THE DETERMINATION OF THE DISCRIMINATION AND RELIABILITY INDICES OF THE EDUCATIONAL CHARACTERISTICS CRITERION WITH IMPLICATIONS CONCERNING EDUCATIONAL COST-QUALITY RELATIONSHIPS

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ABSTRACT

THE DETERMINATION OF THE DISCRIMINATION AND RELIABILITY INDICES OF THE EDUCATIONAL CHARACTERISTICS CRITERION WITH IMPLICATIONS CONCERNING EDUCATIONAL COST-QUALITY RELATIONSHIPS

by Arthur D. Berg

The purpose of this study is to determine the discrimination and reliability indices of the Educational Characteristics Criterion and to make implications concerning the relationships between educational cost and quality.

The Educational Characteristics Criterion is an instrument designed to measure the quality of an educational program and is based upon the assumption that educational quality may be defined as those educational characteristics of a school district which are perceived by educational specialists as being effective in accomplishing the purposes of American public school education. In the version of the instrument used, fifty-six educational characteristics were assigned to the seven following categories: (1) student's

level of knowledge and attitudes, (2) community attitudes, (3) curriculum, (4) use of facilities, (5) socio-cultural composition of the community, (6) administration and supervision, and (7) the teacher and teaching methods.

The literature and research findings concerning the inter-relationships between educational cost factors and educational quality were reviewed, and it was decided to test the discrimination of the instrument on the basis of expected differences in educational quality according to degree of financial support as well as expected agreement between teachers and administrators concerning the degree of educational quality which is present in their school districts. A sample of 871 teacher respondents and 82 administrator respondents was selected from two Michigan public school districts in the fourth quartile (exclusive of Detroit) of each cost factor of school membership size, ability (state equalized valuation per pupil), effort (mills for operation), and expenditure per pupil for current operation. A sample of 1,091 teacher respondents and 106 administrator respondents was selected from thirty-nine Michigan public school districts in the first quartile (exclusive of Detroit) of each of these cost factors.

Five general hypotheses were developed and tested:

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 Michigan 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 high financial support quartile, within the low financial support quartile, within 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. The Hoyt analysis of variance method was used to estimate reliability from the consistency of individual performance upon the test items. The point biserial correlation coefficient was used to determine the positive discrimination power of the individual educational characteristics with

respect to the total score and to their related category scores.

The following conclusions were reached:

1. The Educational Characteristics Criterion is an excellent measure of quality in public school districts and it can discriminate positively between districts having high financial support and those having low financial support. The principal findings indicate that according to total scores, each of seven category scores, and forty-one of fifty-six individual educational characteristic scores of either teachers' or administrators' educational quality is present in significantly higher degree in high financial support districts than in low financial support districts.

2. The Educational Characteristics Criterion non-discrimination indicates agreement between teachers and administrators concerning educational quality within the high financial support quartile and within the low financial support quartile which is expected from certified public school personnel having a similar professional frame of reference in terms of training and expectations, and this conclusion is supported by total scores, the majority of category scores, and twenty-four of fifty-six individual educational characteristic scores. Significant discrimination

on other scores indicates a tendency for administrators to over-value or under-value certain educational characteristics in relation to teachers' valuing of these characteristics, and this occurrence varies according to the high or low financial support quartile.

3. The reliability of Educational Characteristic Criterion total scores ranges from 0.89 to 0.95 according to teachers or administrators within high or low support quartiles. The reliability of category scores is 0.61 and above, category V excepted, according to teachers or administrators within high or low support quartiles. Reliability tests within individual large and small districts indicate wide variations and the need for an adequate number of respondents. The total scores of teachers (at least ten per district) had a reliability of 0.90 to 0.93 in small and large districts, and several category scores appeared to have adequate reliabilities. Only in large districts which had a considerable number of administrator respondents did the scores of administrators have high reliability (category V excepted), total score reliability being 0.91 and category score reliability being from 0.68 to 0.83.

4. Each of the fifty-six individual educational characteristic scores except two had adequate positive discrimination ($p < .01$) with respect to the total score and its related category score.

The principal implications of the results of this study concern (1) the need to use all possible means of increasing the financial support of education in order to raise the degree of educational quality in public school districts and (2) the need to correct the overvaluing and undervaluing tendencies of administrators in relation to teachers' valuing by developing better communication facilities which will increase the likelihood of generating congruent expectations about education among the professional school staff and between the professional school staff and the parents and patrons of the school district.

Twenty-four recommendations were made concerning (1) development of educational quality by means of adequate financial support, (2) development of favorable community attitudes, (3) development of administrator-teacher empathy by communication, (4) administrative evaluation of student's level of knowledge and attitudes, (5) suggested action for colleges of education, and (6) development and use of the Educational Characteristics Criterion.

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CHAPTER I

THE PROBLEM

Purpose of the Study

The purpose of this study is to determine the discrimination and reliability indices of the Educational Characteristics Criterion, an instrument designed to measure the quality of an educational program.

Importance of the Study

The application, testing, and analysis of a proposed evaluation instrument will serve to meet a need for a comprehensive but practical device to appraise the quality of an educational program in a given school district. The conclusions of approximately twenty-five years of research show that major quality related factors of expenditure, school practices, and community characteristics account for approximately two-thirds of the variance of the difference in educational quality which is defined by the concept of adaptability or responsiveness to innovations of good educational practice by school districts. More research needs to be done toward the identification of both non-cost-related and cost-related educational quality factors using

quality measures which are based upon criteria other than adaptability and are reflective of the judgments of educational specialists. It is expected that conclusions from this kind of research will provide the basis for intelligent decisions by school administrators toward effective and efficient educational processes.

There are two main stimulating forces underlying this study: (1) the tremendous concern of professional educators and lay citizens with the function of education in our society, and (2) the acute need for better means of evaluation with supporting instrumentation in order to accurately assess the effectiveness of the educational effort in school districts. The intensified concern of the general public with education appears to have come as a result of new and baffling life problems associated with the dynamic forces of (1) great population expansion, (2) technological growth, (3) discovery of new forms of energy, (4) the extension of knowledge, (5) the rise of new nations, and (6) international rivalry of ideologies. It is necessary that higher levels of understanding and skill be attained by our present public school students in order that they may make wise decisions now and in the complex life that they will experience as adult citizens.

There are many difficulties associated with the task of defining and measuring the degree of educational quality. It is evident that (1) adequate definition of educational quality has not been very successful in the past, (2) concepts of educational quality are always changing, and (3) the probability of consensus as to educational quality is low. The difficulty of securing consensus is all the more apparent when one considers that there are many forces which strongly influence educational quality such as (1) legislation by government, (2) legal structure, (3) traditional values, and (4) public opinion.

The demands of the present situation include the consideration of both quantity and quality of education. Some basic questions which are being raised by the public are: (1) What are the defensible limits of public education?, (2) How much should the public schools cost?, and (3) Who shall pay for public education and how? The cost of needed programs just to maintain the present quality of education will be extremely high in terms of present financial effort and almost prohibitive in terms of possible improved educational quality based upon present assumptions of the positive relationship between expenditure and quality.

However, it is expected that if the financial load can be equitably levied, the total national economy can support even an enriched quality educational program.

In summary, the development of an adequate measure of educational quality and its testing to identify relationships between desirable educational characteristics and educational cost factors will take both the problem of excellence in education and the problem of the determination of optimum educational quality-quantity relationships out of the arena of forensics and place it squarely in the realm of good educational practice. In so doing, it will systematically establish a better basis for intelligent decisions in education.

Rationale

Educational quality may be defined as 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 school education. Quality is perceived differently by each individual because of goals, values, and experiences. Because of the lack of commonality in the effect of these influential factors on individual perception, there is

difficulty in establishing a generally acceptable definition of educational quality among educators and laymen. For the purposes of this study the educational characteristics of school districts that are used as a definition of quality are those for which there have been established a significantly high agreement among specialists in educational programs. It is assumed that certificated personnel may perceive accurately the educational characteristics of their school district. Agreement regarding educational quality is expected from certificated school personnel who have a generally similar frame of reference in terms of training and professional expectations. It is also assumed that the educational characteristics may be assigned to the following categories: (1) use of facilities, (2) student's 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.

School district cost factors may be categorized as to size, effort, ability, and expenditure per pupil. Size of school district is defined as the total number of public school pupils enrolled in grades from kindergarten through

the twelfth grade. It is assumed that size is an important factor affecting educational quality. A small school district tends to provide an educational program of a narrower scope than a large district. There is usually a smaller number of specialists on the teaching and non-teaching staff of a small school district which reduces the degree of educational quality that may be possible in a large school district. Effort is a measure of local taxation and is defined in this study as the operational millage levied on the state equalized valuation of the school district. It is assumed that effort correlates highly with educational quality. Ability or wealth, which may be viewed as potential expenditure, also is assumed to correlate positively with quality. It is defined as the total state equalized valuation of property per pupil being educated within the school district. Expenditure per pupil reflects to a great degree the actual per pupil costs of educating a pupil after he arrives at school. In Michigan, under provisions of law, per pupil costs for tuition purposes[1] are computed by dividing the "Total

[1]The State of Michigan, Section 14 of Public Act 312 (School Aid Act), 1957.

