and in both large and small districts within quartiles tend to differ significantly in perceptions of educational quality in areas except category V: ("Socio-Cultural Composition of Community"). The most significant differences between perceptions of teachers and administrators occur in areas associated with regular school services, those services in particular which take place within the classroom learning situation.

CHAPTER VI

ANALYSIS OF HYPOTHESES III, IV AND V DATA--RELIABILITY AND ITEM ANALYSIS TESTS

The analysis of data presented in this chapter contains the analysis of the reliability of the Educational Characteristics Criterion, (ECC), within the high financial support quartile, within the low financial support quartile, and within individual large and small school districts. This chapter is also concerned with an analysis of the discrimination power and ability of the individual item scores in the Educational Characteristics Criterion, (ECC), with respect to total quality scores and to related category scores. In addition, inter-relationships between categories are presented and discussed. The decision rules outlined in Chapter IV are also used as guides in summarizing the results of the statistical tests presented here.

The third major null hypothesis and eight operational sub-hypotheses are stated as follows:

> The Educational Characteristics Criterion, (ECC) will not show high reliability within the high financial support quartile of districts and within the low financial support quartile of districts.
>
> H6a: There will not be a high consistency in individual educational characteristic scores and the total scores of teacher respondents in the high financial support quartile of districts.
>
> H6b: There will not be a high consistency in individual educational characteristic scores and the total scores of administrator respondents in the high financial support quartile of districts.

H6c: There will not be a high consistency in individual educational characteristic scores and the total scores of teacher respondents in the low financial support quartile of districts.

H6d: There will not be a high consistency in individual educational characteristic scores and the total scores of administrator respondents in the low financial support quartile of districts.

H7a: There will not be a high consistency in individual educational characteristic scores and the related category scores of teacher respondents in the high financial quartile of districts.

H7b: There will not be a high consistency in individual characteristic scores and the related category scores of administrator respondents in the high financial support quartile of districts.

H7c: There will not be a high consistency in individual characteristic scores and the related category scores of teachers and administrator respondents in the low financial quartile of districts.

H7d: There will not be a high consistency in individual characteristic scores and the related category scores of administrator respondents in the low financial support quartile of districts.

Additional tests of the Educational Characteristics Criterion, (ECC) reliability are outlined in Hypothesis IV. The fourth major null hypothesis and eight operational hypotheses are stated as follows:

The Educational Characteristics Criterion, (ECC), will not show high reliability within individual large and small school districts.

H8a: There will not be a high consistency in individual educational characteristics scores and the total scores of teacher respondents in large districts.

H8b: There will not be a high consistency in individual educational characteristics scores and the total scores of administrator respondents in large districts.

H8c: There will not be a high consistency in individual educational characteristic scores and the total scores of teacher respondents in small districts.

H8d: There will not be a high consistency in individual educational characteristic scores and the total scores of administrator respondents in small districts.

H9a: There will not be high consistency in individual educational characteristic scores and related category scores of teacher respondents in large districts.

H9b: There will not be high consistency in individual educational characteristic scores and related category scores of administrator respondents in large districts.

H9c: There will not be a high consistency in individual educational characteristic scores and related category scores of administrator respondents in small districts.

The fifth and final major hypothesis is stated in the null form as follows:

The individual educational characteristic scores in the Educational Characteristics Criterion will not have adequate positive discrimination power with respect to the total quality score and to their related category scores.

Two sub-hypotheses, or operational hypotheses, are utilized to provide precise disclosure of the discrimination ability and power of the individual educational characteristics that comprise the body of the instrument. The sub-hypotheses are stated in the following manner:

H10: The correlation coefficient for the relation of individual educational characteristic scores to total score differs significantly from zero.

H11. The correlation coefficient for the relation of each educational characteristic score to its perspective category score differs significantly from zero.

Summary of Hypotheses III and IV Results Concerning Tests of Reliability

1. Using the reliability coefficient of .71 to 1.00 as a definition of high reliability it was determined that teacher and administrator respondents within individual large and small school districts have highly reliable total quality scores. With the exception of administrator total scores within one of the two small school districts, the reliability coefficients exceed .86 with a sensitivity significance level of .017 or lower (Tables 27, 28, 29, 30).

2. Teacher respondents in the individual large school district had operationally useful reliability scores for categories II (Community Attitudes), VI (Administration and Supervision), and VII (The Teacher and Teaching Methods (Tables 29 and 30).

3. Administrator respondents in the individual large school district had usable reliability scores for categories II (Community Attitudes), VI (Administration and Supervision), and VII (The Teacher and Teaching Methods) (Tables 29 and 30).

4. Teacher respondents in two individual small school districts showed usable reliability levels for scores of Categories II (Community Attitudes), III (Curriculum), and VII (The Teacher and Teaching Methods) (Tables 29 and 30).

5. Reliability test results for administrator respondents in two individual small school districts showed usable reliability levels in categories II (Community Attitudes), and III (Curriculum).

6. Fifty percent of the category scores for teacher and administrator respondents within individual large and small school districts have reliability and sensitivity levels which may be considered operationally useful.

7. Category I (Student's Level of Knowledge and Attitudes) and Category V (Socio-cultural Composition of Community) have particularly low reliability levels according to each respondent and district type. This result is consistent with the findings reported in tests of Hypothesis III which described reliability levels within quartiles of districts.

8. The finding of relatively low reliability for Category V (Socio-cultural Composition of Community) is consistent with the findings reported in the Michigan study.

Summary of Hypothesis V Results Concerning Item Discrimination Ability and Power

1. Using the point biserial coefficients of correlation as the statistical measure of discrimination ability and power of the individual educational characteristics scores related to total quality score it was determined that all but four of the individual items in the Educational Characteristics Criterion, (ECC) have adequate positive discrimination power and ability. Items No. 46, Category V ("This community is composed of people who are predominantly Protestant"); No. 47, Category V ("This community is composed of people who are predominantly Catholic"); No. 55, Category II ("Parents condone or encourage early dating for their children"): and No. 49, Category V ("The population of this community is equally divided between Protestants and Catholics") do not have significant discrimination power and ability (Table 31).

2. Educational characteristic No. 46, Category V ("This community is composed of people who are predominantly Protestant") was found to be the only item lacking adequate discrimination power with respect to the related category score.

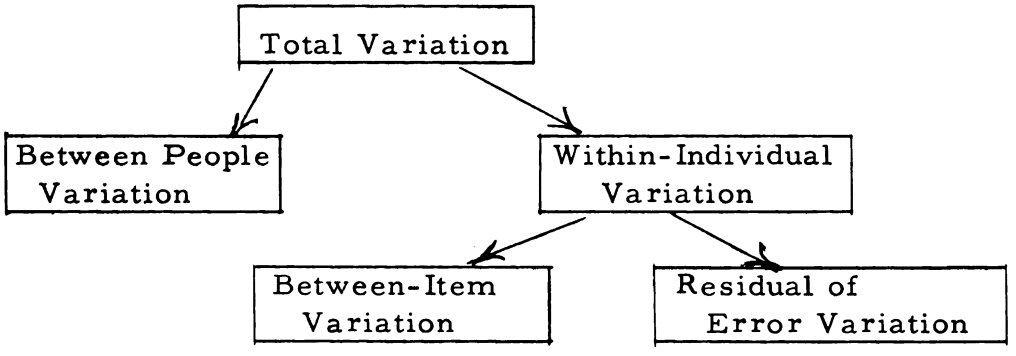
3. Median correlation coefficients for each category of educational characteristics and for total quality scores were found to have significant discrimination ability and power. The lowest overall discrimination level was found in Catebory V ("Socio-cultural Composition of Community") for both relationship between item score and category score and item score to total quality score (Table 32).

4. During the course of this study it became evident that the category scores were related in some positive manner. It seemed that even though the perceptions of category items by teacher and administrators varied in such a manner that the respective categories were functionally independent, it was more probable that the factors which caused the perceptions to vary on one category of items would also be effective in causing the scores on other categories to move in corresponding directions. Product-moment coefficients of correlations indicated significant interrelationship between the seven categories of the Educational Characteristics Criterion, (ECC) (Tables 33, 34 and 35). In general the most highly interrelated categories were: (1) Category II (Community Attitudes) with Category V (Socio-cultural Composition of Community); (2) Category II (Community Attitudes) with Category VI (Administration and Supervision); (3) Category II (Community Attitudes) with Category VII (The Teacher and Teaching Methods); (4) Category III (Curriculum) with Category VII (The Teacher and Teaching Methods); and (5) Category VI (Administration and Supervision) with Category VII (The Teacher and Teaching Methods).

5. Tables 31 and 32 show the comparison of the level of discrimination power and ability of individual characteristics with respect to total quality score and related category score for this study and for the 1962 Michigan study. Conclusions concerning the similarities in results between the two studies will be described and presented in Chapter VII.

Statistical Tests and Treatments--Hypothesis III

The method used for the estimation of reliability of the several dimensions of the test items by use of an analysis of variance technique was derived by Hoyt.[1] In the analysis of this technique the total variation in test scores is divided into two parts: one part is a function of differences between the means of teachers or administrators; the other part is a function of the pooled variation within individuals (teachers or administrators). The difference between test scores depends in part upon the difference in item effects and in part upon uncontrolled or residual sources of variance. Hence the pooled within-person variance may be divided into two parts: one part which depends upon differences in test item means, and a second part which consists of residual or error variation. A schematic representation of the partition of total variance between item mean scores is as follows:



Reliability is estimated from the function: variance of between people scores minus error variance divided by variance between scores of people. In other words, if there was an exceedingly high error of measurement, it would enter into the residual or error variance and the experimental design or individual educational characteristic would not be efficient or sensitive enough to discriminate among the

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[1]C. S. Hoyt, "Test Reliability Estimated by Analysis of Variance," Psychometrika, Vol. 6 (1941), pp. 153-160.

financial quartiles of school districts or among the teachers and administrators within these districts.

Two statistical methods of analyzing the experimental results were used--the F test and Jackson's V test of sensitivity.[2] The F statistic is computed by use of the ratio of the mean square of the individual to the residual or error mean square. If the F value exceeds the critical value of $F > F_{.99}$ with degrees of freedom individuals minus one and test items minus one the hypothesis is rejected, and it is concluded that the two mean squares differ significantly. The rejection of F indicates that the effect of the item variation is significant and the item measures with an accuracy sufficient to distinguish between the school districts or individuals tested. The V statistic measures the relative accuracy or sensitivity of the test by determining the relation between the size of the residual or error variance and the size of the differences between the individuals tested. V is computed by dividing the standard deviation of the distribution of true test scores (mean square of individuals minus error mean square) by the error mean square.

The sensitivity and reliability coefficient are related in the following manner:

$$V \text{ equals } \sqrt{\frac{r^{tt}}{1 - r^{tt}}}$$

If V is small, then the errors of measurement will be large in comparison with differences between individuals tested, and the score obtained by an individual on a test may be determined largely by these random errors of measurement. For a particular value of V, the probability is determined from the normal curve table. If V equals 2.56, the normal curve for a two-tailed test indicates that the probability

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[2]Robert W. B. Jackson, "Reliability of Mental Tests," British Journal of Psychology, Vol. XXIX (1939), pp. 267-287.

of making an error as great or greater than one standard deviation of the true score is .0105 or only once in a hundred times.

In the analyses which follow reliability is considered high within the limits .71 to 1.00 with a sensitivity level of .11 or less.

In the preceding development it is assumed that the magnitude of the residual or error of measurement is uncorrelated with the true score. It is further assumed that changes in the true score are systematic and constant for all individuals, whereas the error of measurement is assumed to vary.

Results and Evaluation of Statistical Treatment--Hypothesis III

Total Score Reliability Within Quartiles

Table 27 presents the reliability test results for total quality scores of teachers and of administrators within the high financial support quartile and within the low financial support quartile. On the basis of the analysis presented we reject the null hypothesis:

> H6: There will not be a high consistency in individual educational characteristic scores and the total scores of (a) teacher respondents in the high financial support quartile of districts, (b) administrator respondents in the high financial support quartile of districts, (c) teacher respondents in the low financial support quartile of districts, and (d) administrator respondents of the low financial support quartile of districts.

and accept the research hypothesis that the Educational Characteristics Criterion, (ECC), shows high reliability in school districts with the high financial support quartile of districts and within the low financial support quartile of districts.

On the basis of the data in Table 27 it appears that relatively high total score reliabilities may be obtained by the Educational Characteristics Criterion, (ECC), for teacher and administrator respondents regardless of level of financial support.

Table 27. Reliability and sensitivity significance level of Educational Characteristics Criterion, (ECC), total scores of teachers and of administrators within the high financial quartile of districts and within the low financial quartile of districts.[3]

Score	Teachers		Administrators	
	rtt	p	rtt	p
	High Financial Support Quartile			
Total	.907	.002	.894	.005
	Low Financial Support Quartile			
Total	.913	.002	.911	.002

Category Score Reliability Within Quartiles

Based on the reliability test findings reported in Table 28 we reject the null hypothesis:

> H7: There will not be a high consistency in individual educational characteristic scores and the related category scores of (a) teacher respondents in the high financial quartile of districts, (b) administrator respondents in the high financial quartile of districts, (c) teacher respondents in the low financial quartile of districts, and (d) administrator respondents in the low financial quartile of districts, and for category II (Community Attitudes) and Category VII (The Teacher and Teaching Methods).

and accept the research hypothesis that the Educational Characteristics Criterion, (ECC), shows high reliability within the high and low financial support quartiles of districts according to categories II and VII.

Based on the reliability test results shown in Table 28 we accept the null hypothesis:

> H7: There will not be high consistency in the individual educational characteristic scores and the related category scores of

[3]See Appendices M and N for additional statistical data.

(a) teacher respondents in the high financial quartile of districts, (b) administrator respondents in the high financial quartile of districts, (c) teacher respondents in the low financial quartile of districts, and (d) administrator respondents in the low financial quartile of districts, according to Category I: ("Students Level of Knowledge and Attitudes"), Category III: ("Curriculum"), Category V: ("Socio-cultural Composition of Community"), and Category VI: ("Administration and Supervision").

and reject the research hypothesis that the Educational Characteristics Criterion, (ECC), shows high reliability within the high and low financial support quartiles of districts according to Categories I, III, V, and VII.

The results of the analysis of variance reliability tests described for total scores and category scores were derived from twenty-four possible category tests, six testable categories for two respondent types within two financial quartiles of districts. Eight of the twenty-four tests indicated high category reliability. Eight other category tests showed reliabilities closely approaching the lower limit of high reliability as defined (.71). These additional eight category tests indicate reliability coefficients (r_{tt}) in excess of .56 with sensitivity significance levels of .21 or less. On the basis of these data, it appears that relatively high reliabilities may be obtained by the use of the Educational Characteristic Criterion, (ECC), category scores within the limits of the sixteen tests analyzed above. Particularly unreliable is the measure of Category I: ("Student's Level of Knowledge and Attitudes") and Category V: ("Socio-cultural Composition of the Community") which are the only categories which in some manner do not exceed a coefficient of .50. These least reliable measures should be taken into account in the conclusions and findings regarding the other hypotheses in this study.

Table 28. Reliability and sensitivity significance level of Educational Characteristics Criterion (ECC) category scores of teachers and of administrators within the high financial support quartile of districts and within the low financial support quartile of districts.[4]

	High Financial Support Quartile				Low Financial Support Quartile			
	Teachers		Administrators		Teachers		Administrators	
	r_{tt}	p	r_{tt}	p	r_{tt}	p	r_{tt}	p
I: Student's Level of Knowledge and Attitudes	.42	.28	.50	.24	.42	.28	.11	.38
II: Community Attitudes	.77	.07	.76	.08	.75	.09	.76	.08
III: Curriculum	.57	.21	.52	.23	.59	.19	.61	.18
IV: Use of Facilities	(Single item--no test possible)							
V: Socio-cultural Composition of Community	.55	.21	.56	.21	.45[a]	.27	.47[a]	.26
VI: Administration and Supervision	.64	.16	.64	.16	.65	.16	.64	.16
VII: Teacher and Teaching Methods	.77	.08	.71	.12	.78	.07	.76	.08

[a]Low reliability also shown in Michigan study.

[4]See Appendices M and N for additional statistical data.