Current Operation" expense exclusive of "Board Salaries" (Code 311 of the Michigan Department of Public Instruction Annual Statistical and Financial Report, 1960), "Tuition Expense" (Code 326), and "Transportation Expense" (Codes 361-1 and 361-2) by the total public school membership on the fourth Friday following Labor Day of each year.[2] Expenditure per pupil is assumed to be related to educational quality.

The basis for the assumptions regarding the relationship of educational quality to factors of size, effort, ability, and expenditure are based on the collected findings in this area of research.[3]

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 Michigan public school districts (K-12) which are classified on the educational cost factors of size, effort, ability, and expenditure.

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[2]The State of Michigan, Section 12 of Public Act 312 (School Aid Act), 1957, amended by Public Act 267, 1959.

[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.

Operational Hypothesis H1a

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 Hypothesis 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 Hypothesis 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 Hypothesis 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 Hypothesis 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 Hypothesis 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 individual large school districts, and within individual small school districts.

Operational 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.

Operational 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.

Operational 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.

Operational Hypothesis H5a

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

Operational Hypothesis 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 of districts and within the low financial support quartile of districts.

Operational Hypothesis H6a

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

Operational Hypothesis H6b

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

Operational Hypothesis H6c

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

Operational Hypothesis H6d

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

Operational Hypothesis H7a

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

Operational Hypothesis H7b

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

Operational Hypothesis H7c

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

Operational Hypothesis H7d

There will be 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 Hypothesis H8a

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

Operational Hypothesis H8b

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

Operational Hypothesis H8c

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

Operational Hypothesis H8d

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

Operational Hypothesis H9a

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

Operational Hypothesis H9b

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

Operational Hypothesis H9c

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

Operational Hypothesis H9d

There will be 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 of the Educational Characteristics Criterion will have adequate positive discrimination power with respect to the total quality score and to their related category quality scores.

Operational Hypothesis H10

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

Operational Hypothesis H11

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

The Scope and Delimitations of the Study

This study is delimited in the following ways:

1. The major data of this study were derived from the Annual Statistical and Financial Reports to the Michigan Department of Public Instruction for 1960, computations of per pupil costs by the Department, computations by the Michigan Education Association Research Division from official reports, and responses to the Educational Characteristics Criterion by Michigan certificated school personnel.

2. The analyses of this study concern the determination of reliability and discrimination indices of the instrument, the determination of relationships between individual educational characteristic scores, category quality scores, total quality scores and certain educational cost factors as well as the determination of differences in the relative perceptions of quality by teachers and administrative personnel. The study is limited to data from the high and low

educational financial support quartiles of school districts which are classified on the basis of four educational cost factors.

3. This study treats the selected financial factors and educational quality factors and thus does not intend to be comprehensive.

4. The conclusions of the study regarding the relationships of educational quality factors and educational cost or financial support factors are to be interpreted in the sense that the relationships are associational and not causal.

Definition of Terms

Public schools. Public schools, as used in this study, refer to the Michigan public elementary and secondary schools in school districts which maintain grades of kindergarten through twelfth grade. Those schools which are fully subsidized from federal or state funds, and whose programs are under federal or state supervision are excluded.

School district. A school district is a quasi-municipal corporation created by the Michigan state legislature for the purpose of operating and maintaining public schools having grades of kindergarten through twelfth

grade, 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 having kindergarten through twelfth grades which are classified as either highest or lowest quartile of all Michigan public school districts, exclusive of the City of Detroit, according to each of the four factors of educational cost, namely, size, ability, effort, and expenditure per pupil. High and low financial support districts are used as synonymous terms.

Public school finance system. The revenue and disbursement system utilized by the state to support its elementary and secondary schools.

State aid or school support. The distribution of the money collected by the state on a state-wide basis to local school districts in accordance with a statutory formula.

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

Mill. A mill is the value of a tenth of a cent or thousandth of a dollar.

Size. The total public school membership expressed in the number of children of a high school district from kindergarten through the twelfth grade. All pupils to be counted in membership shall be at least five years of age on December first, and under twenty years of age on September first of the school year, and the full-time membership count is the number of pupils enrolled in regular daily attendance on the fourth Friday following Labor day of each year.[4] The term need is used interchangeably with size in the review of related literature.

Financial ability. The state equalized valuation (SEV) expressed in dollars of a school district divided by the total resident membership including resident pupils attending any public school is defined as financial ability. The figure used is actually the number of dollars of state equalized valuation behind each resident pupil member.

Financial effort. The tax rate expressed in mills levied in a public school district for the purposes of current operation of the school district. The term may also have varying meanings as specified in the review of related literature.

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[4]The State of Michigan, Section 12 of Public Act 312 (School Aid Act), 1957, amended by Public Act 267, 1959.

Financial expenditure. The cost per pupil computed by dividing the total current operation expense exclusive of school board salaries, tuition expense, and transportation expense (Codes 311, 326, 361-1, and 361-2 of the Michigan Department of Public Instruction Annual Statistical and Financial Report, 1960) by the total public school membership (as defined under Size). This term may also have other meanings as specified in the review of related literature.

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 school education. The characteristics are specifically defined in the Educational Characteristics Criterion for purposes of this study.

Total quality score. The sum of the weighted item responses to the Educational Characteristics Criterion.

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) student's level of knowledge,

(3) socio-cultural composition of community, (4) administration and supervision, (5) curriculum, (6) the teacher and teaching methods, and (7) community attitudes. The listing of the educational characteristics which are included in each category is presented in Chapter III.

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

Organization of the Remainder of the Thesis

In Chapter II the review of related literature is presented. The review includes philosophical statements about educational quality, instrumentation used in studies of educational quality, and descriptions of significant empirical studies of educational quality and its relationship to financial, school, and community factors.

In Chapter III the procedure and methodology of the study are presented in which there is a detailed description of the quality criterion, cost factors, sample, design of the study, and proposed analysis.

In Chapter IV the analysis of the data is presented.

In Chapter V the conclusions, their implications, and recommendations for further research are reported.

CHAPTER II

RELATED LITERATURE

The literature concerning the definition of educational quality and its relation to educational cost factors has been reviewed under three categories: (1) philosophical statements about educational quality, (2) instruments used to measure educational quality, and (3) related empirical studies. An effort has been made to give consideration to differing views of educational authorities in order to present the broad scope and complexity of the problem of evaluating educational quality and the determination of its relationship to financial support.

Philosophical Statements

The Nature of Evaluation

The importance of the prevailing philosophy concerning educational quality in local school districts and of the implementation of the principle of decentralization or local control may be viewed in the evaluation criteria developed by a national study group:

> The study has developed a proved way of recognizing that schools which are quite different may be equally

> good. This involves the basic principle that a school should be evaluated in terms of what it is striving to accomplish (its philosophy and objectives) and in terms of the extent to which it is meeting the needs of the students who are enrolled or for whom it is responsible.[1]

Evaluation is a process of making value-judgments on the basis of pertinent information about significant aspects of the educational program. The changing perceptions of the role of the school has influenced evaluation. The school has increasingly served as a vital force in citizens' efforts to improve life within the community rather than just dispense knowledge, skills, and abilities within a formal academic curriculum. The values and wishes of the local community have been increasingly considered in the determination of local school programs. Burton and Brueckner have defined the area of modern evaluation as including: (1) scope and quality of goals, purposes, and functions of the total educational program, (2) progress toward these goals in terms of growth, and (3) appraisal of all elements of the total teaching-learning situation.[2]

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

[2]W. H. Burton and L. J. Brueckner, Supervision: A Social Process (New York: Appleton-Century-Crofts, Inc., 1955), pp. 206.

Philosophical View Related to Democracy

Johns and Morphet have identified some concepts which they believe are generally related to democratic ideas regarding equal educational opportunity held by the majority of the nation's citizens. These include: (1) provision for educational opportunity and support through the junior college level, (2) provision for educational opportunity to meet individual needs as well as societal needs, (3) financial support of education based upon the ability of the individual citizen, and (4) use of national resources to provide educational opportunities regardless of the state or community in which citizens live.[3]

Inconsistency between Democratic Philosophy and Practices

Johns and Morphet have pointed out some inconsistencies between democratic concepts and practices related to the provision of educational opportunities and financial support such as: (1) wasted human resources evident in the large pupil drop-out rate, (2) the tremendous variation in scope and quality of educational opportunity in the nation,

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[3] R. L. Johns and E. L. Morphet, Financing the Public Schools (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1960), pp. 4-7.

and (3) lack of individual citizen support according to financial ability.[4]

Some of the reasons for the differences between concepts and practices are: (1) unresolved conflicts of opinion regarding the place and role of public education, (2) reliance upon property taxes as the chief source of revenue of school support, (3) inequities in local ability, (4) obsolete and antiquated district structure, (5) tendency to continue existing practices regardless of their justification or desirability, and (6) ineffective leadership or inefficient management.[5]

A study of all the forty-eight states over a decade ago showed wide variation in practices and provisions made by states for education and sharp differences were noted in educational services and practices in all aspects of school administration and operation.[6] The study showed similarities in general purposes and attempts to assure adequate educational opportunities.[7] The major structural

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[4] Ibid., pp. 7-8.

[5] Ibid., pp. 8-11.

[6] The Council of State Governments, Francis S. Chase, Director, The Forty-Eight State School Systems: A Study of the Organization, Administration, and Financing of Public Elementary and Secondary Education (Chicago: The Council, 1949), pp. 5-6.

[7] Ibid., pp. 6-7.

defects in educational organization and administration were identified as being: (1) constitutional and statutory provisions which raise barriers to capable educational leadership, (2) unsatisfactory local administrative units, and (3) methods of distributing state school funds.[8]

Need for Clarification of the Concept of Equal Educational Opportunity.

In the light of the preceding studies it is evident that the national ideological concept of equality of educational opportunity regarding the scope and quality of educational services has not been adequately implemented. The concept has been subjected to varying interpretations as pointed out by Burke:

> Equality of educational opportunity is used to rationalize school finance programs. It often is implied or asserted that finance per se will result in attainment of this ideal. Although finance, if accompanied by other essential steps, can make possible improved school programs, by itself it will not produce equality of educational opportunity. Indeed, equality of educational opportunity is not attainable in a single school system. It is not even desirable in a decentralized school system. What is desirable is a rising standard of educational service, not equality of service.[9]

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[8] Ibid., pp. 8-9.

[9] Arvid J. Burke, Financing Public Schools in the United States (Revised edition, New York: Harper and Brothers, 1957), p. 561.

The concept of equal educational opportunity is one that is not readily understood by the general public which tends to think of it in terms of quantity or scope of services. A clarifying view which points out the fact that the same educational experiences do not insure equal opportunity is made by Moehlman:

> Equalization of educational opportunity does not mean a leveling process but exactly the reverse. It actually demands a differentiated program adjusted to individual capacities. A satisfactory educational plan for the child of sound body or mind, or both. The exceptionally gifted child in like manner requires a specially enriched program for his greatest possible growth.[10]

Reconsideration of the Principle of Decentralization and Local Control

In recent years there has been an increasing number of educators who have advocated a move toward increased centralized control of educational programs and finance. The effect of contemporary national and international events as well as public impatience with the tremendous lag between educational research findings and school practices have stimulated this view. Kochnower has pointed out the effect of the fragmentation of authority inherent in the present

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[10] Johns and Morphet, op. cit., pp. 7-8.

relationship between the state and the local school district as being a reason for the lag between goals and practices as well as sluggish evaluative procedures.[11]

The research findings of Mort and Cornell provide evidence for the presence of educational lag according to the following statement:

> . . .we see that it is not unusual for a period of fifty years to elapse between the realization of need and the invention and first practical introduction of an acceptable way of meeting it.[12]

Burke has pointed out the tendencies toward centralization of educational control in connection with equalization programs between state and local school districts and he has stressed its possible detrimental effects upon educational improvement, adequate level of support, and individualization of local district programs. He states that "centrally directed improvements are slow-moving at best and hardly lead to a balanced improvement of the whole school program."[13] He recommends a finance program which

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[11]William Kochnower, "The Case for Centralization," Phi Delta Kappan, XV (January, 1961), pp. 393-394.

[12]Paul R. Mort and Francis G. Cornell, American Schools in Transition (New York: Bureau of Publications, Teachers College, Columbia University, 1941), p. 405.

[13]Burke, op. cit., p. 586.

will take into consideration nine major differences between school districts in the areas of values, needs, community differences, attitudes, and financial factors and he emphasizes that the objective of central finance is not the removal of inequalities in educational opportunities which must be handled on the local decentralized level.[14]

Criticism of Present Educational Quality

Freeman, after extensive studies in school finance, stated the thesis that more money may well be needed to improve teachers' salaries and to reduce the classroom shortage, but that much could also be done to get more solid and real educational progress from existing personnel, equipment, and buildings if we were willing to face up to some of the cold, hard facts of our public education program quality. He feels that there is surprisingly little evidence that present quality of public school education is proportionate to the number of dollars spent.[15] Regarding public support of education he says:

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[14] Burke, op. cit., p. 559.

[15] U. S. Congressional Record, 86th Congress, 1st Session, 1959, CV, Part 4, p. 5355.

> The American people have loyally and faithfully supported their public schools. The record makes no persuasive case for holding insufficient funds responsible for shortcomings in the educational product.[16]

Freeman makes a plea for individualization of public school programs in respect to the according of honor and recognition to those students who excel in their studies and in respect to payment of teachers' salaries on a merit basis. He feels that factors such as these will be of the greatest importance irrespective of the factor of financial support.[17]

The National Education Association has made a rebuttal of Freeman's views,[18] specifically of his book.[19] It is emphasized that he is overly concerned with financial cost of education as related to other governmental costs rather than with cost as related to the essential needs of American society living as a free nation and having a free economy.[20] The National Education Association takes issue with Freeman's citation of the Soviet Union's educational methods as

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[16] Ibid., p. 5356.

[17] Ibid., p. 5358.

[18] National Education Association, "A Few Comments on School Needs in the Decades Ahead," Special Memo, July, 1958.

[19] Roger L. Freeman, School Needs in the Decades Ahead, Vol. I: Financing the Public Schools (Washington: The Institute for Social Science Research, 1958).

[20] NEA, op. cit., p. 1.

well as his use of certain statistics in providing a basis for his conclusions.[21]

Eurich also considers the relationship of educational quality and quantity to financial support and states the basic contemporary issue in this area in saying:

> Will we try to solve our education problems by appropriating more money to do more of the same things in the same ways we have been doing them in the past in our schools and colleges, or will we try to find more effective, more efficient, and more economic procedures?[22]

Conceptions of Desired Educational Quality

Molnar makes a plea for greater intellectualism in the public school educational programs and states the three basic premises for the restoration of learning as being: (1) the need for the school to be an artificial and distinct society, (2) the need for the employment of the Socratic method of inquiry in order to test concepts and precepts, and (3) the need to study our Western cultural heritage.[23]

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[21] NEA, op. cit., p. 1.

[22] Alvin C. Eurich, "Money Isn't Everything," in Crucial Issues in Education, ed. Henry Ehlers and Gordon C. Lee (New York: Henry Holt and Company, 1959), pp. 246-249.

[23] Thomas Molnar, The Future of Education (New York: Fleet Publishing Corporation, 1961), pp. 149, 152, 157.

Bertocci attempts to answer the question which is so popular at the present time--what is education for quality? He believes that our perplexities about education and schooling stem from underlying assumptions about excellence, especially the reliance upon security emphasized in the philosophical thinking of Plato, Aristotle, and thinkers in the Judeo-Christian tradition.[24] Bertocci would steer away from this type of security toward an insecurity which promotes individual creativity that is truly realistic to man's nature and running counter to the conforming tendencies of the modern age.[25]

Melby makes a plea for a new strategy in the form of a really great education where changes must be major ones which stress values rather than just factual knowledge.[26] He states the frightening alternatives which confront mankind in the thermonuclear age and raises the question as to whether we are equal to the demands of creating a new educational program.

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[24]Peter A. Bertocci, Education and the Vision of Excellence (Boston: Boston University Press, 1960), p. 22.

[25]Ibid., p. 26.

[26]Ernest O. Melby, The Education of Free Men, Horace Mann Lecture (Pittsburgh: University of Pittsburgh Press, 1955), p. 12.

Di Carlo has described an educational model which would include the three requisites of (1) a philosophy, (2) an attitude, and (3) a method of problem solving.[27]

Educational Quality as Viewed by the Educational Policies Commission.[28]

The Educational Policies Commission representing the National Education Association and the American Association of School Administrators has issued a statement which holds that quality of education must be considered as the performance of the school district in the light of the present situation and in terms of its emerging changes as well as in terms of the relation of ideal circumstances to existent possibilities in actual circumstances. The principles of universality and diversity are upheld. The necessity for maintaining a minimum financial level of support to insure the possibilities of high quality of education is stressed. It is emphasized that there be a vigorous public commitment to education in each locality which is based on understanding of what education can do and what good schools are

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[27]Louis M. Di Carlo, Our Educational Dilemma, J. Richard Street Lecture (Syracuse: Syracuse University Press, 1959), p. 12.

[28]National Education Association, Quality in Education, A Report of the Educational Policies Commission (Washington: National Education Association, 1959).

like since local school district effort largely determines educational quality.

Definition of Educational Quality Based upon Recent Studies[29]

Trump and Baynha proposed guides for better schools based upon the recent experimental studies since 1956 in nearly one hundred junior and senior high schools across the United States directed by a commission which was established to seek solutions to the nation-wide shortage of teachers and improvement of educational quality. The authors pointed out the following three reasons for their considerable doubt as to the readiness of the modern public school to train youth for the future which will demand unprecedented many-sided solutions by citizens to national and international problems: (1) inflexibility of traditional practices, (2) reliance on improvement of education by refinement rather than by redefinition, and (3) limited interpretation of the concept of universal education. The Commission has stated the needs in all of the component parts of the school based upon research findings. Students need study skills,

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[29] J. Lloyd Trump and Dorsey Baynha, Focus on Change: Guide to Better Schools (Chicago: Rand McNally and Company, 1961), p. 4.

individual responsibility, inquiring mind, discussion skills, satisfaction in learning, and talent for effectual human relations.