Statistical Tests and Treatments--Hypothesis IV

The statistical tests used for the estimation of reliability of the several dimensions of test items are identical to the test statistics which estimate reliability for Hypothesis III. Two statistical methods of analyzing the data for the test variables were used. The F statistic is used to determine the ability of the instrument to significantly discriminate between the total quality scores and category scores of individual teachers and administrators. The statistical significance of the coefficient of reliability, r_{tt}, is indicated by the level of significance of Jackson's V test of sensitivity. A significantly large V score indicates the errors of measurement between the perceptions of the individual respondents to the instrument.

Results and Evaluation of Statistical Treatment--Hypothesis IV

Total Score Reliability Within Individual Large and Small Districts

Table 29 presents the reliability and sensitivity results for total quality scores of teachers and of administrators within the individual large school districts and within the two individual small school districts. On the basis of the analysis presented we reject the null hypothesis:

> H8: There will not be a high consistency in the individual educational characteristic scores and total scores of (a) teacher respondents in large districts, (b) administrator respondents in large districts, (c) teacher respondents in small districts, and (d) administrator respondents in small district No. 23.

and accept the research hypothesis that the Educational Characteristics Criterion, (ECC), shows high reliability within an individual large school district and within one of two individual small school districts.

Based on the data listed in Table 29 we accept the null hypothesis H8d for administrators of small school district No. 15 and reject the research hypothesis that the Educational Characteristics Criterion shows high reliability within this individual small school district.

An evaluation of the results described in Table 29 indicate that the Educational Characteristics Criterion, (ECC), has very high total quality reliability and sensitivity except for administrators in one of the two small school districts tested. The small number of administrator respondents in the small school districts could account for the significant variations in reliability within this district type.

Category Score Reliability Within Individual Large and Small School Districts

Based upon the reliability test results presented in Table 30 we reject the null hypothesis:

> H9: There will not be high consistency in individual educational characteristic scores and related category scores according to the following respondent types:
>
> (a) Teacher respondents in large school districts for catefory score VII (The Teacher and Teaching Methods).
>
> (b) Administrator respondents in large school districts for category score II (Community Attitudes).
>
> (c) Teacher respondents in both individual small school districts for category score VII (The Teacher and Teaching Methods).
>
> (d) Administrator respondents in both individual small school districts for category scores II (Community Attitudes) and III (Curriculum).

and accept the research hypothesis that the Educational Characteristics Criterion, (ECC), will show high reliability for teachers and for administrators within individual large and small school districts.

Table 29. Reliability and sensitivity significance level of Educational Characteristics Criterion, (ECC) total scores of teachers and of administrators within an individual large school district and within two individual small school districts.[5]

Score	Large District (No. 2)				Small District (No. 15)				Small District (No. 23)			
	Teachers (N=207)		Administrators (N=23)		Teachers (N=71)		Administrators (N=5)		Teachers (N=61)		Administrators (N=4)	
Total	r_{tt}	p	r_{tt}	p	r_{tt}	p	r_{tt}	p	r_{tt}	p	r_{tt}	p
	.906	.003	.0862	.017	.912	.002	.490	.246	.886	.008	.980	.00001

[5]See Appendices O, P, and Q for additional statistical data.

Table 30. Reliability and sensitivity significance level of Educational Characteristics Criterion, (ECC) category scores of teachers and of administrators within an individual large school district and within two individual small school districts.[6]

Category Score and No.	Large District (No. 2)				Small District (No. 15)				Small District (No. 23)			
	Teachers		Administrators		Teachers		Administrators		Teachers		Administrators	
	r_{tt}	p	r_{tt}	p	r_{tt}	p	r_{tt}	p	t_{tt}	p	r_{tt}	p
I: Student's Level of Knowledge and Attitudes	.44	.27	.42	.28	.17	.36	.00	.00	.52[a]	.24	.00[a]	.00
II: Community Attitudes	.67	.14	.71	.12	.64	.16	.80	.06	.65	.16	.98	.00001
III: Curriculum	.52	.23	.39	.29	.66	.15	.75	.09	.59	.19	.77	.07
IV: Use of Facilities	(Single item--no test possible)											
V: Socio-cultural Composition of Community	.43[a]	.27	.45[a]	.27	.49[a]	.25	.00[a]	.00	.00[a]	.00	.00[a]	.00
VI: Administration and Supervision	.65	.16	.65	.16	.62	.18	.48[a]	.25	.55	.22	.94	.00009
VII: The Teacher and Teaching Methods	.79	.06	.67	.15	.74	.10	.28[a]	.33	.76	.08	.94	.0001

[a]Low category reliability also shown in Michigan study.

[6]See Appendices O, P, and Q for additional statistical data.

The results of the analysis of variance reliability tests described for category scores of teacher and administrator respondents within individual large and small school districts indicate considerable variability in the reliability and sensitivity level. An evaluation of the thirty-six possible category tests showed that according to respondent type, nine categories had high reliability (.71 or greater). Nine other category tests showed reliabilities closely approaching the lower limit of high reliability. These additional category tests indicate reliability in excess of .56 with sensitivity levels of .21 or less.

Statistical Tests and Treatments--Hypothesis V

The point biserial correlation method was used to obtain a coefficient of correlation to test the discrimination power and ability of individual educational characteristics. The point biserial coefficient of correlation, rpb is obtained by computing the product-moment coefficient of correlation as a measure of strength and direction of relationship between a continuous variable and a dichotomous variable.

An analysis of the distribution of the total scores of 2478 teachers and administrators indicated that the distribution of respondent scores was continuous and normal. A discrete or truly dichotomous variable was given for each educational characteristic according to the following assignment: High group of scores--score 3 and 4; low group score--1 and 2. The total score distribution was divided at the median (N = 1239). The product-moment coefficient of correlation between educational characteristic scores (dichotomized variable) and total scores (normally distributed variable) and between each educational characteristic and its respective category score was computed and the outcome subjected to tests of significance.

The significance of the point biserial correlation coefficient, rpb, as a deviation from zero was tested by using the "t" test in the following form:

$$t = \frac{r_{pb}\sqrt{N - 2}}{\sqrt{1 - r_{pb}^2}} \qquad D.\ F. = N - 2 \text{ or } 1239 - 2$$

Rejection of the null hypothesis for this statistical test, $H: r_{pb} = 0$ indicates that the relationship between the paired variables provides adequate positive discrimination ability and power. The two-tailed table was used to determine level of significance. The minimum coefficient of correlation for 1237 degrees of freedom to be significant at $p = .01$ was .076. The minimum level for significance at $p = .001$ was computed as .097.

Results and Evaluation of Statistical Treatment--Hypothesis V

An examination of the tests of significance resulting from the point biserial coefficients of correlation performed for the fifty-six educational characteristics with respect to total score showed that fifty-one of the educational characteristics have adequate positive discrimination ability and power. The point biserial coefficients of correlation are summarized in Table 31.

Based on the analysis in Table 31 we repeat the null hypothesis:

> H10: The correlation coefficient for the relation of individual educational characteristic score to total quality score does not differ significantly from zero.

for all educational characteristics except No. 55, Category II ("Parents condone or encourage early dating for their children"), No. 46, Category V ("This community is composed of people who are predominantly Protestant"), No. 47, Category V ("This community is composed

Table 31. Comparison of point biserial coefficients of (1) Correlation of ECC educational characteristic scores with respective category score and (2) correlation of ECC educational characteristic scores with total score between respondents in Michigan and United States samples.

No. (Revised ECC)	Item to Category		Item to Total	
	United States	Michigan	United States	Michigan
Category I: Student's Level of Knowledge and Attitudes				
8	.56	.57	.49	.55
9	.52	.57	.44	.53
16	.56	.50	.53	.50
51	.77	.66	.40	.41
52	.69	.60	.33	.30
54	.74	.68	.41	.48
Category II: Community Attitudes				
21	.67	.65	.59	.62
28	.69	.64	.63	.62
29	.54	.54	.45	.52
30	.59	.59	.52	.54
36	.59	.50	.49	.43
37	.67	.60	.57	.55
39	.69	.68	.61	.64
40	.65	.63	.62	.62
45	.27	.04[a]	.21	.05[a]
53	.59	.60	.50	.52
55	.12	.22	.07[a]	.15
Category III: Curriculum				
4	.71	.58	.51	.46
5	.72	.59	.50	.45
6	.76	.64	.55	.53
15	.63	.60	.53	.61
17	.37	.50	.39	.50
Category IV: Use of Facilities				
32	--	--	.46	.51

Continued

Table 31 - Continued

No. (Revised ECC)	Item to Category United States	Item to Category Michigan	Item to Total United States	Item to Total Michigan
Category V: Socio-cultural Composition of Community				
25	.39	.40	.48	.40
34	.53	.53	.53	.64
38	.50	.38	.39	.16
41	.46	.45	.28	.44
42	.31	.14	.27	.14
44	.54	.34	.35	.20
46	.07[a]	.10	.02[a]	.08
47	.15	.32	.02[a]	.20
48	.37	.30	.25	.20
49	.17	.40	.04[a]	.24
50	.47	.43	.22	.17
Category VI: Administration and Supervision				
10	.54	.60	.43	.54
22	.66	.64	.56	.57
23	.63	.49	.47	.37
26	.64	.62	.48	.52
27	.69	.66	.55	.60
35	.43	.43	.56	.48
56	1.00	.20	1.00	.21
Category VII: The Teacher and Teaching Methods				
1	.48	.37	.39	.30
2	.58	.50	.45	.40
3	.58	.44	.44	.38
7	.55	.58	.48	.54
11	.63	.57	.55	.54
12	.46	.32	.38	.13
13	.37	.05[a]	.25	.04[a]
14	.62	.50	.51	.45
18	.61	.60	.53	.55
19	.54	.42	.44	.34
20	.52	.53	.47	.47
24	.49	.48	.44	.47
31	.55	.40	.49	.34
33	.54	.58	.56	.60
43	.24	.55	.29	.31

[a]Correlations not significantly positive at $p < .01$

of people who are predominantly Catholic"), and No. 49, Category V ("The population of this community is equally divided between Protestants and Catholics") and accept the research hypothesis that the educational characteristics have significant positive discrimination power and ability with respect to total score. The null hypothesis is accepted for item No. 55, No. 46, No. 47 and No. 49. These characteristics do not have significant positive discrimination power and ability at $p < .01$.

Further analysis of the correlations in Table 31 indicated that fifty-five educational characteristics have adequate positive discrimination power and ability with respect to the related category quality score. Based on this analysis we reject the null hypothesis:

> H11: The correlation coefficient for the relation of each educational characteristic score to its respective category score does not differ significantly from zero.

for all educational characteristics except No. 46, category V ("This community is composed of people who are predominantly Protestant") and accept the operational or research hypothesis that that each educational characteristic has significant positive discrimination power and ability with respect to its related category quality score.

Analysis of the Relative Discrimination Power of the Categories of Scores

A median point biserial correlation coefficient was computed for each of the categories of educational characteristics based upon the array of correlation coefficients as determined from the relation of item scores and their related category scores. Table 32 summarizes the relationships of individual characteristics with approximate median correlation values. Category IV, use of facilities, had only one characteristic and therefore no correlation was appropriate. All six of the categories were found to have significant discrimination power

and ability. The low overall discrimination power of Category V ("Socio-cultural composition of community") is consistent with fact that the only individual characteristic not possessing significantly positive discrimination ability and power (Item No. 46) is an element of this category. The median correlation coefficient of .625 for the six category medians exceeds the .001 significance level for 1237 degrees of freedom and indicates an overall significantly positive relationship between each educational characteristic score to its respective category score.

A median point biserial correlation coefficient is also shown in Table 32 for each of the categories of educational characteristics based upon the distribution of correlation coefficients derived from the relations of item scores within each category to the total quality score. While all seven categories were found to have significant discrimination ability and power at the .01 level of significance, Category V again had the lowest overall discrimination power and ability. It has been previously shown that three of the individual characteristics related to category V did not possess significant positive discrimination power and ability.

Additional Analyses Concerning Relationships Among Total Quality Score and the Seven Related Category Scores

In order to investigate the relationships among the seven related category scores and the total quality score, product-moment correlation coefficients were computed for the various sources and dimensions in this study. First, the sixty-four intercorrelations among the category and total score were computed among the sets of means for teachers in the low financial support quartile. The minimum coefficient of correlation for N - 2 degrees of freedom at the .01 level of significance for teachers in quartile 1 (low) is .079; for teachers in quartile 4

Table 32. Relationships between Michigan and United States median correlation coefficients for educational characteristic to related category score and to total quality score.

Category	Median Score Item to Category		Median Score Item to Total	
	United States	Michigan	United States	Michigan
Category I: Student's Level and Attitudes	.625	.585	.425	.49
Category II: Community Attitudes	.620	.60	.550	.54
Category III: Curriculum	.610	.59	.510	.50
Category IV: Use of Facilities	--	--	.460	.51
Category V: Socio-cultural Composition of Community	.390	.38	.270	.20
Category VI: Administration and Supervision	.640	.62	.550	.52
Category VII: The Teacher and Teaching Methods	.540	.50	.450	.45
Total Score	.625	.59	.460	.50

All correlations are significantly positive at the $p < .01$ level of significance.

(high), .076. These intercorrelations are reported in Table 33. All of the comparable correlations are significant at the $p < .01$ level. It is seen that the most highly interrelated categories are: (1) Category II ("Community Attitudes") with Category V ("Socio-cultural Composition of the Community"), (2) Category II ("Community Attitudes") with Category VI ("Administration and Supervision"), Category III ("Curriculum") with Category VII ("The Teacher and Teaching Methods"), and Category VI ("Administration and Supervision") with Category VII ("The Teacher and Teaching Methods").

Table 34 presents the intercorrelations of the category mean score and total quality mean scores for administrators in the high financial support quartile and in the low financial support quartile. The minimum coefficient of correlation for N - 2 degrees of freedom at the .01 level of significance for administrators in the low financial quartile is .286 and .267 for administrators in the high financial quartile. An analysis of the comparable correlations indicated insignificant relationships exist between categories I-IV, IV-VI, and IV-VII according to mean scores of low financial quartile administrators and between categories I-VI, I-VII, III-IV, IV-V, IV-VI, and IV-VII for administrators in high financial support districts. The most highly inter-related categories are identical to those observed for teachers with the addition of a significantly high interrelationship indicated between category I ("Student's Level of Knowledge and Attitudes") and Category II ("Community Attitudes") for administrator mean scores in the low financial quartile.

The final investigation into the relationships among the category scores and total score was done using the mean scores resulting from the total sample of administrators and teachers representing high financial support quartile districts and low financial support quartile districts. The results of this computation of product-moment

Table 33. Intercorrelation coefficients[a] for total scores and related category scores according to teacher responses from high (top rows) and low (bottom rows) educational financial support quartiles.

	Category							Total Score
	I	II	III	IV	V	VI	VII	
Category I: Student's Level of Knowledge and Attitudes	1.00	.54	.32	.27	.45	.45	.40	.66
	1.00	.49	.39	.21	.36	.44	.48	.65
Category II: Community Attitudes		1.00	.45	.33	.61	.69	.58	.85
		1.00	.51	.35	.59	.64	.62	.86
Category III: Curriculum			1.00	.35	.31	.52	.69	.69
			1.00	.30	.29	.58	.74	.75
Category IV Use of Facilities				1.00	.26	.29	.34	.44
				1.00	.25	.23	.32	.41
Category V: Socio-cultural Composition of Community					1.00	.52	.45	.72
					1.00	.39	.40	.65
Category VI: Administration and Supervision						1.00	.64	.82
						1.00	.68	.80
Category VII: The Teacher and Teaching Methods							1.00	.84
							1.00	.88
Total Score								1.00
								1.00

[a]Product-moment correlation coefficients.

The level of significance for N-2 degrees of freedom at $p < .01$ is .079 for low quartile districts and .076 for districts in the high financial support quartile.

Table 34. Intercorrelation coefficients[a] for total scores and related category scores according to administrator responses from high (top rows) and low (bottom rows) educational financial support quartiles.