The Report of the White House Conference on Education in 1956 described areas of consensus of the meeting and their priority of need:

> The development of the intellectual powers of young people, each to the limit of his capacity, is the first responsibility of the schools. Beyond this basic task, all kinds of instruction are not equally important for all children, and their importance varies from community to community. A primary responsibility of any local school authority is to establish priorities of significance among basic general education, specialized education of all kinds, and extra-curricular activities.[30]

Downey categorized the elements of the task of education which were expressed in the views of approximately twenty-seven outstanding authorities. On a logical basis he established the following mutually-exclusive dimensions:

A. Intellectual Dimensions
   1. Possession of Knowledge: A fund of information. Concepts.
   2. Communication of Knowledge: Skill to acquire, transmit.
   3. Creation of Knowledge: Discrimination and imagination.
   4. Desire for Knowledge: A love for learning.

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[30]The Committee for the White House Conference on Education, A Report to the President (Washington: U. S. Government Printing Office, 1956), p. 11.

B. Social Dimensions
   5. Man to Man: Cooperation in day-to-day relations.
   6. Man to State: Civic rights and duties.
   7. Man to Country: Loyalty to one's own country.
   8. Man to World: Interrelationships of peoples.

C. Personal Dimensions
   9. Physical: Bodily health and development.
   10. Emotional: Mental health and stability.
   11. Ethical: Moral integrity.
   12. Aesthetics: Cultural and leisure pursuits.

D. Productive Dimensions
   13. Vocation-Selective: Information and guidance.
   14. Vocation-Preparative: Training and placement.
   15. Home and Family: Housekeeping, do-it-yourself, family.
   16. Consumer: Personal buying, selling and investment.[31]

Summary

1. The controversy over the role of education in society which is probably as old as education itself has assumed major importance in recent years because of events which have led to its consideration as an instrument of national survival as well as an instrument of social purpose.

2. There is a considerable gap between the expressed philosophical views concerning education and the practices which implement the educational programs based on these philosophies. Lofty, emphatic statements of democratic

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[31]Lawrence W. Downey, The Task of Public Education: The Perceptions of People (Chicago: Midwest Administration Center, The University of Chicago, 1960), p. 24.

ideology appear simultaneously with wide variations in educational scope and quality as well as educational opportunity.

3. There appears to be a strong desire to modify the present system of controls between the state and local school districts as well as to consider federal educational support. The present reconsideration of the educational facets within the national democratic philosophy point up the apparent opposition of the principles of equal educational opportunity and decentralization of controls. Differences in educational opportunity appear to be inevitable in decentralized state school systems but valuable in that there is freedom for willing school systems to initiate experiments and new practices toward the eventual improvement of all school systems.

4. There appear to be greater differences of opinion regarding cost-quality relationships than regarding cost-quantity relationships. Many persons appear to agree that increasing the quality is likely to add somewhat to the cost, but few appear to agree that increasing the cost would add to the quality. There is great concern with possible future increases that will be needed in the financial support of education on the basis that these financial

increases will be proportionate to the continuing rise in enrollment. This concern appears to be even greater when consideration is given to the possible additional increases in future financial support which are calculated upon the assumption that school quality as well as general scope and level of services is positively related to expenditure.

5. Considerable attention has been given to the identification of the dimensions of educational tasks which may provide an aid to the clarification and resolution of educational issues which frequently arise from differences in educational philosophy. The problem of the definition of educational quality and its improvement is inseparably connected to the problem of the clarification of educational philosophy.

Instrumentation

The literature related to the instrumentation of educational quality research is reviewed within three categories: (1) measures used in evaluations based upon locally-defined objectives, (2) measures used in normative evaluations of many school districts, and (3) measures used in research concerning the effects of public school education on various aspects of adult life.

Introduction

Definitions of Measurement and Evaluation

The terms measurement and evaluation identify differences in point of view in gathering data about the attainment of a pupil or the quality of a school. Measurement is applied to the use of precise objective methods that yield quantitative data which can be expressed in standard units thus making direct comparisons with standards and norms possible. It may be defined as "the process of assigning symbols to dimensions of phenomena in order to characterize the status of a phenomenon as precisely as possible."[32] Evaluation is a process of making qualitative determinations. It may be defined as "the assignment of symbols to phenomena in order to characterize the worth or value of a phenomenon, usually with reference to some social, cultural, or scientific standard."[33] An evaluative standard is anything that is used as a basis for judging value or desirability. Sometimes a purpose is a standard. Evaluative

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[32] James M. Bradfield and H. Stewart Moredock, Measurement and Evaluation in Education (New York: The MacMillan Company, 1957), pp. 193-194.

[33] Ibid., p. 2.

standards may be set by arbitrary conceptions or custom, and the ultimate source is the value complex of our American culture with immediate sources in the various fields of philosophy, psychology, sociology, history, and other social sciences. Many standards are particular to local communities and schools. It is essential that any evaluative symbol such as those based upon rank or classification be related to unambiguous and appropriate statements about the quality gradations which they represent.

Two Approaches to Evaluation-- Product and Process

The evaluation of the educational product in terms of educational objectives or pupil growth and development is very limited because of the lack of objective measurements of the type suitable for normative treatment. School grades, attitude and adjustment inventories have limited value for comparative purposes because of critical variations in methods of application and interpretation. In an attempt to circumvent the barriers of insufficient or incomparable data, process evaluation has been used to study school quality relationships. This approach is concerned with the appraisal of all elements of the total teaching-learning situation that contribute to effective and

learning situation that contributes to effective use

with the appraisal of all elements of the total teaching-

school quality relationships. If... ...

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economical learning such as the organization and administration of the school, curriculum, teaching-learning process, instructional materials, equipment, facilities, community life, and school-community relations. Quality of the educational product may be estimated from the quality of the educational process with the limitation that the latter is one step more remote than the testing of pupils during or shortly following the educational experience and two steps away from the ultimate criterion of educational quality which is effective living as an adult. In a summary of important research concerning educational quality over a period of approximately forty years, it was found that sixty-four per cent of the studies used process-type quality indications such as length of school term, holding power, and long lists of descriptive items about curricula and methods; twenty per cent of the studies used achievement tests or product-type quality indications; and sixteen per cent of the studies used indications of the long-time effects of education, cultural, or economic productivity all of which might be classed as a type of product quality evaluation.[34] One of the important tasks of present-day

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

education is to find the factors which influence the educational product. The identification, measurement, and relating of these critical factors or dimensions to educational objectives in the form of measurable and comparable units will provide the means to enhance the growth of the individual pupil and the school.

Evaluation of Quality Based Upon Locally Defined Objectives

A widely used type of evaluation involves the basic principle that a school should be evaluated in terms of what it is striving to accomplish and the extent to which it meets the needs of pupils. An outstanding example of this type of evaluative instrument is the Evaluative Criteria of the National Study of Secondary School Evaluation.[35] 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 (27) giving criteria for analyzing and appraising (a) general principles underlying the program of the school, (b)

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

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 defined; (4) charts for statistical and graphic 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 done first by professional and lay citizens followed by a visiting committee of professional educators.

Another example of an evaluative instrument based upon locally-defined objectives is Evaluating the Elementary School: A Guide for Cooperative Study which is in five parts: (1) Formulation of values and goals, (2) Listing of functions, (3) School program, (4) Resources, and (5) Plans for improvement.[36] 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

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

means of improvement of the school program and use of resources. There is no quantitative or 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.

Quality Measures Providing Normative-Type Evaluation

Instruments Designed to Measure Individual Growth During School Years

Achievement tests such as the Iowa Test of Basic Skills[37] and Iowa Tests of Educational Development[38] attempt to determine how much a person has learned from some educational experience. The first instrument is designed for grades three through nine, and the second instrument is designed for grades nine through thirteen. Many subtest scores are provided by each instrument. A recent study included administration of these tests to approximately 70,000 pupils in grades five, eight, and eleven in nearly 100 school

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

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

systems.[39] The pupil achievement growth or gains was determined by subtracting the 1957-58 subtests results from those of the 1958-59 school year. It was found that the average resulting gain of 1.13 grades based on tested grades placed the research project schools about a third of a grade above the national average. It was also found that a significant relationship existed between mean gains and socio-economic level and community type in the 4th-5th and 10th-11th grade subtests but not in the 7th-8th grade subtests. There are limitations to the use of achievement gains as determined by achievement tests such as: (1) gains must be viewed in relation to the status score and the question--do poor achieving schools or pupils raise their scores easier than high achieving schools or pupils?; (2) input factors as socio-economic background must be taken into account; (3) possible inadequacy of test for excellent pupils; (4) loss of able students to private or parochial school which gives a false impression of the excellence of these schools; and (5) effect of drop-outs on average school achievement scores and on scores of lower ability group.

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[39] William D. Firman et al, Procedures in School Quality Evaluation, A Second Report of the Quality Measurement Project (New York: State Education Dept., 1961 [mimeo], Chapter 4).

Instruments Designed to Measure School Qualities Promoting Individual Growth

The Growing Edge[40] is an example of an instrument of this type, and it is based upon the concept of adaptability or the capacity of a school district to adapt to new purposes and practices which are considered worthwhile.[41] The assumption is made that adaptability is an important aspect of educational quality. The specific practices included in The Growing Edge are organized around four major areas of educational purpose: (1) teaching of basic skills, (2) teaching of the areas of knowledge, (3) discovery and development of special aptitudes of individuals through test and tryout, and (4) development of gross behavior patterns as citizenship, character, and thinking. Each item of the instrument is a description of a specific school practice, the high school form consisting of eighty-five items and the elementary form of sixty-four items. There is a provision for the substitution of practices on an equivalent or better basis, and practices may be scored positively if there is

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[40] P. R. Mort, W. S. Vincent, and C. A. Newell, The Growing Edge (New York: Metropolitan School Study Council, Teachers College, Columbia University, 1945).

[41] Mort and Cornell, American Schools in Transition, op. cit., p. 405.

evidence that they have existed although not necessarily directly observed during the rating period. The school system score is obtained by taking the average of all the individual item scores. Evaluators are required, one to a set of two pupils per 75 or 100 eleventh grade pupils. Fifth grade pupils in the elementary school are evaluated. Reliability coefficients (split-half) are 0.88 and 0.89 for high school and elementary forms respectively. Rough measures of validity exist in (1) intercorrelation of 0.68 between forms, and (2) correlations of 0.51 and 0.58 between another measure of adaptability, The Time Scale (described below) and high school and elementary forms.

The Time Scale is an instrument based upon the concept that an index of school system adaptability can be obtained by finding out at what stage of the diffusion of a given adaptation a community introduced it in their school system.[42] Communities are classified as pioneers, early followers, late followers, or laggards according to their degree of adaptability. To apply this instrument each of twenty-two practices are checked for their presence and approximate date

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[42] 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).

of introduction and are then scored by means of a table. Standard score equivalents are available and a comparison can be made of a community's position relative to communities in the top fifth of school expenditure in the United States as represented by schools in the Metropolitan School Study Council. A revised edition contains thirty-three items. The Time Scale provides a less complete appraisal than The Growing Edge but has the advantage of being applicable without the visitation of field workers. The reliability coefficient (split-half) is 0.84.

Instruments Designed to Measure Scope of Educational Opportunity

A Guide for the Self-Appraisal of School Systems provides a checklist of 183 specific adaptations which were selected from twenty-three major statements formed as the result of a survey of some seven hundred primary and secondary sources dealing with social and economic forces and their implications for education.[43] Weightings for the various sections of the instrument were based upon the judgments of American educators, and they range from five to thirteen

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[43]Paul R. Mort and Francis G. Cornell, A Guide for Self-Appraisal of School Systems (New York: Bureau of Publications, Teachers College, Columbia University, 1937).

points with the total possible points being 1003. There are four major divisions (Classroom Instruction, Special Services for Individual Pupils, Educational Leadership, and Physical Facilities and Business Management) each of which is subdivided into two sections (Curriculum, Pupil Activity) which are further subdivided to form a total of twenty-three subsections and are scored as major adaptation groups from 130 to 730 points. Scores may be compared with norms. The instrument may be used by professional staffs of school systems or visiting evaluators. The guide makes no direct reference to the formulation of the values underlying the total educational program or to the appraisal of the educational product. Mort has rated several of the instruments and devices used in research by him and his colleagues as to their effectiveness.[44]

Measures of Administrative Arrangements and Legal Structure

Ferrell used a six item index called an efficiency index for a study of its relation to expenditure using data from 1935. Items such as attendance, holding power, teacher

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[44]Paul R. Mort, "Cost-Quality Relationships in Education," Problems and Issues in Public School Finance, ed. R. L. Johns and E. L. Morphet (New York: National Conference of Professors of Education, Teachers College, Columbia University, 1952), p. 16.

preparation and experience, teacher-pupil ratio, and length of school term were included.[45]

Thaden used as a measure of educational opportunity certain items of administrative arrangement, structure, and external factors such as accreditation, presence of citizen's council and adult education programs, valuation, enrollment, percentage of non-resident pupils, and training of teachers.[46]

Measures of Quality Used in Schooling-Adult Life Studies

In a study of the relative causal effects of education and other factors on social life, Thorndike used indexes made up from items used by Ayres and Bagley in previous studies. The Ayres index which includes all items used in these three studies is as follows:

1. Per cent of school population attending school daily.
2. Average days attended by each child of school age.

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[45] D. T. Ferrell, Relation Between Current Expenditures and Certain Measures of Educational Efficiency in Kentucky County and Graded School Systems, Contributions to Education No. 126 (Nashville: George Peabody College for Teachers, 1936).

[46] J. F. Thaden, Equalizing Educational Opportunity Through Community School Districts, Special Bulletin 410, January, 1957 (East Lansing: Agricultural Experiment Station, Dept of Sociology and Anthropology, Michigan State University).

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 teacher's salaries.
10. Expenditure per teacher for salaries.[47]

This index appears to be similar to the previously mentioned measures of administrative arrangements.

Summary

1. The most effective measures of educational quality of the normative type have been those designed to measure factors of educational process rather than product on the assumption that they contain educational items which are reflective of the aspects of the school program that contribute to the benefit of individuals and society in post-school life.

2. Achievement tests have had a limited value for comparative purposes because of the critical variation of methods of application and interpretation and because of the scarcity of information concerning pupil growth and its relation to teaching methods. Recent research suggests

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[47] Edward L. Thorndike, Education as Cause and as Symptom (New York: The MacMillan Company, 1939), p. 8.

that factors other than grade level and area of learning cause frequency distributions of mean schievement gains of school systems to assume asymmetrical forms.

3. One of the chief problems in the measurement of educational quality and its evaluation is the determination of the degree as well as the description of the educational characteristic or factor. This inadequacy detrimentally affects the accurate measurement of process factors, individually and in clusters, which may be related to quality.

4. The ultimate end of good instrumentation is the identification and measurement of educational input and output so that controls can be established in the teaching and administrative processes in order to achieve the maximization of efficiency in educational effort toward the ultimate criterion of educational quality--individual and societal well-being in life.

Related Empirical Studies

The empirical studies of educational quality have been reviewed according to (1) cost-quality relationships, (2) community-quality relationships, and (3) school staff-quality relationships. A major portion of the review is concerned with the research conclusions of Paul R. Mort and

his colleagues who have investigated over three hundred educational quality-related factors during the past forty years. Other recent research pertinent to this study and primarily concerned with educational cost factors in Michigan is included here.

Cost-Quality Relationships Using Expenditure as Cost Factor

Upper Part of Expenditure Scale

According to Mort, the data of Woollatt's is among the most convincing of all studies of expenditure-quality relationship.[48] In a study of high expenditure school districts in New York and New Jersey suburban communities, Woollatt found a significant positive relationship between each of the four factors of The Growing Edge instrument and expenditure, and between combined factors and expenditure; the latter correlation being 0.59.[49]

Upper Half of Expenditure Scale

Vincent found significant correlations between expenditure and school quality using three samples of New York

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[48]Mort, Reusser, Polley, op. cit., p. 17.

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

state school systems having high, middle, and low expenditure schools all of which were in the upper half of the national school expenditure scale.[50] Vincent used the Mort-Burke-Fisk Guide consisting of 1091 items as well as mailed reports to collect data.

Upper Middle Part of the Expenditure Scale

The Pennsylvania study of 1935 by Mort and Cornell showed that the expenditure factor was operating in all but one of the eight adaptations studied as shown by the relatively high positive correlation of 0.587.[51] Data was collected by means of the Mort-Cornell Guide which was applied to thirty-six Pennsylvania communities.

Applying the Guide to thirty-eight Rhode Island school districts in 1941, Mort determined a correlation of 0.66 between the quality scores and expenditure and also found that a large percentage of items in the scale were not directly traceable to costs, especially the fifty-eight items dealing with actual behavior in school.[52]

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[50] William S. Vincent, Emerging Patterns of Public School Practice (New York: Bureau of Publications, Teachers College, Columbia University, 1945), p. 50.

[51] Mort and Cornell, American Schools in Transition, op. cit., p. 178, 490.

[52] Mort, Problems and Issues in Public School Finance, pp. 23-25.

Middle Part of the Expenditure Scale

In a study of the West Virginia schools in 1945, George Strayer confirmed the findings of Mort's previous studies that expenditure and quality are positively related.[53] Consistent relationships were stronger on the curriculum items of the Mort-Cornell Guide than any other group.

In 1936 Ferrell found a positive relationship between current expenditure and an educational efficiency index of six items, the correlation being 0.92 (county systems) and 0.77 (graded school systems).[54]

Low Part of the Expenditure Scale

McClure applied an adaptation of the Mort-Cornell Guide to a sample of Mississippi schools and found that 67 of 153 items showed consistent expenditure-quality relationship and only 13 items showed no relationship.[55] Forty-one practices showed no improvement until the high expenditure group was reached, and this phenomenon is explained in the "plateau hypothesis" that certain desirable practices do

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[53] Ibid., pp. 27-29.

[54] Ibid. pp. 30-31.

[55] Ibid., pp. 33-34.

not materialize in schools until a certain climate of expenditure is reached.