	Category							Total
	I	II	III	IV	V	VI	VII	
Category I: Student's Level of Knowledge and Attitudes	1.00	.42	.29	.33	.49	.21[b]	.24[b]	.56
	1.00	.64	.40	.21[b]	.44	.47	.44	.70
Category II Community Attitudes		1.00	.49	.38	.66	.56	.59	.86
		1.00	.55	.37	.63	.58	.66	.89
Category III: Curriculum			1.00	.24[b]	.28	.50	.73	.71
			1.00	.34	.51	.59	.69	.76
Category IV: Use of Facilities				1.00	.24[b]	.07[b]	.26[b]	.39
				1.00	.35	.28[b]	.28[b]	.43
Category V: Socio-cultural Composition of Community					1.00	.42	.38	.73
					1.00	.47	.52	.75
Category VI: Administration and Supervision						1.00	.59	.73
						1.00	.56	.76
Category VII: The Teacher and Teaching Methods							1.00	.83
							1.00	.84
Total Score								1.00
								1.00

[a]Product-moment correlation coefficient
[b]Coefficients of correlation not significantly positive at $p < .01$.

The level of significance for N-2 degrees of freedom at $p < .01$ is .286 for low quartile districts and .271 for high quartile districts.

Table 35. Intercorrelation coefficients[a] for the total score and seven category scores (N = 2478).

	Category							Total
	I	II	III	IV	V	VI	VII	
Category I: Student's Level of Knowledge and Attitudes	1.00	.53	.37	.27	.43	.45	.45	.66
Category II: Community Attitudes		1.00	.49	.37	.62	.67	.61	.86
Category III: Curriculum			1.00	.36	.33	.56	.72	.73
Category IV: Use of Facilities				1.00	.29	.29	.36	.46
Category V: Socio-cultural Composition of Community					1.00	.48	.44	.70
Category VI: Administration and Supervision						1.00	.66	.81
Category VII: The Teacher and Teaching Methods							1.00	.86
Total Score								1.00

[a]Product-moment correlation coefficients.

The level of significance for N-2 degrees of freedom at $p < .01$ is .058.

coefficients of correlation for N - 2 degrees of freedom at the .01 significance level is .058. All of the comparable correlations are significant at the accepted level. The most high interrelated category mean scores are : (1) Category II ("Community Attitudes") with Category V ("Socio-cultural Composition of Community"), Category II ("Community Attitudes") with Category VI ("Administration and Supervision"), Category II ("Community Attitudes") with Category VII ("The Teachers and Teaching Methods"), Category III ("Curriculum") with Category VII ("The Teacher and Teaching Methods"), and Category VI ("Administration and Supervision") with Category VII ("The Teacher and Teaching Methods").

CHAPTER VII

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This last chapter is reserved for a brief summary of the study's purpose, procedures, limitations, major findings and conclusions. Implications of the study and recommendations specifically associated with the data presented are also included.

Summary

Purposes and Major Hypotheses

This study is an attempt to formulate a quality-measurement process based on the perceptions held by those individuals, teachers and administrators, most closely associated with the formal educational process. This study is designed to analyze and compare the perceptions held by teachers and administrators relating to specific characteristics of educational programs as measured by the Educational Characteristics Criterion, (ECC). The purposes of this study also include the determination of relationships between teacher-administrator quality perceptions and certain selected educational cost factors. Fulfillment of the objectives of this study also requires specific comparisons of the results of this study with the findings in the 1962 Michigan study.

Five major hypotheses were formulated concerning the perceptions by teachers and administrators of the fifty-six educational characteristics comprising the Educational Characteristics Criterion, (ECC). The major hypotheses are:

1. The Educational Characteristics Criterion will show ability to discriminate between the first or low financial support quartile and fourth or high financial support quartile of United States public school districts (K-12) which are classified on the educational cost factors of size, effort, ability and expenditure.

2. The Educational Characteristics Criterion will show no ability to discriminate between the responses of teachers and administrators within the high financial support quartile, within the low financial support quartile, within the individual large school districts, and within individual small school districts.

3. The Educational Characteristics Criterion will show high reliability within the high financial support quartile and within the low financial support quartile.

4. The Educational Characteristics Criterion will show high reliability within individual large and small school districts.

5. The individual educational characteristics scores in the Educational Characteristics Criterion will have adequate positive discrimination power with respect to the total quality score and to their related category scores.

Sample and Design

A statistical analysis leading to the comparison of teacher and administrator perceptions of educational quality associated with variations in educational cost factors requires data from different systems within each quartile of financial support and from systems in different states. To be useful for such an analysis the sample in this study provided (1) an adequate and proportionate number of respondents, both teacher and administrator, in school districts within the first and fourth financial quartiles of the distribution of financial support factors of size, ability, effort and expenditure; and (2) several school districts

within each cost quartile representative of a sufficiently large number of states. Seven school districts in the fourth or high financial support quartile and eighteen districts in the first or low financial support quartile were selected randomly to represent the extremes in cost factors stratified on the basis of size, effort, ability and expenditure. Useable data were acquired from the completed instruments of 1223 teacher respondents and 92 administrator respondents from the seven school districts within the fourth or high financial quartile of districts and from 1081 teacher respondents and 82 administrator respondents representing the eighteen districts in the first or low financial quartile of districts.

Instrumentation and Data Collection

Data for the variables used in this study came primarily from three sources. First, data on the cost factors of size, effort, ability and expenditure and information concerning the number of teachers and administrators were provided by a Preliminary Data Sheet returned by one hundred thirty superintendents of schools, representing school districts in forty-four states. This data was received in response to a letter of invitation sent in August, 1963 to the superintendents of the two-hundred and fifty public school systems participating in the 1964 Stanford Achievement Test standardization program.

The second source of data was the Supplemental Information Form sent to school superintendents. This included information about the geographical location of the school system, type of organizational pattern followed in the school district, the type of population center and population residing within its boundaries, and the approximate average pupil-teacher ratio for elementary and secondary levels.

Finally, the measurement of teacher and administrator perceptions of educational quality utilized in this study was secured by

means of the Educational Characteristics Criterion, (ECC). This instrument is based on the assumption that quality of an educational program resides more in the perceptions of the observer than in the inherent structure of the educational program itself. The use of this instrument is further predicated on the assumption that educational quality is determined by a judgment about certain educational characteristics of a school district, both school and community, which are perceived as effective in accomplishing the purposes of American Public school education. Data for the comparison of teacher and administrator educational quality perceptions came from fifty-six scored educational characteristics. Responses are made by marking an "x" over the number which represents the degree to which each educational characteristic is perceived to be present in a given situation, e.g., "Most Characteristic" - 4; "Somewhat Characteristic" - 3; "Slightly Characteristic" - 3; and "Least Characteristic" - 1. Teachers and building principals are directed to relate their perceptions to their building experience. Central administrators and supervisors are directed to relate their perceptions of educational characteristic statements to the school system in total. The educational characteristic scores are obtained by the sum of the weighted responses to each characteristic. Each of the fifty-six scored educational characteristics is assigned to one of seven categories in order to provide a means of understanding the effects of the inter-relationships between the various school and community factors associated with educational quality. The seven categories are (1) Student's Level of Knowledge and Attitudes; (2) Community Attitudes; (3) Curriculum; (4) Use of Facilities; (5) Socio-cultural Composition of Community; (6) Administration and Supervision; and (7) The Teacher and Teaching Methods. The score for each category is obtained by the sum of the individual educational characteristic scores included in each respective category. The total

educational quality score is derived from the sum of the fifty-six scored educational characteristics.

In October, 1963 the Educational Characteristics Criterion, (ECC), was mailed to the superintendents of the seven districts in the high financial quartile and of the eighteen districts in the low financial quartile. General and specific instructions for administration were furnished each superintendent and individual instruction sheets were enclosed with each respondent's instrument and envelope. The instructions specified the necessity for securing individual rather than group perceptions of the individual educational quality characteristics. To guarantee uninhibited responses the teachers and administrators were assured that all information would be treated confidentially and anonymously. Completed responses were received from all the twenty-five participating districts within a month.

Method of Treatment and Analysis

Fulfilling the objectives of this study required the determination of the significance of the difference between the mean scores of the respondent types within quartiles and within individual large and small school districts and the effect of high and low financial support on the perceptions of educational quality according to respondent type. The "t" test was used to determine the discrimination power and ability of the instrument with regard to the first two hypotheses.

The Hoyt analysis of variance technique was used to estimate the reliability of the instrument. The level of reliability was computed from the consistency of individual performances upon test items for use in testing the third and fourth sets of hypotheses.

The third statistical step involved the use of the point biserial correlation coefficient to determine the positive discrimination power of the individual educational characteristic scores with respect to total

quality score and their related category scores. In addition to this test of the fifth hypothesis, product-moment coefficients of correlation were computed to provide exploratory data involving the relationships between category variables.

Statistical treatments of the data were conducted through the use of the facilities of the Computer Laboratory, Michigan State University. The data were scored and coded for IBM tabulation. Statistical tests of reliability and the item analyses were programmed for processing on the CDC 3600 high-speed computer.

Scope and Delimitations of the Study

1. The study is delimited to individual perceptions of educational quality factors by teacher and administrator respondents and selected educational financial factors from the high and low financial support quartiles of the national sample of public school districts.

2. The study treats selected educational cost factors of size, effort, ability, and expenditure per pupil as a single composite financial factor and the selected educational quality factors as contained in the Educational Characteristic Criterion, (ECC). The cost and quality factors are not intended to be inclusive.

3. The conclusions and implications of this study regarding the relationships between the cost-quality veriables are not interpreted to indicate a causal relationship, but merely to indicate a direct association.

Major Findings

1. Educational Characteristics Criterion, (ECC), discrimination findings indicate that according to the total educational quality scores, all seven category scores, and forty-one individual educational

characteristic scores of teachers respondents (see Tables 6 and 15), educational quality is present in significantly greater degree in United States school districts having high financial support than in United States school districts with low financial support.

2. Educational Characteristics Criterion, (ECC), discrimination indicates that according to total educational quality scores, three category scores (IV: "Use of Facilities," V: "Socio-cultural Composition of Community," and VI: "Administration and Supervision"), and eighteen individual educational characteristic scores of administrator respondents (see Tables 6 and 15), educational quality is present in a significantly higher degree in United States school districts having high financial support than in United States school districts with low financial support.

3. Educational Characteristics Criterion, (ECC), discrimination results indicate a significant negative relationship concerning educational quality and educational financial support according to teacher and administrator responses to three individual educational characteristics (Item No. 45: "The parents of this community expect children to perform their share of family chores," No. 46: "This community is composed of people who are predominantly Protestant," and No. 24: "High degree of teacher participation in social and political activities of the community."

4. Educational Characteristics Criterion, (ECC), non-discrimination is present in nine individual educational characteristics according to scores of either teachers or administrators (see Table 14). These scores indicate no significant difference exists in educational quality between high and low financial support districts.

5. Educational Characteristics Criterion, (ECC), discrimination between total quality mean scores and between six of the seven category mean scores of teachers and administrators within high

financial support districts and within low financial support districts (see Tables 16 and 17) indicates that significant differences exist between teacher and administrator perceptions of total educational quality and educational quality in all categories except category V: ("Socio-cultural Composition of Community").

6. Educational Characteristics Criterion, (ECC), discrimination between total quality mean scores (Table 19), all seven category mean scores (Table 20), and thirteen individual educational characteristic mean scores (Table 24) of teachers and administrators within high financial support districts and within low financial support districts indicates that administrators are overvaluing educational quality. Discrimination findings also indicate that administrators in high financial support districts overvalue four additional individual educational characteristics (Table 22) while administrators in low financial support districts overvalue nine additional individual educational characteristics and undervalue a single individual educational characteristic (Table 23).

7. Educational Characteristics Criterion, (ECC) non-discrimination findings indicate that according to the individual educational characteristic mean scores of teachers and administrators within each district type there is agreement in regard to educational quality represented in each of twenty-eight individual characteristics (see Table 21).

8. Educational Characteristics Criterion, (ECC), discrimination and non-discrimination findings indicate that according to total quality scores and the seven category scores of teachers and administrators within an individual large school district and within two small school districts there is no systematic agreement between teacher perceptions and administrator perceptions concerning quality of educational programs. The results of tests within individual large and small school

districts and the findings for the respective high and low financial support quartiles are not in general accord (see Tables 25 and 26).

9. The reliability of Educational Characteristics Criterion, (ECC), total scores based on consistency and sensitivity of individual performance on test items ranges from .89 to .91 according to teacher and administrator respondents within high and low financial support quartiles. The reliability of related category scores exceeds .56, categories I and V excepted, according to teachers and administrators within high and low financial support quartiles (Tables 27 and 28).

10. The reliability tests of Educational Characteristics Criterion, (ECC), total score of teachers and of administrators within one individual large school district and within two individual small school districts indicate that high reliabilities may be obtained by this measurement technique for all respondent types except administrators in one of the two small districts (r_{tt} = .49). The reliability range of the other total scores is from .86 to .98 with sensitivity significance levels from .00001 to .017. The separate category score reliability level within large and small districts indicates great variations according to district and respondent type. Relatively high reliabilities are found in categories II ("Community Attitudes"); VI (Administration and Supervision); and VII ("The Teacher and Teaching Methods"). The least reliable categories are I: ("Student's Level of Knowledge and Attitudes") and V: ("Socio-cultural Composition of Community"). These findings are illustrated in Tables 29 and 30.

11. The item analyses tests indicate that all but four of the individual educational characteristic scores (Items No. 55: "Parents condone or encourage early dating for their children," No. 46: "This community is composed of people who are predominantly Protestant," No. 47: "This community is composed of people who are predominantly

Catholic," and No. 49: "The population of this community is equally divided between Protestant and Catholic"), correlated positively with total quality scores and have adequate positive discrimination power and ability in excess of the minimum coefficient of .097 required at the .001 significance level for 1237 degrees of freedom. Only one item (No. 46: "This community is composed of people who are predominantly Protestant") was found to be lacking adequate discrimination power with respect to the related category score (see Table 31).

12. The lowest overall discrimination level was found in the educational characteristics comprising category V: ("Socio-cultural Composition of Community") for relationships between individual item score and category score as well as item score to total quality score correlation (Table 32).

13. Product-moment coefficients of correlation indicate significant positive inter-relationships between the seven categories of the Educational Characteristics Criterion, (ECC). The most significantly interrelated category mean scores are: (1) "Community Attitudes" with "Socio-cultural Composition of Community," (2) "Community Attitudes" with "Administration and Supervision," (3) "Community Attitudes" with "The Teacher and Teaching Methods," (4) "Curriculum with "The Teacher and Teaching Methods," and (5) "Administration and Supervision" with "The Teacher and Teaching Methods." These relationships are presented in Tables 33, 34, and 35.

Conclusions

The findings of the empirical study of relationships between teacher-administrator perceptions of educational quality as measured by the Educational Characteristics Criterion, (ECC), and selected cost factors can be evaluated from several viewpoints. A major concern of

the analysis was to test a quality-measurement process which assumed that the perceptions of teachers and administrators were based on a pattern of similar values, expectations and standards. A second concern of this study was the investigation of the relationships between teacher-administrator perceptions of educational quality and certain selected educational cost factors. A third aspect of the study distinguished the level of reliability and consistency of responses within the high and low financial quartile districts and within individual large and small school districts. A final element involved the use of an item analysis to determine the adequacy of the discrimination power and ability of individual educational characteristics scores with respect to related category score and total score. These four aspects of the empirical study are, of course, interrelated. Each aspect will be evaluated in terms of significant interrelationships and in terms of previous research with the same instrumentation.

Relationships Between Teacher and Administrator Perceptions of Educational Quality

1. The dominant theme of the results is the disagreement between responses of teachers and administrators within the high financial support quartile and within the low financial support quartile as portrayed by the total quality scores, six of the seven category scores, and fourteen individual educational characteristic scores. These differences between administrator and teacher perceptions of educational quality show that among both high and low financial quartile districts, administrators overvalue all seven categories of educational characteristics in relation to teachers' valuing of these same categories.

2. There is agreement between teacher and administrator perceptions of quality within the high financial support quartile and within the low financial support quartile for Category V: ("Socio-cultural Composition of Community") and in regard to educational

quality represented by twenty-eight individual educational characteristics.