Cumulative Effect of Expenditure Level on School Quality

Furno used expenditure and quality data from two clusters of Metropolitan School Study Council school systems to determine that expenditure as averaged over a period of years is more predictive of school quality than is expenditure for any one year. His quality measurement was made with The Growing Edge which was applied in 1945 and 1955.[56]

The Relationship of Expenditure and an Educational Development Test

In 1955 Bloom studied the results of the United States Armed Forces Institute Test of General Educational Development in relation to several factors among which was the financial support for both formal education (of schools) and informal educational facilities (of the public library).[57] He found that in comparing the sixteen states which were highest on GED tests with the sixteen states which were

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

[57] B. S. Bloom, "The 1955 Normative Study of the Tests of General Educational Development," The School Review, XLVI (March, 1956), pp. 110-124.

lowest that sixty-nine per cent of the high states spend more money per pupil than the national average while only twenty-five per cent of the low states reach this level of financial support for public education. The adult level of education and extent to which young people make use of educational facilities were also related to educational quality.

Relationship of Quality and Other Cost Factors

Ability

This factor is a measure of local tax wealth and since the local property tax is typically the basis of local support for education, the amount of true property value per ability pupil unit is chosen as the measure of local ability to support education. Ability may be viewed as potential expenditure and is highly correlated to wealth but not to effort.[58] A summary of the correlations between ability and various criteria of school quality is as follows: (1) Suburban school districts of the Metropolitan School Study

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[58] W. S. Vincent, "Quality Control: A Rationale for Analysis of a School System," IAR Research Bulletin, Vol. 1, (January, 1961), p. 4.

Council, 1940-45, elementary schools--0.61; secondary schools--0.32; all schools--0.77; (2) Nation-wide heterogeneous group of school districts in the Associated Public School Systems, 1959-60--0.34 (ability was based upon disposable personal income per capita); (3) Sample of Pennsylvania school districts, 1936--0.34.[59]

Effort

This factor is a measure of local taxation and is the amount raised locally per expenditure pupil unit.[60] In the numerous studies associated with Institute of Administrative Research the following correlations have been established between effort and school quality: (1) Suburban school districts of the Metropolitan School Study Council, 1940-45--0.35; (2) Same districts, 1950-55--0.48.[61]

Inter-relationships of Need, Effort, and Ability

Turck studied the inter-relationships between measures of need, effort, and ability in 581 Michigan public high school districts having kindergarten through twelfth grade programs in 1957-58 and concluded that (1) there is

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[59] Ibid., p. 7.

[60] Ibid., p. 4.

[61] Ibid., p. 7.

undoubtedly a relationship between size of membership (need) and ability (taxable wealth), (2) there is a tendency for a school district as it increases in size of membership to expend more effort (tax rate) for the support of its program, (3) there appears to be no consistent relationship between the ability of a high school district and its effort, (4) the three variables studied are by themselves inadequate predictors of the adequacy of a state support program, and (5) the effect of sociological factors and various community characteristics may account for the results of the analysis of the variables used in the study.[62]

Rhee identified the general relationships between selected financial and educational factors and each of the three variables of financial need (membership size), ability, and effort, using 1959-60 data from 520 of the Michigan public school districts having kindergarten through twelfth grade programs.[63] Significant statistical tests indicated

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[62]Merton J. Turck, Jr., "A Study of the Relationships Among the Factors of Financial Need, Effort, and Ability in 581 High School Districts in Michigan," Unpublished Ed.D. dissertation, Michigan State University, 1960.

[63]Jeung Rhee, "An Analysis of Selected Aspects of the Public School Finance System in Michigan," Unpublished Ph.D. dissertation, Michigan State University, 1961.

that the most significant variable of the differences in each of the five selected financial factors and five educational factors was either need or ability. Effort was not deemed a significant variable. Rhee concluded that in terms of the ideal of equal educational opportunity, the present Michigan State Aid Formula is inadequate and that more effective measures of school district reorganization and more positive ways of adjusting the disparity in financial ability are necessary.

Summary

1. There is a positive continuous relationship between favorable school characteristics and all parts of the expenditure range.

2. In schools having comparatively high expenditure levels there are many practices which do not cost more to have including higher quality administrative and teaching practices.

3. Expenditure level has proved to be the factor having the most consistently high relationship to school quality of any single measure that yet has been identified. The most significant studies show a direct positive relationship between the teaching of skills, teaching of areas

of knowledge, discovery of aptitudes, and development of gross behavior patterns with expenditure level.

4. Expenditure level as averaged over a period of years is more predictive of school quality than is expenditure for any one year.

5. Ability in terms of wealth and also effort in terms of taxation are both related positively to expenditure but not significantly to each other. Ability and effort combined do not have higher correlations with expenditure than as single factors.

6. There is considerable validity in the cost-quality studies in that regardless of the several quality criteria used, the positive relationship between cost and quality remains. There is considerable stability also in the relationship which has held over a long period of years.

Community Characteristics-Quality Relationships

Pierce studied forty-eight communities of the Metropolitan School Study Council by means of data from twenty-four measures and showed that community characteristics combined

with certain measures could account for as much as 64 per cent of the variance in a measure of school quality.[64] He categorized his measures as (1) community good will toward education, (2) conditioners of the expression of good will and understanding of education, and (3) community understanding of what schools can do.

Ayer made a factor analysis of the Pierce data and identified five factors the most important of which were wealth and cultural characteristics.[65] Either of these two factors appeared about as important as the remaining three factors which were size, density, and management of community affairs.

The Institute of Administrative Research has established two different community factors to predict a quality criterion through multiple correlation as well as two community measures to indicate attitudes toward up-to-dateness of school programs and measure the relation of community groups to the school and its staff.[66]

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[64]Truman M. Pierce, Controllable Community Characteristics Related to Quality of Education, Study No. 1 (New York: Institute of Administrative Research, Teachers College, Columbia University, 1947).

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

[66]William S. Vincent, IAR Research Bulletin, Vol. 1, (January, 1961), p. 3.

Community Size and Quality

Swanson's study of Associated Public School systems in 1955 showed that there is a strong positive relationship between population and school quality from 1,000 to 28,000 population and the strength of this relationship tapers off until at 67,000 population a further increase in population is not likely to be accompanied with any increase in school quality.[67] The study utilized The Time Scale, a quality criterion which has a bias favoring large school systems. An hypothesized regression was calculated which established the optimum conditions for promoting school quality as being in communities of 20,000 to 50,000 population.

Smith[68] and Ostrander[69] in studies of size-quality relationships concluded that the chief harm caused by small enrollments was felt in high schools.

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

[68]Stanley V. Smith, "Quality of Education Related to Certain Social and Administrative Characteristics of Well-Financed Rural School Districts: A Study of Central Schools of New York State," Ph.D. dissertation (New York: Teachers College, Columbia University, 1954).

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

Mort and Cornell point out however that size alone is not the determining factor in favoring adaptability or quality but the presence of desirable cultural elements within the district which is more probable in relatively large districts.[70]

Relation of Community School Districts to Educational Opportunity

Thaden studied the variation in educational opportunities as defined by administrative, structural, and other factors in 534 Michigan school districts having kindergarten through twelfth grade programs in 1956, the characteristics of the population centers within which the high schools were located, and the inter-relationships between the districts, composite trade-service, and town-country communities.[71] He concluded that educational opportunities are more universal in community school districts than in partial-community and non-community (non-homogeneous) school districts.

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[70] Mort and Cornell, American Schools in Transition, op. cit., p. 138.

[71] Thaden, op. cit.

School Staff Characteristics-Quality Relationships

The Institute of Administrative Research has made an overall analysis of thirty-nine school staff factors that have been measured by a total of ninety-four indexes over the past twenty-six years. Grogan summarized and analyzed data from the major investigations in this area and categorized the staff factors as being: (1) personal status, (2) professional status, (3) professional behavior, and (4) professional attitude.[72] He named sound predictors as being origin of staff, foreign and domestic travel, literary interests, amount of training, breadth of training, and professional interest.

In a study of Illinois school districts Hall found significant relationships between the extent of diffusion of administrative procedures and school program quality and between expenditure level per weighted pupil and quality. Certain administrative practices were found more frequently in systems with enriched programs than in systems with limited programs.[73]

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

[73]Harold D. Hall, "Relationships of Selected Characteristics of Organization to Practices in School Systems:

Mort's Sequential Simplex of Factors

Mort has presented a theory in which a large constellation of factors representing school and community forces are treated by families of factors in a series of sequential steps in order to discover inter-relationships affecting school quality.[74] In this theory the school is considered part of a larger organism, the community, which has characteristics which strongly predispose it to be a slow, average, or rapid adaptor to new educational practices. Hypotheses concerning the sequential relationships of measures within panels and groups of factors are made. Factor groups include legal structure and administration, status measures of school and community, or facets of community directly affecting school quality and panels include community, educational climate, school system policy, and the individual school. This theory emphasizes the generalization

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An Exploratory Measure of the Extent of Diffusion of Administrative Procedures and Staffing Practices of Their Relationships to Selected Characteristics of School Systems," Unpublished Ed.D. dissertation, University of Illinois, 1956.

[74]Paul R. Mort, "School and Community Relationships to School Quality," Teachers College Record, LV (January, 1954), pp. 201-214.

derived from nearly three decades of research that no single factor alone can account for school system quality and many small influences in various combinations appear to be responsible.

Summary

1. The positive relationship of various community characteristics and various school staff characteristics to educational cost factors appear to be strong.

2. Both community and school staff factors are concomitant with various cost factors in their relationship to educational quality which is defined by criteria based on the concept of adaptability.

Chapter Summary

1. It would appear that the major policy decisions regarding educational quality and its relationship to cost factors should be made by reasonably well educated people if good public schools are to be had.

2. Community understanding and good will are essential and are inter-related to financial support and quality. Professional leadership must draw upon all available research sources to establish and maintain community relations toward this end.

3. Ample financial support appears to be justified in order to assure adequate schools in which to train our children for their place in an increasingly complex adult world.

4. The findings of research clearly point to the importance of the identification of non-cost-related school quality factors as well as cost-related quality factors. Both curriculum improvement and financial support of the schools might proceed more expeditiously with this knowledge.

5. Educational quality research deserves a first priority in the task lists of educators. The implication of this type of research is that controls may then be established at local and state levels toward the improvement of educational quality.

CHAPTER III

PROCEDURE AND METHODOLOGY OF THE STUDY

The present study is based on a design that makes possible the determination of the discrimination and reliability indices of the Educational Characteristics Criterion, an instrument designed to measure school and community educational characteristics within a public school district.

Plan for Securing Factors and Necessary Data

Educational Quality Factors

The factors of educational quality were secured by means of the Educational Characteristics Criterion, an instrument developed initially by Dr. Herbert C. Rudman of Michigan State University.

Educational Cost Factors

The factors of size (school membership), effort, ability, and expenditure were obtained from data derived from the Annual Statistical and Financial Reports to the Michigan Department of Public Instruction for 1960, computations of per pupil costs by the Department, and computations

by the Michigan Education Division from official reports. Recent data on school district pupil membership size and faculty size from the Michigan Education Directory of 1961-62 was used.

Data for Discrimination and Reliability Indices

The perceptions of the sample of teachers and administrators, individually and combined regarding individual, categorical, and total educational characteristics furnished the necessary data to determine the discrimination and reliability indices.

Development of the Instrument and Plan for Its Administration

The Instrument

The Educational Characteristics Criterion was developed initially by Dr. Herbert C. Rudman of Michigan State University.[1] It is based upon the assumption that educational quality may be defined as those educational characteristics of a school district, both school and community, which are perceived as effective in accomplishing the purposes of American public school education. The judgments of

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[1] Appendix A.

educational specialists on the Michigan State University faculty were secured regarding an initial list of several hundred educational characteristics. On the basis of a significantly high level of agreement among the specialists, ninety educational characteristics were selected for an experimental version of the instrument which was used in a national study. A revised version of the instrument consisting of sixty-two educational characteristics selected on the basis of the highest levels of agreement was used in this study. Fifty-six educational characteristics were utilized in providing scores.

The instrument is a pencil-and-paper type suitable for individual response and can be completed in a half-hour. Responses are made by marking an "X" over the number which represents the degree to which each educational characteristic is present in a given situation, e.g., "Most characteristic"--4; "Somewhat characteristic"--3; "Slightly characteristic"--2; "Least characteristic"--1. The teacher or administrator respondent is directed to relate the educational characteristic to their building experience. Central office administrators or supervisors are directed to relate the item educational characteristic statements to the school system in general.

The educational characteristics scores are obtained by the sum of the weighted response to each characteristic. The category scores are obtained by the sum of the educational characteristic scores included in each of seven categories. The total score is obtained by the sum of the fifty-six educational characteristic scores.

Plan for Administration of the Instrument

The required number of instruments, each enclosed in a separate envelope, was sent to the Superintendents of the sample school districts who had accepted the letter invitation to participate in the study.[2] Instruments were then distributed to teachers and building administrators by the Superintendent. General instructions for distribution and administration were sent to the Superintendent[3] and instructions for individual respondents were enclosed in each instrument envelope.[4] The necessity for securing individual perceptions of teacher and administrative respondents was stressed and implemented by requesting an early completion

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[2]See Appendix B for letter invitation.

[3]Appendix C.

[4]Appendix D.

and return of completed instruments in order to avoid possible interaction or discussion tending to modify perceptions of respondents. The importance of preserving anonymity toward this end and toward promoting an unhibited response was also stressed.

It was requested that the Superintendent supply the factual data required on four non-categorized and unscored items (3, 4, 5, 6) and two categorized and scored items (18, 28) in order that the most accurate data be obtained.

Determination of Categories Within the Instrument

Each of the fifty-six scored educational characteristics was assigned to one of seven of the following categories on a logical basis in order to provide a means of understanding the effect of and inter-relationship between various school and community forces associated with educational quality. The list of categories and their respective item statements follows:

Category I. Student's Level of Knowledge and Attitudes

14. Students show a positive attitude toward scholastic work.

15. Students evidence accurate knowledge of self.

22. Students are knowledgeable about the educational and social opportunities available to them.

58. Pupils consider an academic grade of at least "B" to be the norm for academic achievement.

59. The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement.

61. 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

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

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

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

37. There is no lag between the values taught in the school and what is practiced in the community.

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

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

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

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

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

60. 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.

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

Category III. Curriculum

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

11. Consensus exists among the staff concerning the goals of the educational program.

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

21. A great variety of instructional materials are presently used in the classrooms.

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

Category IV. Use of Facilities

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

Category V. Socio-cultural Composition of the Community

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

41. Cultural experiences are readily available in the community.

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

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

49. A high percentage of homes own television sets.

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

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

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

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

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

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

Category VI. Administration and Supervision.

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

28. School program is accredited by the state and regional accrediting agencies.

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

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

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

34. Citizens are highly organized to discuss school problems.

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

Category VII. The Teacher and Teaching Methods

7. Teachers have intimate knowledge of children.

8. Teaching practices reflect concern for individual differences.

9. Teaching practices reflect a knowledge of individual differences.

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

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

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

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

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

24. Teachers often avail themselves of professional help.

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

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

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

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

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

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

Non-categorized and Unscored Items

Item 1. School district.

Item 2. County.

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 g., 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. 25,000-1,000,000 and over.

Classification of School Districts on the Basis of Cost Factors

In the light of the conclusions of previous research regarding the interrelationships of educational cost factors, it was decided to consider them as a group. In order to emphasize the effects of combined cost factors or total financial support in a feasible research plan, the Michigan school districts having kindergarten through twelfth grade

programs in 1959-60, exclusive of Detroit, were classified by quartiles on each cost factor of size (school membership), ability, effort, and expenditure per pupil. Since ability or the number of dollars of state equalized valuation behind each resident pupil may be viewed as potential expenditure and is the foundation of all educational cost data, it was decided to identify all districts within the first and fourth quartile of ability as to their respective quartile classification on size, effort, and expenditure per pupil.

TABLE 1.--Classification by quartiles of Michigan school districts according to ability (state equalized valuation per pupil)

Quartile	No. of Districts	SEV per Pupil (Dollars)
Quartile 1	220	1,963 - 7,899
Quartile 2	181	7,955 - 11,964
Quartile 3	79	11,973 - 15,918
Quartile 4	53	16,276 - 49,739

TABLE 2.--Classification by quartiles of Michigan school districts according to size (pupils in membership)

Quartile	No. of Districts	Membership (Pupils)
Quartile 1	358	55 - 1,621
Quartile 2	43	1,621 - 2,139
Quartile 3	115	2,165 - 11,081
Quartile 4	17	11,464 - 37,935

TABLE 3.--Classification by quartiles of Michigan school districts according to effort (mills for operation)

Quartile	No. of Districts	Millage
Quartile 1	238	7.00 - 9.60
Quartile 2	163	9.65 - 13.50
Quartile 3	40	13.50 - 14.90
Quartile 4	92	14.90 - 28.71