3. Although the hypotheses that underlie the overall model of teacher-administrator quality perception relationships are supported by the statistical analysis of a majority of individual educational characteristics, the overall analysis does not support the thesis that certificated public school personnel having a similar professional frame of reference in terms of education and training hold similar values and expectations regarding perceptions of educational quality. This conclusion is contrary to previous conclusions based on a study of Michigan school districts.

Relationships Between Teacher-Administrator Perceptions of Educational Quality and Certain Selected Educational Cost Factors

4. The results of the analysis provides confirmation of the expected positive relationship between educational quality and financial support for education. Total quality scores of both teachers and administrators confirm the cost-quality relationship established in previous research.

5. The results indicate that according to scores of each of the seven categories and 41 individual educational characteristics, teachers perceive educational quality to be present to a significantly higher degree in high financial support districts than in districts having low financial support. Administrator perceptions of educational quality as measured by the seven categories, provide only partial confirmation of the expected cost-quality relationship. The perceptions of administrators indicate a significant discrimination between cost quality for only three categories and eighteen individual educational characteristics.

6. The individual educational characteristics in Category II: ("Community Attitudes") and Category V: ("Socio-cultural Composition of Community") as a whole do not have great discrimination power. The comparison between teacher-administrator quality perceptions in high and low financial support districts reveals similarities in the quality scores of these two sets of educational quality variables.

Reliability of Teacher-Administrator Responses Within High and Low Financial Quartile Districts and Within Individual Large and Small Districts

7. On the basis of reliability test findings, it appears that relatively high reliabilities may be obtained from Educational Characteristics Criterion, (ECC), total quality scores based on consistency of individual teacher-administrator performance on test items. Reliability coefficients range from .89 to .91 according to responses by teachers or administrators within high or low support quartiles exceeds .56 except for Categories I: ("Student's Level of Knowledge and Attitudes") and V: ("Socio-cultural Composition of Community"). It is possible that the measurement scheme for these two categories involve considerably more subjective judgment than is required for the other categories. Reliability tests within individual large and small school districts tend to indicate considerable variation by respondent and district type. These tests findings tend to confirm the particular unreliability of categories I and V and further support the total score reliability findings of within quartile tests. The reliabilities tend to be affected by small sample size in individual low quartile districts and the relatively short number of items in several categories. The total quality score reliability and sensitivity tests based on 56 items appears to be encouragingly homogeneous according to each respondent and district type.

Adequacy of Discrimination Power of Individual Educational Characteristics

8. Fifty-two of the fifty-six individual educational characteristics support the hypothesis of adequate positive discrimination power ($P < .01$) with respect to total score and related category score. However, low overall discrimination level in Category V ("Socio-cultural Composition of Community") casts doubt on the effectiveness of the discrimination power and ability of this category of educational quality variables.

Implications

The findings indicate significant differences between teacher and administrator perceptions concerning what constitutes a quality educational program. Three of the explanations for this finding are given in the three initial implications which follow.

1. It might be assumed that the differences between the social and institutional roles of teachers and administrators promote conflict between their professional purposes, values and expectations and the purposes, values and expectations which society and the institution places on the respective positions. In a perfect state of affairs one could expect congruence between professional and institutional expectations and values. The heterogeneity implied by the results of this study is present even though evidence exists concerning the supposedly homogenized character of teachers and administrators--their common origins, their uniform belief system and their loyalty to professional goals. It would seem that the principal instruments in the homogenizing process, the teachers colleges, university departments of education, and professional associations, are ineffective in overcoming the divergence of perceptions of teachers and administrators concerning educational quality. An alternate explanation for this phenomena is presented in the implications which follow.

2. The findings of this study disclose particularly significant differences in the way teachers and administrators perceive educational quality factors regarding those characteristics closely associated with teacher-pupil relationships and the classroom learning situation. It appears that the level on which teachers and administrators communicate and receive communications is inadequate to provide accurate and sufficient information on which to base perceptions. It would also seem that two-way communication channels are often not operative and many schools in both high and low financial quartiles have perfected only the downward movement of information. Since administrators in either high or low quality school districts overvalue of desirable educational outcomes in student attitudes, adequacy of classroom materials and procedures, and other classroom based activities, it would appear that administrators may not receive adequate information through existing communications channels to develop consensus with teachers' perceptions of these outcomes. From the data available it could be assumed that administrators in either high or low quality school districts are not significantly enough concerned with instructional and curricular processes to develop means of adequate personal contact with students and teachers.

3. One could also assume that the tendency for administrators in both high and low financial support districts to overvalue educational quality in relation to teacher perception is the result of a high degree of personal identification by administrators with their school districts. The extent of projection of "self" into the rating of school district quality could affect the objectivity of the perceptions. It appears that ability of the teacher to closely identify with the learner and with the classroom situation causes a generally lower perception of educational quality. It is implied that the degree of personal identification which the school district as an institution is a significant factor in shaping perceptions of educational excellence.

4. The great diversity in population in the United States results in disparities in both scope and quality of education. It appears that the modification of attitudes toward schools should be emphasized as a major component in strategies for increasing educational quality. Since the findings indicate that a highly favorable community attitude toward education is found in conjunction with educational quality in high financial support school districts it seems reasonable to assume that increased effort toward a broadened base of understanding and the resultant change of value patterns in low quality school districts will further increase the excellence of education through improved fiscal responsibility and more objective and systematic goals and aims for curricular improvement to meet local and national needs. In terms of improved support for education even partial improvements in public attitudes is needed in addition to foreseeable changes in the sphere of power relationships and political arrangements.

5. Since the findings indicate that high educational quality is present in a significantly higher degree in United States school districts having high financial support, one could assume that action should be taken in school districts having low quality and low financial support to improve the financial support cost factors of wealth, effort, size, and expenditure per pupil for operation. Reform is necessary in the area of school district reorganization to assist school districts in overcoming some of the problems of equitable property tax administration, inetuities in local ability and effort to support quality educational programs, and problems of inefficiency due to inadequate student population. School district reorganization can minimize the number of school systems without suitable tax and pupil base and maximize the number of administrative units which are physically capable of operating quality school programs.

6. It is implied that the presence of relatively high reliability of the Educational Characteristics Criterion, (ECC), total scores indicates a significant level of total score homogeniety for individual teacher-administrator perceptions according to respondent type and district type. It is further implied that category scores I: ("Student's Level of Knowledge and Attitudes") and V: ("Socio-cultural Composition of Community") are not sufficiently homogeneous for interpretation concerning teacher-administrator quality perception relationships and for other interpretations concerning cost-quality relationships. There appears to be relatively high correlation of individual educational characteristics to total quality score and their respective category scores within individual districts particularly where the number of respondents is large. Item-test and item-category reliabilities imply a general agreement as to what constitutes educational quality in public school districts.

Recommendations

Educational Quality and School District Organizational Patterns

1. It is recommended that school district reorganization in the United States be implemented to provide for school districts of adequate wealth and population. Every school district in the United States ought to be large enough to provide quality basic educational opportunity at reasonable cost. The ultimate test of every school district's adequacy should lie in its ability to maintain a program sufficient in scope and quality to meet the educational needs of its clientele. A school district able to attract and retain competent teachers, employ capable administrators and supervisory personnel in sufficient number, offer an educational program that enables students to become worthy

members of society, satisfy the wide variety of student interests and abilities, provide adequate buildings and instructional materials, and maintain effective relations with the community is a quality school district and should be the goal of every board of education in the United States.

2. The interdependence of the various sections of the United States requires certain general standards of quality and accomplishment in all educational programs. It is recommended that the United States Office of Education continue to exercise a positive leadership role in improving the quality of American education. This national interest can be successful in strengthening state and local educational institutions: (1) by sharing technical knowledge, (2) by discussing values which should be the goals of all school systems, and (3) by bringing to the knowledge of all, the interrelations of communities which for better or worse are mutually dependent on each other.

The Communications Process and Development of Favorable Community Attitudes

3. Reorganized districts invariably emerge larger both in area and in population. The individual citizen's opportunity to influence educational policy and program is reduced, and the board of education's capacity to interpret the educational program to the community and to energize public support is often handicapped. If communities are disparate with respect to their expectations of schools, their ability to support them, and their social values and mores, cleavages and power struggles often result. Therefore, it is recommended that boards of education and all educators recognize the challenge which exists and utilize their ingenuity for devising new approaches to communicating with the public.

4. It is recommended that teachers, administrators and boards of education re-examine some of the traditional assumptions about community support and participation in educational affairs. New lines of communication are needed to cause fundamental change in attitudes, values, and perspectives of a large segment of the population which has little awareness of, or concern for, the significance or the potentialities of the educational system, either for society as a whole or for their own children. It is further recommended that such new and additional efforts be directed less to the short-range problems of the moment, and more toward the cultivation of appreciative attitudes among all population segments of the crucial role of education in our society.

Relationship Between Teacher and Administrator Perceptions of Educational Quality

5. It is recommended that two-way communication between teachers and administrators in both high and low quality districts be stimulated through development of new techniques and increased interest and understanding of the needs. Customary forms of communication have failed to produce results since there is a significant lack of congruence in teacher-administrator perceptions of many educational quality characteristics. It is recommended that administration and supervision be viewed as supportive, stimulating, and suggestive rather than commanding, coercive, and controlling. An enlightened and realistic point of view with respect to character and intensity of administrative control and supervision should encourage teacher participation in communication to administrators concerning the quality of the instructional program. This communication can lead to administrator enlightenment and understanding, which in turn, can result in positive evaluations of and support for a better quality educational program.

The development of a consensus between teachers and administrators as a result of frequent and accurate communication would tend to result in the development of similar educational expectations, goals and perceptions irrespective of the difference in their professional roles.

The Organization and Dissemination of the Results of Cost-Quality Research

6. A significant problem in research on educational finance and quality is that of the dissemination of the results. Much of what is known in public school finance is unused in making decisions concerning support and scope of educational programs. It is recommended that a means be found of systematizing and organizing the vast numbers of studies that have been completed. It is suggested that the American Educational Research Association or some other suitable organization act as a clearing house for current and past research. The possibility exists of developing a coordinate indexing library retrieval system for school cost-quality data.

Improving the Adequacy of Educational Finance Data

7. It is recommended that all educational data, and particularly financial information be uniformly defined and collected. Increased attention should be given to comparability of educational terms and definitions. Automatic data processing systems enable educational finance and related information to be stored in "data banks," retrieved and analyzed at high speeds. Educational finance data should meet the criteria of accuracy, timeliness, comparability, and comprehensiveness.

Training Programs for Teachers and Administrators

8. It is recommended that institutions and professional organizations concerned with the preparation and training of teachers and administrators initiate efforts to study and research the individual, professional, social, and institutional roles of teachers and administrators. Adequate knowledge of the effect of the teacher or administrators role on values, expectations and goals is needed. Consensus of the perceptions of teachers and administrators concerning educational quality might lead to improved functional staff relations and more important, to significant improvements in educational programs.

Revision, Continued Development and Use of the Educational Characteristics Criterion, (ECC)

9. It is recommended that a revision of items having a relatively low correlation with total scores and/or category scores be made. The individual educational characteristics within Category V: ("Socio-cultural Composition of Community") should be revised or replaced with data factually verifiable by means of census records or other written records.

10. It is recommended that those individual educational characteristics and categories showing a significant difference between teacher and administrator perceptions of quality should be studied further to identify the bases for the lack of agreement.

11. It is recommended that the Educational Characteristics Criterion, (ECC) be tested with members of boards of education, parents and patrons, identifiable community decision-makers or molders of opinion, and with students, in order to determine their perceptions of educational quality and to compare their responses with the responses of the teachers and administrators in the school district.

12. It is recommended that the Educational Characteristics Criterion, (ECC) be tested with teacher and administrator respondents from each of the four quartiles of Michigan public school districts based on the relationship of the specific items of educational expenditure to specific measures of educational need.

13. It is recommended that the Educational Characteristics Criterion, (ECC) be tested with teacher and administrator respondents from the second and third financial support quartiles of United States public school districts determined on the basis of educational cost factors of wealth, membership size, effort, and expenditure per pupil.

14. It is recommended that further study of the Educational Characteristics Criterion, (ECC), should include an investigation of the stability of the measures derived from the instrument to determine the extent of periodic fluctuations in administrator or teacher perceptions of the practices which characterize their school district.

15. It is recommended that the relationships between Educational Characteristics Criterion, (ECC) scores and achievement test scores or product-type measurements be studied. The individual educational characteristics and related categories which are related to a measurable end-product, scholastic achievement, should be identified. The use of various homogeneous groupings by subclassifying students may help to clarify the effects of subtle variables of a socio-economic and cultural nature.

16. It is recommended that a follow-up check be made on the proportion of individual educational characteristics which have been identified as non-cost related and which affect the excellence of education. Further study of the ability of these items to discriminate between school districts that are characterized as high and low on cost bases would provide the low financial support district as well as the

high financial support district an opportunity to bring increases in quality educational output. These increases in effective patterns of organization, attitudes, values, and procedures (basically non-cost items) could effectively supplement improvements in financial support and provide alternative means to improve educational quality in school districts where improved financial cost bases are not available.

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APPENDICES

APPENDIX A

LETTER OF INVITATION SENT TO SUPERINTENDENTS

MICHIGAN STATE UNIVERSITY EAST LANSING

COLLEGE OF EDUCATION

August 28, 1963

Dear Superintendent:

The College of Education, Michigan State University is conducting several national studies concerned with the identification and measurement of quality in an educational program.

Several studies concerned with the measurement of quality have already been completed, one of which included every school district in the State of Michigan. Preliminary tests of the reliability, validity, and discriminative powers of the measuring instrument have been completed.

The problem to be investigated in this study is a two-fold one: (1) to test a preliminary national form of an instrument which we hope can measure the quality of educational programs as related by perceptions of teachers and administrators; and (2) to compare the perceptions of these individuals with certain selected cost factors; i.e. total school membership (size), state equalised assessed valuation per pupil (ability), operation millage (effort), and expenditure per pupil.

A selected sample of school districts, drawn from all 50 states, has been chosen to participate in the initial phase of this study. After the financial data from all school districts in the sample has been ordered and the number of districts in each cost quartile is determined a second sample will be drawn. The administrative and teaching staffs of these districts will be invited to participate in the study by responding to the instrument under investigation. Previous use of the questionnaire has shown that it can be completed in approximately thirty minutes.

I hope, sincerely, that you will contribute to this study. Please complete the enclosed fact sheet to indicate your willingness to participate in this attempt to meet the need for a comprehensive but practical device to appraise the quality of an educational program in any given school district in the United States.

In order to begin this study promptly we would like to have your response and data sheet by September 7, 1963. The questionnaire for administrative and teaching staff participants for the second phase of the study will be

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mailed to selected districts in early October in order to avoid conflict with the beginning of the school year.

It is not the intent of our study to compare individual districts by name. All information furnished by you will be held in confidence and utilized only as a part of a group analysis and ordering of districts.

Your willingness to help us in this study will be sincerely appreciated. Should you have any questions concerning our research please do not hesitate to write us.

Cordially yours,

Herbert C. Rudman
Professor of Education

HCR:kk

Eng: Data Sheet
Return Envelope

APPENDIX B

PRELIMINARY DATA SHEET

PRELIMINARY DATA SHEET

MICHIGAN STATE UNIVERSITY

NAME OF SCHOOL DISTRICT _____

ADDRESS (TOWN, STATE) _____

1963-64

Number of Teachers _____

Number of Administrators
(Superintendents, Principals, and Supervisors) _____

COST DATA (1962-63 School Year):

1. Size: Average Daily Membership, ADM, Grades K-12, or 1-12 _____

2. Ability: State Equalized Assessed Property Valuation Per Pupil (Final Appraisal Of All Property Divided by ADM) _____

3. Effort: Tax Rate in Mills for Current Operation of School District _____

4. Current Operating Expenditure Per Pupil (Total Expenditures Excluding Capital Outlay And Debt Service Divided by ADM) _____

PLEASE RETURN TO: Dr. Herbert C. Rudman
Michigan State University
East Lansing, Michigan

APPENDIX C

EDUCATIONAL CHARACTERISTICS CRITERION, (ECC)

EDUCATIONAL CHARACTERISTICS CRITERION

Herbert C. Rudman
Michigan State University

	Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
1.	Teachers have intimate knowledge of children.	4	3	2	1
2.	Teaching practices reflect concern for individual differences.	4	3	2	1
3.	Teaching practices reflect a knowledge of individual differences	4	3	2	1
4.	Teachers perceive a coherent and coordinated structure to the educational program.	4	3	2	1
5.	Concensus exists among the staff concerning the goals of the educational program.	4	3	2	1
6.	A structure has been developed that permits continual curriculum improvement.	4	3	2	1
7.	Evidence exists of instructional and/or curricular experimentation.	4	3	2	1
8.	Students show a positive attitude toward scholastic work.	4	3	2	1
9.	Students evidence accurate knowledge of self.	4	3	2	1
10.	Professional staff of the school system are involved in in-service education.	4	3	2	1
11.	Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions.	4	3	2	1
12.	All teachers are certified to teach at the grade level or subject they are now teaching.	4	3	2	1
13.	Teachers have complete freedom to teach what they consider to be important.	4	3	2	1
14.	A great variety of instructional techniques are presently used in the classrooms.	4	3	2	1
15.	A great variety of instructional materials are presently used in the classrooms.	4	3	2	1

	Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
16.	Students are knowledgeable about the educational and social opportunities available to them.	4	3	2	1
17.	A complete comprehensive testing program including intelligence and achievement testing is available in the schools.	4	3	2	1
18.	Teachers often avail themselves of professional help.	4	3	2	1
19.	Complete freedom is granted to students to investigate any local, state, national or international issue.	4	3	2	1
20.	Availability to students of materials that reflect all shades of political and sociological points of view.	4	3	2	1
21.	Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education.	4	3	2	1
22.	Lay members of the community are highly involved in the planning of educational goals with the school staff.	4	3	2	1
23.	Regulations governing student conduct are highly explicit and detailed.	4	3	2	1
24.	High degree of teacher participation in social and political activities of the community.	4	3	2	1
25.	The social status of teachers is very high in this community.	4	3	2	1
26.	Regulations governing personnel policies are highly explicit and detailed.	4	3	2	1
27.	Citizens are highly organized to discuss school problems.	4	3	2	1
28.	The perceptions of parents and patrons concerning the purposes of education are consistent and clear.	4	3	2	1
29.	The local newspaper has shown a high interest in local school affairs.	4	3	2	1
30.	There is no lag between the values taught in the school and what is practiced in the community.	4	3	2	1
31.	There exists a high level of cooperation among the teachers of the staff.	4	3	2	1

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
32. The physical facilities of the school system (buildings and equipment) are completely adequate.	4	3	2	1
33. The community and its residents are used for instructional purposes.	4	3	2	1
34. Cultural experiences are readily available in the community.	4	3	2	1
35. Teachers' judgments are almost always used in the determination of educational policies.	4	3	2	1
36. A high percentage of the electorate in the community vote in school elections.	4	3	2	1
37. There are outstanding community leaders in this community who exhibit great interest in school affairs.	4	3	2	1
38. This is a highly stable community which does not have too many people leaving.	4	3	2	1
39. The community exhibits a great concern for the development of aesthetic and artistic interests.	4	3	2	1
40. A two-way communication channel readily exists between the home and the school.	4	3	2	1
41. A high percentage of high school students own personal cars.	4	3	2	1
42. A high percentage of homes own television sets.	4	3	2	1
43. A great deal of homework is assigned to students.	4	3	2	1
44. A high degree of ethnic, racial and religious homogeneity exists among the local population.	4	3	2	1
45. The parents in this community expect their children to perform their share of family chores..	4	3	2	1
46. This community is composed of people who are predominantly Protestant.	4	3	2	1
47. This community is composed of people who are predominantly Catholic.	4	3	2	1
48. This community is composed of people who are predominantly Jewish.	4	3	2	1

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
49. The population of this community is equally divided between Protestants and Catholics.	4	3	2	1
50. One or two ethnic groups comprise the largest number of residents in the community.	4	3	2	1
51. Pupils consider an academic grade of at least "B" to be the norm for academic achievement.	4	3	2	1
52. The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement.	4	3	2	1
53. A high value is placed on education by the parents and patrons (those residents of a school district without school-age children) of the community.	4	3	2	1
54. Parents and patrons in the community consider an academic grade of at least "B" to be the norm for academic achievement.	4	3	2	1
55. Parents condone or encourage early dating for their children.	4	3	2	1

APPENDIX D

INSTRUCTIONS FOR RESPONDING TO THE EDUCATIONAL CHARACTERISTICS CRITERION, (ECC)

INSTRUCTIONS FOR RESPONDING TO THE EDUCATIONAL CHARACTERISTICS CRITERION

1. Your participation as a respondent to the Educational Characteristics Criterion (ECC) within the national sample of cooperating school districts is greatly appreciated. This is a phase of a comprehensive research project which is being conducted by the College of Education, Michigan State University.

2. It is important that your responses to the ECC represent your own individual perceptions, therefore it is recommended that you complete the ECC without prior discussion with other faculty members, preferably in private and quiet surroundings. All information will be treated confidentially and anonymously. Approximate respondent time is thirty minutes, however there is no time limit.

3. Use pencil and mark with firm pressure ON the number representing the characteristic that you perceive. Relate the statements to your experience as follows:

   (a) Teachers and Building Principals: Relate the statements to your building experience.

   (b) Central Administrators and Supervisors: Relate the statements to your school system.

4. Example of marking one item:

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
1. Teachers have intimate knowledge of children.	4	3	X	1

(Note: The "X" ON the "2" will indicate that your perception of the statement is that it is "slightly characteristic" of your building situation (if you are a teacher or building principal); or that it is "slightly characteristic" of your school system (if you are a central administrator or supervisor).

5. Upon completion of your responses to all ECC items, place the ECC in the envelope and SEAL the envelope flap. Do not put your name or other markings on the ECC envelope.

6. Return the envelope with enclosed ECC to your building principal or to the collection point prescribed by the principal or the superintendent. It is highly desired that you complete the ECC at your very earliest opportunity and return it within 24 hours, and if delayed, within 48 hours.

APPENDIX E

SUPERINTENDENTS' SUPPLEMENTAL INFORMATION FORM

(To be completed by the Superintendent)

SUPPLEMENTARY INFORMATION FORM

EDUCATIONAL CHARACTERISTICS CRITERION

Herbert C. Rudman
Michigan State University

1. School District_____ 2. State_____

3. Type of Organization Pattern Followed in School District (Please check the most appropriate organizational pattern).

   a. 6 - 3 - 3 _____ c. 6 - 6 _____ e. 6 - 2 - 4 _____

   b. 8 - 4 _____ d. 5 - 3 - 4 _____ f. Other _____

4. Approximate average pupil-teacher ratio ... ELEMENTARY (Please check appropriate response).

   a. 50-1 _____ d. 35-1 _____ g. 20-1 _____

   b. 45-1 _____ e. 30-1 _____ h. Less than 20-1 _____

   c. 40-1 _____ f. 25-1 _____

5. Approximate average pupil-teacher ratio ... SECONDARY (Please check appropriate response).

   a. 50-1 _____ d. 35-1 _____ g. 20-1 _____

   b. 45-1 _____ e. 30-1 _____ h. Less than 20-1 _____

   c. 40-1 _____ f. 25-1 _____

6. Type of Population Center

   a. Rural _____

   b. City _____

      1. less than 2500 _____

      2. 2500 - 4999 _____

      3. 5000 - 9999 _____

      4. 10,000 - 24,999 _____

      5. 25,000 - 999,999 _____

      6. 100,000 and over _____

7. Is your school program accredited by the state and/or regional accrediting agencies?

   Yes_____ No_____

APPENDIX F

GENERAL INSTRUCTIONS FOR ADMINISTRATION AND MAILING OF THE EDUCATIONAL CHARACTERISTICS CRITERION, (ECC)

TO: Superintendents of Cooperating School Districts in the Quality Research Project.

FROM: Dr. Herbert C. Rudman, Project Director, College of Education, Michigan State University.

SUBJECT: General Instructions for Administration and Mailing of the Educational Characteristics Criterion (ECC).

I. CONTENTS OF THE PACKAGE OF MATERIALS

A. _____ envolopes, each containing one copy of the ECC and an instruction sheet for teacher respondents, with two extra copies.

B. _____ envolopes, stamped "ADMINISTRATOR", each containing one copy of the ECC, also stamped "ADMINISTRATOR", and an instruction sheet for administrative respondents (Superintendents, Principals, Supervisors), with one extra copy.

C. One business envelope containing:
   1. Return postage (educational materials classification) from the Superintendent's office to Michigan State University.
   2. "Educational Materials" sticker for the return package.
   3. Address sticker for returning test materials to Dr. Herbert C. Rudman, College of Education, Michigan State University.

D. One Supplementary Information Form to be completed by the Superintendent.

II. DISTRIBUTION

A. Please contact each principal to notify him of the participation of your school district in this research project which is concerned with the identification and measurement of quality in an educational program.

B. Please give the principals instruction sheets, the ECC, and envelopes for each teacher he supervises (unless this can more easily be accomplished through your central office).

C. Give the principals and other administrator and supervisor respondents their instruction sheets, the ECC, and envolopes (marked "ADMINISTRATOR").

D. The Superintendent is requested to fill out the Supplementary Information Form in addition to responding to the ECC using materials marked "ADMINISTRATOR".

E. In case there is only one administrator, a Superintendent who also acts as Principal, it is desired that one "ADMINISTRATOR" ECC be given to the faculty individual who assists the Superintendent administratively more than any other faculty member. This individual would not fill out a teacher respondent ECC but would fill out only the "ADMINISTRATOR" ECC.

III. COLLECTION

A. It is requested that the collection point of the ECC envolopes be clearly specified to all respondents. If the "Principal", "Principal's Secretary", etc. are assigned the duty of collection, the respondents should be notified as to place and time of collection.

B. All envolopes, used or unused, with the enclosed ECC's should be collected and checked against the total sent (see I. A. and B., CONTENTS).

C. Do not retain ECC's for absent teachers. All forms should be returned to your office within 48 hours at the latest. It is hoped that the 48 hour limit will result in better individual perceptions that may be less influenced by group discussion.

IV. MAILING

A. The return package should include all the envelopes and the Supplementary Information Form completed by the Superintendent. There should be one package bound with cover paper, cord, and tape if necessary. Postage and stickers are in the business envelope. The Supplementary Information Form should be placed in an envelope on top of the ECC envelopes inside the package.

B. Postage has been calculated at the "Educational Materials" rate. If reimbursement for additional postage is required, please contact Dr. Herbert C. Rudman, College of Education, Michigan State University, East Lansing, Michigan.

I wish to express my appreciation to you, your staff, and your teachers for the cooperation you have given in this project. An abstract of the results will be sent to you upon completion of the project.

Herbert C. Rudman
Project Director

APPENDIX G

LETTER OF INSTRUCTIONS SENT TO SUPERINTENDENTS OF PARTICIPATING SCHOOL DISTRICTS

MICHIGAN STATE UNIVERSITY EAST LANSING

COLLEGE OF EDUCATION

October 10, 1963

Dear Superintendent:

Your willingness to participate in the national quality measurement study sponsored by the College of Education, Michigan State University, is sincerely appreciated. The enthusiastic and prompt response from school districts throughout the United States has made it possible to proceed immediately with the second phase of the project.

Educational Characteristics Criterion (ECC) questionnaires, instruction sheets and supplies, are being mailed to you under separate cover. Sufficient copies of the ECC are being sent to each selected district to permit every member of the teaching and administrative staff to participate.

It is not the intent of our study to identify or to compare responses within or between individual school districts. All data will be kept confidential and utilized only in a group analysis of districts similar in size and financial characteristics.

A copy of both the Supplemental Information Sheet for Superintendents and the General Instruction Sheet for administering the ECC are enclosed for your information. Additional copies of each of these forms are included with the package containing the questionnaires.

Your cooperation in the second and final phase of our investigation is appreciated. I hope that the administrators and teachers in your school system will find the experience of responding to the ECC an interesting and profitable professional one.

Should you have any questions or comments concerning the general instructions, the ECC or the recommended procedures for gathering responses, please contact me immediately.

Best wishes to you and your staff for a successful and rewarding school year.

Cordially yours,

Herbert C. Rudman
Professor of Education

HCR:cs
Enclosures: (2) Supplemental Data Sheet, General Instruction Sheet

APPENDIX H

DIFFERENCES BETWEEN TOTAL MEAN SCORES AND BETWEEN CATEGORY MEAN SCORES OF TEACHERS AND OF ADMINISTRATORS FROM HIGH FINANCIAL SUPPORT QUARTILE AND FROM LOW FINANCIAL SUPPORT QUARTILE

Difference in Between-Total Mean Scores and Between-Intensity Mean Scores of Teachers and of Administrators from High Financial Support Quartile and From Low Financial Support Quartile: High Quartile: Teachers N =

Differences between Total Mean Scores and between Category Mean Scores of Teachers and of Administrators from High Financial Support Quartile and from Low Financial Support Quartile. High Quartile: Teacher N = 1223, Administrator N = 92; Low Quartile: Teacher N = 1081, Administrator N = 82.

Group	$\bar{X}_H$	$\bar{X}_L$	$S.D._H$	$S.D._L$	D.F.	T	P	H_0
	Total Score (56 items)							
T	153.095	144.408	19.432	19.969	2303	10.553	P < .001	Reject
A	159.000	152.232	17.354	18.290	173	2.503	P < .02	Reject
	Category I: Student's Level of Knowledge (6 items)							
T	16.3213	15.5642	3.227	3.021	2303	5.8130	P < .001	Reject
A	17.4673	16.8658	2.977	2.883	173	1.350	P > .05	Accept
	Category II: Community Attitudes (11 items)							
T	28.5364	26.9186	5.283	5.371	2303	7.2711	P < .001	Reject
A	29.7608	28.2682	4.895	5.447	173	1.9034	P > .05	Accept
	Category III: Curriculum (5 items)							
T	16.0695	15.0574	2.681	2.888	2303	8.6809	P < .001	Reject
A	16.5652	16.2195	2.124	2.238	173	1.044	P > .05	Accept
	Category IV: Use of Facilities (1 item)							
T	2.9011	2.3913	1.010	.968	2303	12.3544	P < .001	Reject
A	3.1847	2.6341	.8377	.882	173	4.2213	P < .001	Reject
	Category V: Socio-cultural Composition of the Community (11 items)							
T	27.5781	26.1508	3.828	3.543	2303	9.2915	P < .001	Reject
A	27.9891	26.6707	3.571	3.363	173	2.4981	P < .02	Reject
	Category VI: Administration and Supervision (7 items)							
T	16.5503	15.5189	3.346	3.459	2303	7.2516	P < .001	Reject
A	17.4565	16.4268	3.249	3.388	173	2.0448	P < .05	Reject
	Category VII: The Teacher and Teaching Methods (15 items)							
T	45.0985	42.8066	5.937	6.574	2303	8.7374	P < .001	Reject
A	46.5760	45.1463	5.6319	5.053	173	1.7540	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

APPENDIX I

DIFFERENCES BETWEEN INDIVIDUAL EDUCATIONAL CHARACTERISTIC MEAN SCORES OF TEACHERS AND ADMINISTRATORS FROM HIGH FINANCIAL SUPPORT QUARTILE AND FROM LOW FINANCIAL SUPPORT QUARTILE

Differences between Individual Educational Characteristic Mean Scores of Teachers and of Administrators from High Financial Support Quartile and from Low Financial Support Quartile. High Quartile: Teacher N = 1223, Administrator N = 92; Low Quartile: Teacher N = 1081, Administrator N = 82.

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$S.D._H$	$S.D._L$	D.F.	T	P	H_0
		Category I: Student's Level of Knowledge and Attitudes							
		"Students show a positive attitude toward scholastic work"							
8	T	2.864	2.665	.710	.720	2303	6.662	P < .001	Reject
	A	3.206	2.914	.671	.651	173	2.901	P < .01	Reject
		"Students evidence accurate knowledge of self"							
9	T	2.314	2.267	.702	.728	2303	1.585	P > .05	Accept
	A	2.619	2.439	.692	.620	173	1.789	P > .05	Accept
		"Students are knowledgeable about the educational and social opportunities available to them"							
16	T	2.891	2.668	.774	.746	2303	6.401	P < .001	Reject
	A	3.119	2.865	.692	.662	173	2.461	P < .02	Reject
		"Pupils consider an academic grade of at least "B" to be the norm for academic achievement"							
51	T	2.728	2.593	.940	.855	2303	3.598	P < .001	Reject
	A	2.793	2.914	.920	.788	172	.927	P > .05	Accept
		"The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement"							
52	T	2.672	2.705	.940	.869	2303	.869	P > .05	Accept
	A	2.837	2.865	.855	.827	173	.225	P > .05	Accept
		"Parents and Patrons in the community consider an academic grade of at least "B" to be the norm for academic achievement"							
54	T	2.850	2.645	.866	.844	2303	5.761	P < .001	Reject
	A	2.891	2.865	.804	.857	1.72	.202	P > .05	Accept
		Category II: Community Attitudes							
		"Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education"							
21	T	2.829	2.469	.830	.898	2303	9.971	P < .001	Reject
	A	2.674	2.219	.853	.846	173	3.520	P < .001	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated. Continued

Item	Group	$\bar{X}_H$	$\bar{X}_L$	S.D.$_H$	S.D.$_L$	D.F.	T	P	H_0
		Category II: Community Attitudes (Continued)							
		"The perceptions of parents and patrons concerning the purposes of education are consistent and clear"							
28	T	2.256	2.129	.840	.810	2303	3.671	P < .001	Reject
	A	2.391	2.280	.678	.774	173	1.006	P > .05	Accept
		"The local newspaper has shown a high interest in local school affairs"							
29	T	2.898	2.838	.909	1.006	2303	1.505	P > .05	Accept
	A	3.130	3.000	.773	.968	173	.986	P > .05	Accept
		"There is no lag between the values taught in the school and what is practiced in the community"							
30	T	2.339	2.323	.840	.848	2303	.4409	P > .05	Accept
	A	2.413	2.451	.803	.814	173	.310	P > .05	Accept
		"A high percentage of the electorate in the community vote in school elections"							
36	T	2.429	2.278	.875	.887	2303	4.097	P < .001	Reject
	A	2.467	2.378	.804	.747	173	.755	P > .05	Accept
		"There are outstanding community leaders in this community who exhibit great interest in school affairs"							
37	T	2.738	2.710	.894	.928	2303	.7320	P > .05	Accept
	A	2.956	2.914	.948	.877	173	.3010	P > .05	Accept
		"The community exhibits a great concern for the developments of aesthetic and artistic interests"							
39	T	2.458	2.051	.923	.874	2303	10.881	P < .001	Reject
	A	2.663	2.183	.986	.787	173	3.519	P < .001	Reject
		"A two-way communication channel readily exists between the home and the school"							
40	T	2.978	2.611	.834	.873	2303	10.280	P < .001	Reject
	A	3.250	3.012	.793	.794	173	1.997	P < .001	Reject
		"The parents in this community expect their children to perform their share of family chores"							
45	T	2.188	2.539	.798	.824	2303	10.356	P < .001	Reject
	A	2.152	2.597	.740	.734	173	3.975	P < .001	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated. Continued

APPENDIX I - Continued

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$S.D._H$	$S.D._L$	D.F.	T	P	H_0
		Category II: Community Attitudes (Continued)							
		"A high value is placed on education by the parents and patrons (those residents of a school district without school-age children) of the community"							
53	T	3.0114	2.695	.892	.857	2303	8.681	P < .001	Reject
	A	3.119	2.853	.849	.876	173	2.030	P < .05	Reject
		"Parents condone or encourage early dating for their children"							
55	T	2.870	2.618	.832	.864	2303	7.127	P < .001	Reject
	A	2.543	2.378	.790	.924	173	1.272	P > .05	Accept
		Category III: Curriculum							
		"Teachers perceive a coherent and coordinated structure to the educational program"							
4	T	2.9304	2.856	.803	.785	2303	2.228	P < .05	Reject
	A	2.967	2.951	.636	.718	173	.157	P > .05	Accept
		"Consensus exists among the staff concerning the goals of the educational program"							
5	T	2.950	2.926	.887	.876	2303	.6776	P > .05	Accept
	A	3.097	3.109	.696	.785	173	..106	P > .05	Accept
		"A structure has been developed that permits continual curriculum experimentation"							
6	T	3.1668	2.932	.897	.932	2303	6.125	P < .001	Reject
	A	3.282	3.232	.816	.742	173	.4284	P > .05	Reject
		"A great variety of instructional techniques are presently used in the classroom"							
15	T	3.318	2.905	.746	.876	2303	12.105	P < .001	Reject
	A	3.478	3.170	.601	.716	173	3.075	P < .01	Reject
		"A complete comprehensive testing program including intelligence and achievement testing is available in the schools"							
17	T	3.689	3.437	.590	.800	2303	8.496	P < .001	Reject
	A	3.739	3.756	.552	.459	173	.218	P > .05	Accept
		Category IV: Use of Facilities							
		"The physical facilities of the school system (buildings and equipment) are completely adequate"							
32	T	2.901	2.391	1.010	.968	2303	12.354	P < .001	Reject
	A	3.184	2.634	.837	.882	173	4.221	P < .001	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated. Continued

APPENDIX I - Continued

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$S.D._H$	$S.D._L$	D.F.	T	P	H_0
		Category V: Socio-cultural Composition of the Community							
		"The social status of teachers is very high in this community"							
25	T	2.512	2.731	.893	.896	2303	5.098	P < .001	Reject
	A	2.706	2.841	.763	.823	173	1.121	P > .05	Accept
		"Cultural experiences are readily available in the community"							
34	T	2.641	2.174	.984	.919	2303	11.743	P < .001	Reject
	A	2.826	2.341	.956	.891	173	3.444	P < .001	Reject
		"This is a highly stable community which does not have too many people leaving"							
38	T	2.668	2.659	.973	.993	2303	.248	P > .05	Accept
	A	2.695	2.707	.910	.987	173	8.101	P < .001	Reject
		"A high percentage of high school students own personal cars"							
41	T	2.697	2.185	.901	.905	2303	13.590	P < .001	Reject
	A	2.684	2.207	.876	.885	173	3.570	P < .001	Reject
		"A high percentage of homes own television sets"							
42	T	3.860	3.763	.417	.524	2303	4.865	P < .001	Reject
	A	3.913	3.756	.283	.459	173	2.741	P < .01	Reject
		"A high degree of ethnic, racial, and religious homogeniety exists among the local population"							
44	T	2.594	2.543	1.003	.984	2303	1.239	P > .05	Accept
	A	2.641	2.756	1.000	1.072	173	.730	P > .05	Accept
		"This community is composed of people who are predominantly Protestant"							
46	T	2.198	3.041	1.083	1.093	2303	18.545	P < .001	Reject
	A	2.032	3.146	1.031	1.116	173	6.682	P < .001	Reject
		"This community is composed of people who are predominantly Catholic"							
47	T	1.878	1.725	.894	.986	2303	3.898	P < .001	Reject
	A	1.782	1.536	.836	.971	173	1.795	P > .05	Accept
		"This community is composed of people who are predominantly Jewish"							
48	T	1.943	1.046	1.207	.275	2303	25.232	P < .001	Reject
	A	2.054	1.000	1.278	.000	173	7.468	P < .001	Reject
		"The population of this community is equally divided between Protestants and Catholics"							
49	T	1.775	1.622	.923	.959	2303	3.384	P < .001	Reject
	A	1.750	1.585	1.102	.980	173	1.086	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated. Continued

Item	Group	$\bar{X}_H$	$\bar{X}_L$	S.D.$_H$	S.D.$_L$	D.F.	T	P	H_0
		Category V: Socio-cultural Composition of the Community (Continued)							
		"One or two ethnic groups comprise the largest number of residents in the community"							
50	T	2.798	2.619	1.111	1.083	2303	3.930	P < .001	Reject
	A	2.902	2.792	1.186	1.173	173	.610	P > .05	Accept
		Category VI: Administration and Supervision							
		"Professional staff of the school system are involved in in-service education"							
10	T	2.885	2.748	.954	.956	2303	3.437	P < .001	Reject
	A	3.010	2.817	.966	.890	173	1.369	P > .05	Accept
		"Lay members of the community are highly involved in the planning of educational goals with the school staff"							
22	T	2.225	2.000	.903	.880	2303	6.042	P < .001	Reject
	A	2.326	2.134	.927	.885	173	1.392	P > .05	Accept
		"Regulations governing student conduct are highly explicit and detailed"							
23	T	2.753	2.746	.945	.937	2303	.189	P > .05	Accept
	A	2.836	2.926	.842	.844	173	.702	P > .05	Accept
		"Regulations governing personnel policies are highly explicit and detailed"							
26	T	2.917	2.602	.935	.923	2303	8.127	P < .001	Reject
	A	2.989	2.804	.845	.881	173	1.497	P > .05	Accept
		"Citizens are highly organized to discuss school problems"							
27	T	2.333	2.038	.905	.877	2302	7.952	P < .001	Reject
	A	2.456	1.963	.882	.761	173	3.924	P < .001	Reject
		"Teachers' judgments are almost always used in the determination of educational policies"							
35	T	2.641	2.174	.984	.919	2303	11.744	P < .001	Reject
	A	2.837	2.708	.802	.770	173	.472	P > .05	Accept
		"School program is accredited by the state and/or regional accrediting agencies"							
56	T	4.000	4.000	0	0	2303	0	P > .05	Accept
	A	4.000	4.000	0	0	173	0	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated. Continued

APPENDIX I - Continued

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$S.D._H$	$S.D._L$	D.F.	T	P	H_0
		Category VII: The Teacher and Teaching Methods							
		"Teachers have intimate knowledge of children"							
1	T	3.040	2.898	.689	.724	2303	4.796	P < .001	Reject
	A	3.141	3.024	.719	.666	173	1.107	P > .05	Accept
		"Teaching practices reflect concern for individual differences"							
2	T	3.221	3.036	.710	.767	2303	5.971	P < .001	Reject
	A	3.228	3.085	.696	.651	173	1.391	P > .05	Accept
		"Teaching practices reflect a knowledge of individual differences"							
3	T	3.179	2.977	.714	.784	2303	6.429	P > .001	Reject
	A	3.141	2.036	.688	.744	173	.963	P > .05	Accept
		"Evidence exists of instructional and/or curricular experimentation"							
7	T	3.141	2.740	.836	.901	2303	11.008	P < .001	Reject
	A	3.304	2.951	.722	.664	173	3.341	P < .005	Reject
		"Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions"							
11	T	2.912	2.748	.795	.868	2303	4.684	P < .001	Reject
	A	2.880	2.707	.723	.777	173	1.520	P > .05	Accept
		"All teachers are certified to teach at the grade level or subject they are now teaching"							
12	T	3.635	3.328	.666	.868	2303	9.431	P < .001	Reject
	A	3.858	3.695	.408	.581	173	2.165	P < .05	Reject
		"Teachers have complete freedom to teach what they consider to be important"							
13	T	3.112	3.261	.861	.838	2303	4.198	P < .001	Reject
	A	3.130	3.280	.854	.724	173	1.241	P > .05	Accept
		"A great variety of instructional techniques are presently used in the classroom"							
14	T	3.351	3.027	.711	.823	2303	10.031	P < .001	Reject
	A	3.510	3.219	.637	.685	173	2.904	P < .01	Reject
		"Teachers often avail themselves of professional help"							
18	T	2.988	2.773	.801	.845	2303	6.247	P < .001	Reject
	A	3.217	2.902	.723	.677	173	2.952	P < .01	Reject

The null hypotheses are rejected as the 0.05 significance level. Higher levels are indicated. Continued

APPENDIX I - Continued

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$S.D._H$	$S.D._L$	D.F.	T	P	H_0
		Category VII: The Teacher and Teaching Methods (Continued)							
		"Complete freedom is granted to students to investigate any local, state, national, or international issue"							
19	T	3.125	2.939	.799	.934	2303	5.077	P < .001	Reject
	A	3.315	3.121	.740	.791	173	1.663	P > .05	Accept
		"Availability to students of materials that reflect all shades of political and sociological points of view"							
20	T	2.829	2.469	.830	.898	2303	9.971	P < .001	Reject
	A	3.174	2.695	.750	.811	173	4.042	P < .001	Reject
		"High degree of teacher participation in social and political activities of the community"							
24	T	2.134	2.556	.896	.912	2303	11.192	P < .001	Reject
	A	2.119	2.585	.862	.859	173	3.561	P < .001	Reject
		"There exists a high level of cooperation among teachers of the staff"							
31	T	3.346	3.274	.778	.828	2303	2.139	P < .05	Reject
	A	3.413	3.524	.743	.549	173	1.112	P > .05	Accept
		"The Community and its residents are used for instructional purposes"							
33	T	2.364	2.146	.885	.811	2303	6.181	P < .001	Reject
	A	2.293	2.390	.832	.749	173	.802	P > .05	Accept
		"A great deal of homework is assigned to students"							
43	T	2.713	2.628	.752	.704	2303	2.794	P < .01	Reject
	A	2.847	2.927	.811	.624	173	.713	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

APPENDIX J

DIFFERENCES BETWEEN TOTAL MEAN SCORES AND BETWEEN CATEGORY MEAN SCORES OF TEACHERS AND ADMINISTRATORS WITHIN HIGH FINANCIAL SUPPORT QUARTILE AND OF TEACHERS AND ADMINISTRATORS WITHIN LOW FINANCIAL SUPPORT QUARTILE

Differences between Total Mean Scores and between Category Mean Scores of Teachers and of Administrators within High Financial Support Quartile and within Low Financial Support Quartile. High Quartile: Teacher N = 1223, Administrator N = 92; Low Quartile: Teacher N = 1081, Administrator N = 82.

Group	$\bar{X}_T$	$\bar{X}_A$	S.D.$_T$	S.D.$_A$	D.F.	T	P	H_0
Total Score (56 items)								
High	153.0948	159.000	19.4316	17.3541	1314	3.1199	P < .005	Reject
Low	144.4079	152.2317	19.969	18.290	1162	3.7054	P < .001	Reject
Category I: Student's Level of Knowledge (6 items)								
High	16.3213	17.4673	3.2274	2.9777	1314	3.5385	P < .001	Reject
Low	15.5643	16.8658	3.0211	2.8835	1162	3.9270	P < .001	Reject
Category II: Community Attitudes (11 items)								
High	28.5363	29.7608	5.282	4.8953	1314	2.3005	P < .05	Reject
Low	26.9185	28.2682	5.370	5.447	1162	2.1650	P < .05	Reject
Category III: Curriculum (5 items)								
High	16.0695	16.5652	2.6812	2.1241	1314	2.1151	P < .05	Reject
Low	15.0573	16.2195	2.888	2.238	1162	4.4290	P < .001	Reject
Category IV: Use of Facilities (1 item)								
High	2.9019	3.1847	1.010	.8377	1314	3.0842	P < .01	Reject
Low	2.3913	2.5341	.9687	.8820	1162	2.3861	P < .02	Reject
Category V: Socio-cultural Composition of the Community (11 items)								
High	27.5780	27.9891	3.8288	3.5718	1314	1.0589	P > .05	Accept
Low	26.1507	26.6707	3.5426	3.3630	1162	1.3445	P > .05	Accept
Category VI: Administration and Supervision (7 items)								
High	16.5502	17.4565	3.3464	3.493	1314	2.5743	P < .02	Reject
Low	15.1589	16.4268	3.459	3.388	1162	3.2617	P < .005	Reject
Category VII: The Teacher and Teaching Methods (15 items)								
High	45.0948	46.5760	5.9367	5.6319	1314	2.423	P < .02	Reject
Low	42.8066	45.1463	6.5742	5.0531	1162	3.9470	P < .001	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

APPENDIX K

DIFFERENCES BETWEEN INDIVIDUAL EDUCATIONAL CHARACTERISTIC MEAN SCORES OF TEACHERS AND ADMINISTRATORS WITHIN HIGH FINANCIAL SUPPORT QUARTILE AND OF TEACHERS AND ADMINISTRATORS WITHIN LOW FINANCIAL SUPPORT QUARTILE

Differences between Individual Educational Characteristic Mean Scores of Teachers and of Administrators within High Financial Support Quartile and within Low Financial Support Quartile. High Quartile: Teacher N = 1223, Administrator N = 92; Low Quartile: Teacher N = 1081, Administrator N = 82.

Item	Group	$\bar{X}_T$	$\bar{X}_A$	S.D.$_T$	S.D.$_A$	D.F.	T	P	H_0
		Category I: Student's Level of Knowledge and Attitudes							
		Students show a positive attitude toward scholastic work							
8	High	2.864	3.206	.710	.671	1314	4.692	P <.001	Reject
	Low	2.665	2.914	.720	.651	1162	3.316	P <.001	Reject
		Students evidence accurate knowledge of self							
9	High	2.314	2.619	.702	.692	1314	4.064	P < .001	Reject
	Low	2.267	2.439	.728	.630	1162	2.349	P < .02	Reject
		Students are knowledgeable about the educational and social opportunities available to them							
16	High	2.891	3.119	.774	.692	1314	3.021	P < .01	Reject
	Low	2.688	2.865	.746	.662	1162	2.319	P < .05	Reject
		Pupils consider an academic grade of at least "B" to be the norm for academic achievement							
51	High	2.728	2.793	.940	.920	1314	.651	P > .05	Accept
	Low	2.593	2.915	.855	.788	1162	3.527	P < .001	Reject
		The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement							
52	High	2.672	2.836	.940	.855	1314	1.769	P > .05	Accept
	Low	2.705	2.865	.869	.827	1162	1.691	P > .05	Accept
		Parents and patrons in the community consider an academic grade of at least "B" to be the norm for academic achievement							
54	High	2.850	2.891	.866	.804	1314	.4680	P > .05	Accept
	Low	2.644	2.865	.844	.857	1162	2.253	P < .05	Reject
		Category II: Community Attitudes							
		"Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education"							
21	High	2.417	2.673	.875	.853	1314	2.771	P < .01	Reject
	Low	2.124	2.219	.801	1.846	1162	.989	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated. Continued

APPENDIX K - Continued

Item	Group	$\bar{X}_T$	$\bar{X}_A$	S.D.$_T$	S.D.$_A$	D.F.	T	P	H_0
		Category II: Community Attitudes (Continued)							
		"The perceptions of parents and patrons concerning the purposes of education are consistent and clear"							
28	High	2.255	2.391	.840	.678	1314	1.811	P > .05	Accept
	Low	2.129	2.280	.810	.774	1162	1.696	P > .05	Accept
		"The local newspaper has shown a high interest in local school affairs"							
29	High	2.898	3.130	.909	.773	1314	2.736	P < .01	Reject
	Low	2.838	3.000	1.006	.968	1162	1.454	P > .05	Accept
		"There is no lag between the values taught in the school and what is practiced in the community"							
30	High	2.339	2.413	.840	.814	1314	.8357	P > .05	Accept
	Low	2.323	2.451	.848	.803	1162	1.379	P > .05	Accept
		"A high percentage of the electorate in the community vote in school elections"							
36	High	2.429	2.467	.875	.804	1314	.4355	P > .05	Accept
	Low	2.278	2.378	.887	.747	1162	1.146	P > .05	Accept
		"There are outstanding community leaders in this community who exhibit great interest in school affairs"							
37	High	2.738	2.956	.894	.948	1314	2.136	P < .05	Reject
	Low	2.710	2.915	.928	.877	1162	2.022	P < .05	Reject
		"The community exhibits a great concern for the developments of aesthetic and and artistic interests"							
39	High	2.458	2.663	.923	.986	1314	1.924	P > .05	Accept
	Low	2.051	2.182	.874	.787	1162	1.451	P > .05	Accept
		"A two-way communication channel readily exists between the home and the school"							
40	High	2.978	3.250	.834	.793	1314	3.151	P < .005	Reject
	Low	2.611	3.012	.873	.793	1162	4.376	P < .001	Reject
		"The parents in this community expect their children to perform their share of family chores"							
45	High	2.188	2.152	.798	.740	1314	.4459	P > .05	Accept
	Low	2.539	2.597	.824	.734	1162	.685	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

Continued

Item	Group	$\bar{X}_T$	$\bar{X}_A$	S.D.$_T$	S.D.$_A$	D.F.	T	P	H_0
		Category II: Community Attitudes (Continued)							
		"A high value is placed on education by the parents and patrons (those residents of a school district without school-age children) of the community"							
53	High	3.011	3.119	.892	.849	1314	1.172	P > .05	Accept
	Low	2.694	2.853	.857	.876	1162	1.585	P > .05	Accept
		"Parents condone or encourage early dating for their children"							
55	High	2.870	2.543	.832	.790	1314	3.816	P < .001	Reject
	Low	2.617	2.378	.864	.924	1162	2.274	P < .05	Reject
		Category III: Curriculum							
		"Teachers perceive a coherent and coordinated structure to the educational program"							
4	High	2.930	2.967	.803	.636	1314	.525	P > .05	Accept
	Low	2.856	2.951	.785	.718	1162	1.141	P > .05	Accept
		"Consensus exists among the staff concerning the goals of the educational program"							
5	High	2.950	3.097	.887	.696	1314	1.909	P > .05	Accept
	Low	2.926	3.109	.876	.785	1162	2.024	P < .05	Reject
		"A structure has been developed that permits continual curriculum experimentation"							
6	High	3.166	3.282	.897	.816	1314	1.302	P > .05	Accept
	Low	2.932	3.231	.932	.742	1162	3.450	P < .001	Reject
		"A great variety of instructional techniques are presently used in the classroom"							
15	High	3.318	3.478	.746	.601	1314	2.417	P < .02	Reject
	Low	2.904	3.170	.876	.716	1162	3.185	P < .005	Reject
		"A complete comprehensive testing program including intelligence and achievement testing is available in the schools"							
17	High	3.689	3.739	.590	.552	1314	.8310	P > .05	Accept
	Low	3.437	3.756	.800	.459	1162	5.657	P < .001	Reject
		Category IV: Use of Facilities							
		"The physical facilities of the school system (buildings and equipment) are completely adequate"							
32	High	2.901	3.184	1.010	.837	1314	3.084	P < .01	Reject
	Low	2.391	2.634	.968	.882	1162	2.386	P < .02	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

Continued

Item	Group	$\bar{X}_T$	$\bar{X}_A$	S.D.$_T$	S.D.$_A$	D.F.	T	P	H_0
		Category V: Socio-cultural Composition of the Community							
		"The social status of teachers is very high in this community"							
25	High	2.541	2.706	.893	.763	1314	1.975	P < .05	Reject
	Low	2.731	2.841	.895	.823	1162	1.155	P > .05	Accept
		"Cultural experiences are readily available in the community"							
34	High	2.611	2.826	.984	.956	1314	1.786	P > .05	Accept
	Low	2.175	2.341	.919	.891	1162	1.627	P > .05	Accept
		"This is a highly stable community which does not have too many people leaving"							
38	High	2.668	2.695	.910	.973	1314	.270	P > .05	Accept
	Low	2.658	2.707	.993	.987	1162	.430	P > .05	Accept
		"A high percentage of high school students own personal cars"							
41	High	2.697	2.684	.901	.876	1314	.1335	P > .05	Accept
	Low	2.185	2.207	.905	.885	1162	.219	P > .05	Accept
		"A high percentage of homes own television sets"							
42	High	3.860	3.913	.417	.283	1314	1.659	P > .05	Accept
	Low	3.763	3.756	.524	.459	1162	.133	P > .05	Accept
		"A high degree of ethnic, racial and religious homogeneity exists among the local population"							
44	High	2.594	2.641	1.003	1.000	1314	.4330	P > .05	Accept
	Low	2.543	2.756	.984	1.072	1162	1.744	P > .05	Accept
		"This community is composed of people who are predominantly Protestant"							
46	High	2.198	2.032	1.083	1.031	1314	1.483	P > .05	Accept
	Low	3.041	3.146	1.093	1.166	1162	.787	P > .05	Accept
		"This community is composed of people who are predominantly Catholic"							
47	High	1.878	1.782	.894	.836	1314	1.060	P > .05	Accept
	Low	1.725	1.536	.986	.971	1162	1.694	P > .05	Accept
		"This community is composed of people who are predominantly Jewish"							
48	High	1.942	2.054	1.207	1.278	1314	.8103	P > .05	Accept
	Low	1.046	1.000	.275	.000	1162	5.529	P < .001	Reject
		"The population of this community is equally divided between Protestants and Catholics"							
49	High	1.755	1.750	.923	1.012	1314	.506	P > .05	Accept
	Low	1.662	1.585	.959	.980	1162	.686	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated. Continued

APPENDIX K - Continued

Item	Group	$\bar{X}_T$	$\bar{X}_A$	S.D.$_T$	S.D.$_A$	D.F.	T	P	H_0
		Category V: Socio-cultural Composition of the Community (Continued)							
		"One or two ethnic groups comprise the largest number of residents in the community"							
50	High	2.798	2.902	1.111	1.186	1314	.8089	P > .95	Accept
	Low	2.618	2.792	1.083	1.173	1162	1.300	P > .05	Accept
		Category VI: Administration and Supervision							
		"Professional staff or the school system are involved in in-service education"							
10	High	2.885	3.010	.954	.966	1314	1.200	P > .05	Accept
	Low	2.748	2.817	.956	.890	1162	.669	P > .05	Accept
		"Lay members of the community are highly involved in the planning of educational goals with the school staff"							
22	High	2.224	2.326	.903	.927	1314	1.011	P > .05	Accept
	Low	2.000	2.134	.880	.885	1162	1.322	P > .05	Accept
		"Regulations governing student conduct are highly explicit and detailed"							
23	High	2.753	2.836	.945	.842	1314	.9130	P > .05	Accept
	Low	2.745	2.926	.937	.842	1162	1.861	P > .05	Accept
		"Regulations governing personnel policies are highly explicit and detailed"							
26	High	2.917	2.989	.935	.845	1314	.778	P > .05	Accept
	Low	2.602	2.805	.923	.881	1162	2.001	P < .05	Reject
		"Citizens are highly organized to discuss school problems"							
27	High	2.333	2.456	.905	.882	1314	1.286	P > .05	Accept
	Low	2.037	1.963	.887	.760	1162	.845	P > .05	Accept
		"Teachers' judgments are almost always used in the determination of educational policies"							
35	High	2.435	2.836	.891	.802	1314	4.588	P < .001	Reject
	Low	2.384	2.780	.843	.770	1162	4.453	P < .001	Reject
		"School program is accredited by the state and/or regional accrediting agencies"							
56	High	4.000	4.000	.000	.000	1314	0	P > .05	Accept
	Low	4.000	4.000	.000	.000	1162	0	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

Continued

APPENDIX K - Continued

Item	Group	$\bar{X}_T$	$\bar{X}_A$	S.D.$_T$	S.D.$_A$	D.F.	T	P	H_0
		Category VII: The Teacher and Teaching Methods							
		"Teachers have intimate knowledge of children"							
1	High	3.040	3.141	.689	.719	1314	1.304	P > .05	Accept
	Low	2.898	3.024	.724	.666	1162	1.642	P > .05	Accept
		"Teaching practices reflect concern for individual differences"							
2	High	3.179	3.141	.714	.688	1314	.5167	P > .05	Accept
	Low	2.977	3.036	.784	.744	1162	.6867	P > .05	Accept
		"Evidence exists of instructional and/or curricular experimentation"							
7	High	3.141	3.304	.836	.722	1314	2.061	P < .05	Reject
	Low	2.740	2.951	.901	.664	1162	2.682	P < .01	Reject
		"Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions"							
11	High	2.911	2.880	.795	.723	1314	.3965	P > .05	Accept
	Low	2.748	2.707	.868	.777	1162	.4571	P > .05	Accept
		"All teachers are certified to teach at the grade level or subject they are now teaching"							
12	High	3.635	3.858	.666	.408	1314	4.789	P < .001	Reject
	Low	3.328	3.695	.868	.581	1162	5.282	P < .001	Reject
		"Teachers have complete freedom to teach what they consider to be important"							
13	High	3.112	3.130	.861	.854	1314	.1992	P > .05	Accept
	Low	3.260	3.280	.838	.724	1162	.2335	P > .05	Accept
		"A great variety of instructional techniques are presently used in the classrooms"							
14	High	3.351	3.510	.711	.637	1314	2.291	P < .05	Reject
	Low	3.027	3.219	.823	.685	1162	2.405	P < .05	Reject
		"Teachers often avail themselves of professional help"							
18	High	2.988	3.217	.801	.723	1314	2.902	P < .01	Reject
	Low	2.773	2.902	.845	.677	1162	1.630	P > .05	Accept
		"Complete freedom is granted to students to investigate any local, state, national, or international issue"							
19	High	3.125	3.315	.799	.740	1314	2.361	P < .02	Reject
	Low	2.939	3.121	.934	.791	1162	1.980	P < .05	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

Continued

APPENDIX K - Continued

Item	Group	$\bar{X}_T$	$\bar{X}_A$	S.D.$_T$	S.D.$_A$	D.F.	T	P	H_0
		Category VII: The Teacher and Teaching Methods (Continued)							
		"Availability to students of materials that reflect all shades of political and sociological points of view"							
20	High	2.829	3.173	.830	.750	1314	4.208	P < .001	Reject
	Low	2.469	2.695	.898	.811	1162	2.413	P < .02	Reject
		"High degree of teacher participation in social and political activities of the community"							
24	High	2.134	2.119	.896	.862	1314	.1554	P < .05	Accept
	Low	2.556	2.585	.912	.859	1162	.2887	P > .05	Accept
		"There exists a high level of cooperation among the teachers of the staff"							
31	High	3.346	3.413	.778	.743	1314	.8228	P < .05	Accept
	Low	3.274	3.524	.828	.549	1162	3.799	P < .001	Reject
		"The community and its residents are used for instructional purposes"							
33	High	2.364	2.293	.885	.832	1314	.7874	P > .05	Accept
	Low	2.146	2.390	.811	.749	1162	2.825	P < .01	Reject
		"A great deal of homework is assigned to students"							
43	High	2.713	2.847	.752	.811	1314	1.545	P > .05	Accept
	Low	2.628	2.927	.704	.624	1162	4.137	P < .001	Reject
		"Teaching practices reflect a knowledge of individual differences"							
3	High	3.179	3.141	.714	.688	1314	.5167	P > .05	Accept
	Low	2.977	3.036	.784	.744	1162	.6867	P < .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

APPENDIX L

DIFFERENCES BETWEEN TOTAL MEAN SCORES AND BETWEEN CATEGORY MEAN SCORES OF TEACHERS AND ADMINISTRATORS WITHIN DISTRICT NO. 2 (HIGH FINANCIAL SUPPORT QUARTILE), AND WITHIN DISTRICTS NO. 15 AND NO. 23 (LOW FINANCIAL SUPPORT QUARTILE)

Differences between Total Mean Scores and between Category Mean Scores of Teachers and Administrators within District No. 2 (High Quartile), and Districts No. 15 and No. 23 (Low Quartile). District No. 2: Teacher N = 207, Administrator N = 23; District No. 15: Teacher N = 71, Administrator N = 5; District No. 23: Teacher N = 61, Administrator N = 4.

District Number	$\bar{X}_T$	$\bar{X}_A$	$S.D._T$	$S.D._A$	D.F.	T	P	H_0
Total Score (56 items)								
2	165.951	171.565	16.883	13.114	229	1.886	P > .05	Accept
15	137.323	155.600	19.425	5.941	75	5.195	P < .001	Reject
23	139.032	159.500	17.620	33.788	64	1.200	P > .05	Accept
Category I: Student's Level of Knowledge (6 items)								
2	18.801	19.478	2.715	2.556	229	1.196	P > .05	Accept
15	14.873	16.800	2.677	2.167	75	1.888	P > .05	Accept
23	15.409	18.250	2.900	4.500	64	1.245	P > .05	Accept
Category II: Community Attitudes (11 items)								
2	32.149	33.086	4.331	4.176	229	1.017	P > .05	Accept
15	25.647	28.800	4.669	2.863	75	2.258	P < .05	Reject
23	25.229	31.250	4.903	8.341	64	1.427	P > .05	Accept
Category III: Curriculum (5 items)								
2	16.425	17.217	2.444	1.650	229	2.064	P < .05	Reject
15	14.788	15.800	3.056	2.167	75	.977	P > .05	Accept
23	14.721	16.000	2.416	3.162	64	.794	P > .05	Accept
Category IV: Use of Facilities (1 item)								
2	3.048	3.652	.9017	.4869	229	5.060	P < .001	Reject
15	2.028	2.400	.8614	.8914	75	.9006	P > .05	Accept
23	2.557	3.000	1.147	.816	64	1.020	P > .05	Accept
Category V: Socio-cultural Composition of the Community (11 items)								
2	30.599	31.608	2.833	2.147	229	2.064	P < .05	Reject
15	24.859	28.600	3.261	1.816	75	4.156	P < .001	Reject
23	24.278	27.000	3.210	3.464	64	1.528	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

Continued

APPENDIX L - Continued

District Number	$\bar{X}_T$	$\bar{X}_A$	$S.D._T$	$S.D._A$	D.F.	T	P	H_0
Category VI: Administration and Supervision (7 items)								
2	18.565	18.739	3.127	3.222	229	.2463	P > .05	Accept
15	14.817	15.200	3.844	2.863	75	.2817	P > .05	Accept
23	14.885	17.250	3.521	5.737	64	.8143	P > .05	Accept
Category VII: The Teacher and Teaching Methods (15 items)								
2	46.362	47.782	5.577	5.187	229	1.236	P > .05	Accept
15	40.309	48.000	6.541	2.646	75	5.433	P < .001	Reject
23	41.951	46.750	6.540	9.674	64	.977	P > .05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher levels are indicated.

APPENDIX M

ANALYSIS OF VARIANCE RELIABILITY TESTS FOR TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN HIGH FINANCIAL SUPPORT DISTRICTS

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in High Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers (N = 1223)								
Teachers	1222	8250	6.75	.907	10.8	< .01	3.13	0.002
Items	55	16600	312.0					
Error	67210	42000	.625					
Administrators (N = 92)								
Administrators	91	489	5.38	.894	9.41	< .01	2.90	0.005
Items	55	1450	26.4					
Error	5005	2860	.572					

Analysis of Variance Reliability Tests for Category I Scores (Student's Level of Knowledge and Attitudes) of Teachers and of Administrators in High Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1222	1220	.999	.423	1.73	< .01	.856	.277
Items	5	306	61.2					
Error	6110	3520	.576					
Administrators								
Administrators	91	93.3	1.03	.500	2.00	< .01	.999	.240
Items	5	31.1	6.22					
Error	455	233.	.513					

Continued

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and of Administrators in High Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1222	3380	2.77	.773	4.40	< .01	1.84	.073
Items	10	584	58.4					
Error	12220	7680	.628					
Administrators								
Administrators	91	212.	2.33	.762	4.20	< .01	1.79	.080
Items	10	62.2	6.22					
Error	910	505.	.555					

Analysis of Variance Reliability Tests for Category III Scores (Curriculum) of Teachers and of Administrators in High Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1222	1630	1.34	.568	2.32	< .01	1.15	.205
Items	4	970	242.					
Error	4888	2820	.578					
Administrators								
Administrators	91	95.5	1.05	.521	2.09	< .01	1.04	.232
Items	4	80.1	20.0					
Error	364	183.0	.503					

Continued

Analysis of Variance Reliability Tests for Category V Scores (Socio-cultural Composition of the Community) of Teachers and of Administrators in High Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1222	425	.348	.552	2.23	< .01	1.11	.215
Items	10	7530	753.					
Error	12220	1050	.156					
Administrators								
Administrators	91	31.4	.345	.562	2.28	< .01	1.13	.210
Items	10	590	59.0					
Error	910	756	.151					

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and of Administrators in High Financial Support Quartile

Teachers								
Teachers	1222	2150	1.76	.642	2.79	< .01	1.34	.162
Items	6	774	129.					
Error	7332	4630	.632					
Administrators								
Administrators	91	126.	1.39	.643	2.80	< .01	1.34	.162
Items	6	91.6	15.3					
Error	546	271.	.496					

Continued

Analysis of Variance Reliability Tests for Category VII Scores (The Teacher and Teaching Methods) of Teachers and of Administrators in High Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1222	2990	2.44	.766	4.27	< .01	1.81	.077
Items	14	3990	285.					
Error	17108	9790	.572					
Administrators								
Administrators	91	173	1.90	.706	3.41	< .01	1.55	.120
Items	14	342	24.4					
Error	1274	712	.559					

APPENDIX N

ANALYSIS OF VARIANCE RELIABILITY TESTS FOR TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN LOW FINANCIAL SUPPORT DISTRICTS

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in Low Financial Support Quartile.

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers (N = 1081)								
Teachers	1080	7690	7.12	.913	11.5	< .01	3.24	0.002
Items	55	15100	275.00					
Error	59400	36800	.620					
Administrators (N = 82)								
Administrators	81	484	5.97	.911	11.3	< .01	3.20	0.002
Items	55	1430	26.00					
Error	4455	2360	.530					

Analysis of Variance Reliability Tests for Category I Scores (Student's Level of Knowledge and Attitudes) of Teachers and of Administrators in Low Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1080	1110.	1.02	.417	1.72	< .01	.846	.280
Items	5	146.	29.2					
Error	5400	3220.	.597					
Administrators								
Administrators	81	50.3	.621	.111	1.12	> .01 NS	.354	.375
Items	5	67.7	13.5					
Error	405	223.	.552					

Continued

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and Administrators in Low Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1080	2730.	2.53	.747	3.95	< .01	1.72	.090
Items	10	830	83.					
Error	10800	6920	.641					
Administrators								
Administrators	81	194	2.40	.762	4.21	< .01	1.79	.080
Items	10	90.9	9.09					
Error	810	461	.570					

Analysis of Variance Reliability Tests for Category III (Curriculum) of Teachers and of Administrators in Low Financial Support Quartile

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1080	1620	1.50	.593	2.46	< .01	1.21	.191
Items	4	785	196.					
Error	4320	2640	.611					
Administrators								
Administrators	81	99.4	1.23	.606	2.54	< .01	1.24	.84
Items	4	93.2	23.3					
Error	324	157.	.484					

Continued

Analysis of Variance Reliability Tests for Category V Scores (Socio-cultural Composition of the Community) of Teachers and of Administrators in Low Financial Quartile.

Source of Variation	D. F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1080	261.	.242	.448	1.81	< .01	.900	.266
Items	10	5690.	569.					
Error	10800	794	.134					
Administrators								
Administrators	81	20.0	.247	.471	1.89	< .01	.943	.256
Items	10	482.0	48.1					
Error	810	58.3	.131					

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and of Administrators in Low Financial Quartile.

Source of Variation	D. F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teacher	1080	19100	1.77	.648	.284	< .01	1.36	.158
Items	6	762	127.					
Error	6480	4040	.624					
Administrators								
Administrators	81	119.	1.47	.641	2.78	< .01	1.34	.162
Items	6	74.4	12.4					
Error	486	257.	.529					

Continued

Analysis of Variance Reliability Tests for Category VII Scores (The Teacher and Teaching Methods) of Teachers and of Administrators in Low Financial Support Quartile.

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	1080	2990	2.77	.779	4.52	< .01	1.88	.068
Items	14	2940	210.					
Error	15120	9270	.613					
Administrators								
Administrators	81	167	2.06	.762	4.20	< 0.01	1.79	.080
Items	14	283	20.2					
Error	1134	557	.491					

APPENDIX O

ANALYSIS OF VARIANCE RELIABILITY TESTS FOR TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN DISTRICT NO. 2 (HIGH FINANCIAL SUPPORT QUARTILE)

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in District No. 2 (High Financial Support Quartile)

Source of Variation	D. F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers (N = 207)								
Teachers	206	1050	5.09	.906	10.7	< .01	3.11	.003
Items	55	5130	93.3					
Error	11330	5410	.477					
Administrators (N = 23)								
Administrators	22	67.6	3.07	.862	7.25	< .01	2.50	.017
Items	55	645	11.7					
Error	1210	513	.424					

Analysis of Variance Reliability Tests for Category I Scores (Student's Level of Knowledge and Attitudes) of Teachers and of Administrators in District No. 2 (High Financial Support Quartile)

Source of Variation	D. F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	206	150	.729	.441	1.79	< .01	.888	.268
Items	5	346	69.2					
Error	1030	419	.407					
Administrators								
Administrators	22	10.7	.488	.421	1.73	> .01 NS	.853	.278
Items	5	10.6	2.12					
Error	110	31.1	.283					

Continued

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and Administrators in District No. 2 (High Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	206	376	1.83	.672	3.05	< .01	1.43	.143
Items	10	180	18.0					
Error	2060	1230	.599					
Administrators								
Administrators	22	41.1	1.87	.708	3.43	< .01	1.56	.118
Items	10	26.4	2.65					
Error	220	120	.545					

Analysis of Variance Reliability Tests for Category III Scores (Curriculum) of Teachers and of Administrators in District No. 2 (High Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	206	196	.952	.523	2.09	< .01	1.05	.229
Items	4	96.8	24.2					
Error	824	374	.454					
Administrators								
Administrators	22	16.2	.736	.392	1.64	> .01 NS	.803	.289
Items	4	24.2	6.06					
Error	88	39.4	.447					

Continued

Analysis of Variance Reliability Tests for Category V Scores (Socio-cultural Composition of the Community) of Teachers and of Administrators in District No. 2 (High Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	206	35.1	.170	.432	1.76	< .01	.873	.273
Items	10	1860	186.					
Error	2060	110	.055					
Administrators								
Administrators	22	3.26	.148	.448	1.81	> .01 NS	.902	.266
Items	10	2160	216					
Error	2060	98.9	.048					

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and of Administrators in District No. 2 (High Financial Support Quartile)

Teachers								
Teachers	206	315	1.53	.651	2.86	< .01	1.36	.158
Items	6	162	27.0					
Error	1236	660	.534					
Administrators								
Administrators	22	23.5	1.07	.654	2.89	< .01	1.37	.156
Items	6	39.5	6.59					
Error	132	48.8	.369					

Continued

Analysis of Variance Reliability Tests for Category VII (The Teacher and Teaching Methods) of Teachers and of Administrators in District No. 2 (High Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	206	432	2.10	.787	4.69	< .01	1.92	.063
Items	14	1390	99.1					
Error	2884	1290	.448					
Administrators								
Administrators	22	26.2	1.19	.668	3.01	< .01	1.42	.145
Items	14	189	13.5					
Error	308	122	.395					

APPENDIX P

ANALYSIS OF VARIANCE RELIABILITY TESTS FOR TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN DOSTRICT NO. 15 (LOW FINANCIAL SUPPORT QUARTILE)

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in District No. 15 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers (N = 71)								
Teachers	70	472	6.74	.912	11.4	< .01	3.22	.002
Items	55	1470	26.8					
Error	3850	2280	.593					
Administrators (N = 5)								
Administrators	4	2.52	.630	.490	1.96	> .01 NS	.981	.246
Items	55	181	3.29					
Error	220	70.7	.321					

Analysis of Variance Reliability Tests for Category I (Student's Level of Knowledge and Attitudes) of Teachers and of Administrators in District No. 15 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	70	56.8	.811	.165	1.20	> .01 NS	.445	.361
Items	5	62.4	12.5					
Error	350	237.	.677					
Administrators								
Administrators	4	1.13	.283	Negative				
Items	5	7.90	1.58					
Error	20	5.27	.263					

Continued

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and of Administrators in District No. 15 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	70	146	2.09	.637	2.76	< .01	1.33	.164
Items	10	95.3	9.53					
Error	700	529	.756					
Administrators								
Administrators	4	6.11	1.53	.799	4.97	< .01	1.99	.055
Items	10	21.0	2.10					
Error	40	12.3	.307					

Analysis of Variance Reliability Tests for Category III (Curriculum) of Teachers and of Administrators in District No. 15 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	70	108.	1.54	.659	2.94	< .01	1.39	.151
Items	4	70.3	17.6					
Error	280	147	.525					
Administrators								
Administrators	4	4.56	1.14	.746	3.93	> .01 NS	1.71	.092
Items	4	10.2	2.54					
Error	16	4.64	.290					

Continued

Analysis of Variance Reliability Tests for Category V Scores (Socio-cultural Composition of the Community) of Teachers and of Administrators in District No. 15 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	70	19.2	.275	.490	1.96	< .01	.980	.246
Items	10	4220.	422.					
Error	700	539	.770					
Administrators								
Administrators	4	.357	Negative	Negative				
Items	10	.434	-					
Error	40	8.84						

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and of Administrators in District No. 15 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	70	100	1.43	.621	2.64	< .01	1.28	.175
Items	6	95	15.8					
Error	430	227	.541					
Administrators								
Administrators	4	3.03	.757	.484	1.94	> .01 NS	.969	.249
Items	6	14.3	2.39					
Error	24	9.37	.390					

Continued

Analysis of Variance Reliability Tests for Category VII Scores (The Teacher and Teaching Methods) of Teachers and of Administrators in District No. 15 (Low Financial Support Quartile)

Source of Variation	D. F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	70	153	2.18	.735	3.78	< .01	1.67	.098
Items	14	325	23.2					
Error	980	566	.577					
Administrators								
Administrators	4	1.55	.387	.277	1.38	> .01 NS	.619	.329
Items	14	45.5	3.25					
Error	56	15.7	.280					

APPENDIX Q

ANALYSIS OF VARIANCE RELIABILITY TESTS OF TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN DISTRICT NO. 23 (LOW FINANCIAL SUPPORT QUARTILE)

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in District No. 23 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers (N = 61)								
Teachers	60	333	5.54	.886	8.81	< .01	2.79	.008
Items	55	1240	22.6					
Error	3300	2080	.629					
Administrators (N = 4)								
Administrators	3	61.2	20.4	.980	50.0	< .01	7.00	.00001
Items	55	98.3	1.79					
Error	165	227	.408					

Analysis of Variance Reliability Tests for Category I Scores (Student's Level of Knowledge and Attitudes) of Teachers and of Administrators in District No. 23 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	60	71.9	1.20	.518	2.07	< .01	1.04	.232
Items	5	16.5	3.30					
Error	300	1730	.578					
Administrators								
Administrators	3	1.67	.556	Negative				
Items	5	.883	.167					
Error	15	11.3	.753					

Continued

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and of Administrators in District No. 23 (Low Financial Support Quartile

Source of Variation	D. F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	60	113	1.88	.649	2.85	< .01	1.36	.158
Items	10	54.7	5.47					
Error	600	396	.661					
Administrators								
Administrators	3	23.5	7.84	.978	45.0	< .01	6.63	.00001
Items	10	4.41	.441					
Error	30	5.23	.174					

Analysis of Variance Reliability Tests for Category III (Curriculum) of Teachers and of Administrators in District No. 23 (Low Financial Support Quartile)

Source of Variation	D. F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	60	90.6	1.51	.588	2.43	<.01	1.20	.194
Items	4	60.5	15.1					
Error	240	148.	.621					
Administrators								
Administrators	3	9.20	3.07	.774	4.43	> .01 NS	1.85	.072
Items	4	1.70	.425					
Error	12	8.30	.692					

Continued

Analysis of Variance Reliability Tests for Category V Scores (Socio-cultural Composition of the Community) of Teachers and of Administrators in District No. 23 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	60	12.7	.212	Negative				
Items	10	2990	299.					
Error	600	383	.638					
Administrators								
Administrators	3	1.08	.362	Negative				
Items	10	266	26.6					
Error	30	20.7	.690					

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and of Administrators in District No. 23 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	60	97.0	1.62	.554	2.24	< .01	1.11	.215
Items	6	43.9	7.32					
Error	360	260	.722					
Administrators								
Administrators	3	13.4	4.48	.943	17.6	< .01	4.08	.00009
Items	6	5.43	.905					
Error	18	4.57	.254					

Continued

Analysis of Variance Reliability Tests for Category VII Scores (The Teacher and Teaching Methods) of Teachers and of Administrators in District No. 23 (Low Financial Support Quartile)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers								
Teachers	60	153	2.55	.756	4.09	< .01	1.76	.084
Items	14	309	22.1					
Error	840	522	.622					
Administrators								
Administrators	3	20.6	6.87	.940	16.6	< .01	3.95	.0001
Items	14	20.7	1.48					
Error	42	17.4	.414					