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

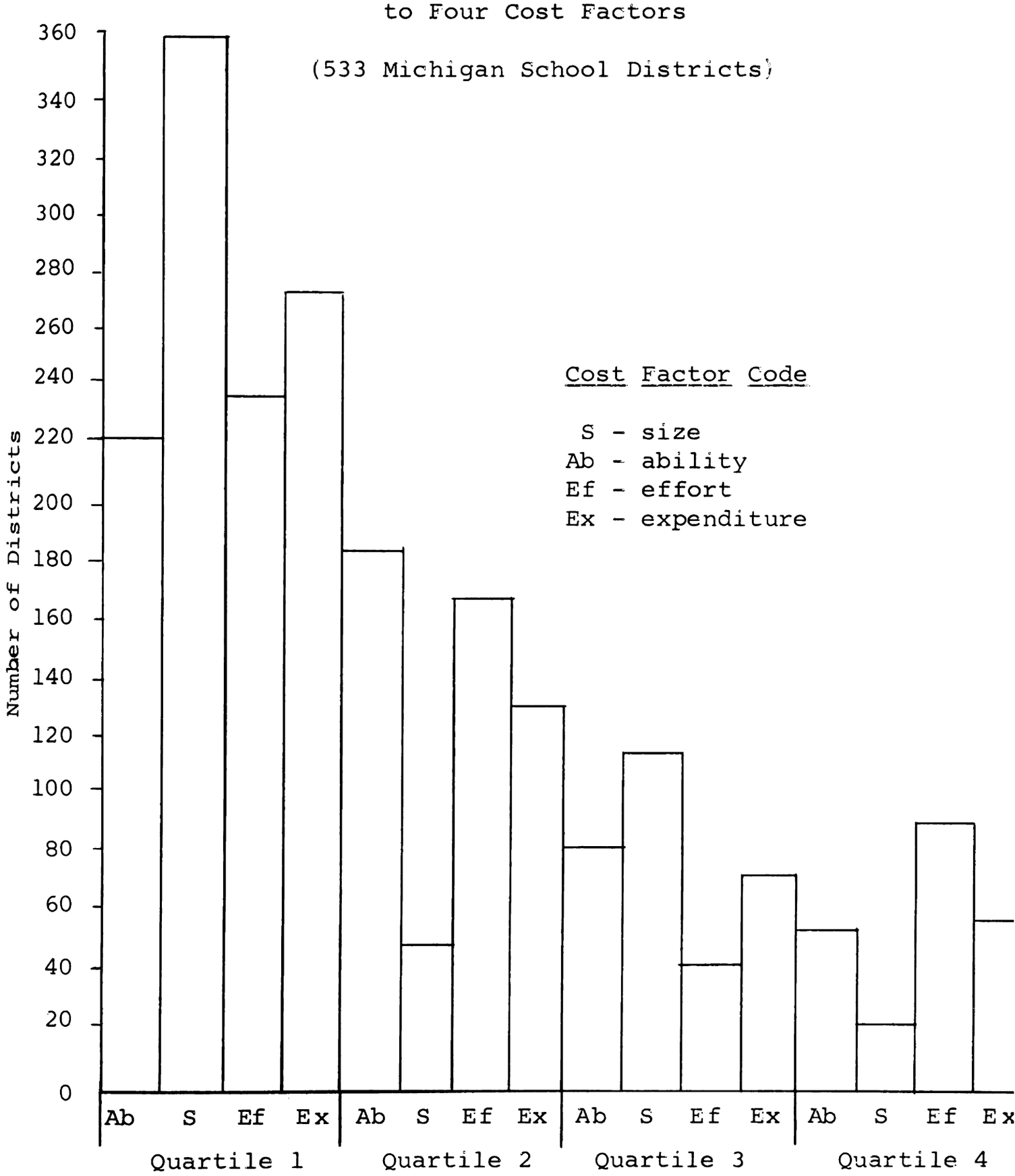
Quartile	No. of Districts	Expenditure (Dollars)
Quartile 1	273	201.44 - 270.58
Quartile 2	128	270.90 - 309.48
Quartile 3	74	310.06 - 358.03
Quartile 4	58	358.41 - 585.35

The quartile distribution of school districts according to the four cost factors is displayed in Figure 1.

FIGURE 1

Quartile Distribution of School Districts According to Four Cost Factors

(533 Michigan School Districts)



Classification of Districts on the Four Cost Factors

The cost factor data showed the sixty-seven of the 220 districts in the first quartile of the wealth distribution were also in the first quartile of the size, effort, and expenditure distribution. This is 30 per cent of the districts in the first quartile based upon the wealth factor and 12.5 per cent of the total number of districts. There was only one of the fifty-three districts in the fourth quartile of the wealth distribution which was also in the fourth quartile of the size, effort, and expenditure distributions, representing 1.8 per cent of the quartile or 0.18 per cent of the total number of districts. In order to provide an adequate sample of districts and respondents within districts a classification was made of districts which were in fourth quartiles of ability, size, and expenditure factors and third quartile of the effort factor. There were two districts of the 53 districts in the fourth quartile of wealth distribution assigned to this classification.

Selection of the Sample

The method of selecting the sample depended primarily upon the necessity of providing an adequate number of

respondents, both teachers and administrators, in school districts within the first and fourth quartiles of the distributions of cost factors, and secondarily upon the desirability of providing more than one district within each quartile.

Fourth or High Financial Support Quartile of Districts

The one district which was in the fourth quartile on all cost factors was selected. One of the two districts which was in the fourth quartiles of ability, size, and expenditure but in the third quartile of effort (and within 0.5 mills of the fourth quartile of effort) was selected. The projected number of respondents for the fourth quartile districts designated as "high financial support quartiles of districts" was 1551 teachers and 110 administrators, based upon 100 per cent sampling of both districts. Upon request from one district for a 50 per cent sampling of teachers this projection was changed to 1057 teachers and 110 administrators. Usable data was obtained from the completed instruments of 871 teacher respondents and 82 administrator respondents from two districts within the fourth or high financial support quartile of districts.

First Quartile or Low Financial Support Quartile of Districts

Thirty-nine of the 67 districts in the first quartile of wealth distribution which were also in the first quartile of the size, effort, and expenditure distributions were selected randomly in order to provide a sufficient number of teacher and administrator respondents to match the number in the high financial support quartile. This sample is referred to as "low financial support quartile of districts." The projected total number of respondents based upon 100 per cent sampling was 1313 teachers and 116 administrators. Usable data was obtained from the completed instruments of 1091 teacher respondents and 106 administrator respondents from the 39 districts within the first or low financial quartile of districts.

Mailing Procedures

On January 30, 1962 a letter was sent to the Superintendents of the school districts in the sample inviting their cooperation to participate in the research study. Included in the letter was a request for the most recent information concerning the number of teachers and administrators within the district and provision for indicating a

desire for a copy of the abstract of the research findings. Upon receipt of the unanimous affirmative replies from the Superintendents of the districts in the sample, the packages of instruments were mailed to the low financial support districts and transported by the writer to the high financial support districts. Each instrument was enclosed with accompanying instructions in an envelope which was to be sealed and returned upon completion of the instrument.

Treatment of the Data

Each of the returned instruments was marked with a district number upon its removal from an envelope in order to insure its identification at all times. All the returned instruments were checked for completeness and incompleted instruments were discarded. The supplementary information form of the Superintendent of each school district was marked with instructions to gang punch items 3, 4, 5, 6, 18, and 28 on all teacher and administrator respondent IBM cards from the district according to the Superintendent's instrument. Item 28 was scored according to the following plan: North Central Association of Colleges and Secondary Schools accreditation--4 points; University of Michigan accreditation--3 points; Department of Public Instruction approval

as a twelve grade tuition school--2 points; no accreditation or approval--1 point.

The IBM code sheet utilized all eighty columns, and provision was made for category scores, total scores, type of respondent, district number, and all other necessary data from the instruments. A printed IBM record of tabulations from card data was ordered to facilitate the computations necessary for statistical tests.

Statistical Methods

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

2. The estimation of reliability of the instrument based upon item to total score consistency and item to category score consistency within high and low financial support quartiles of districts is made by the Hoyt analysis of variance method.

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

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

CHAPTER IV

ANALYSIS OF THE DATA

Introduction

In this chapter the five major hypotheses are analyzed. In each section the results of the statistical treatment of the data in summary form, the rejection or acceptance of the hypothesis, and the interpretation of the test are described. The first section is the analysis of the Educational Characteristics Criterion discrimination ability between the high and low financial support quartiles of Michigan public school districts. The second section is concerned with the ability of the Educational Characteristics Criterion to discriminate between the perceptions of teachers and administrators within high support and within low support districts. The third and fourth sections report the results of reliability tests. The fifth section contains the analysis of the internal consistency of the Educational Characteristics Criterion item scores.

The hypotheses are stated in null form for the statistical tests. A significant statistical indication determines the acceptance or rejection of the null hypothesis. If a null hypothesis is rejected, the research hypothesis

in positive form is accepted. If the null hypothesis is accepted, the research hypothesis in positive form is rejected.

Analysis of the Educational Characteristics Criterion Discrimination Ability Between the High and Low Financial Support Quartiles of Michigan Public School Districts

The first major null hypothesis is as follows:

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

This hypothesis is operationally stated in null form in three sections, each having two subsections:

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 according to teacher responses.

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

H3a: There is no difference between the high financial support districts and low financial support districts in each educational characteristic mean score according to 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.

Statistical Procedure

The "t" test was used to determine the presence of a significant difference between the mean scores of high financial support districts and low financial support districts according to teachers and according to administrators. The level of significance or chance of rejecting the null hypothesis if true was chosen at 0.05 which may be interpreted that only five in one hundred times would an obtained difference between mean scores be expected to occur as the result of chance. The values of "t" used are those which cut off twenty-five thousandths of the area on each end of the probability distribution resulting in what is termed a two-sided "t" test. The confidence limits of the population mean (or limits within which the true mean may be expected to fall) can be determined by the multiplication of the "t" value and the estimated standard error of the difference between the two sample means, and the confidence limits

extend from the obtained difference of the mean scores plus and minus the result of the multiplication of the above values.

The null hypothesis will be accepted only if the "t" value obtained exceeds the significance level of 0.05 which is indicated $P > .05$. In order to show very high significance levels of obtained "t" values, which indicate strong rejections of null hypotheses, the probability will be expressed as in the following example: $P < .001$, meaning that the probability is less than once in a thousand times that a difference between mean scores smaller or larger than that observed would occur as the result of chance. Where not shown in the tables, the statistical data upon which the table is based is presented in the appendices as indicated. In order to clarify the analysis tables are used which indicate the abstracted results of the numerous statistical tests of the hypotheses. Some practical implications of the results are included in this analysis chapter. A more extensive presentation of implications is made in Chapter V.

The testing of the first hypothesis is concerned primarily with whether or not there will be any difference

between the mean scores of high and low financial support school districts according to teachers and according to administrators and with the determination of the significance of the obtained difference. On the basis of previous research findings presented in the review of related literature it is expected that high scores will be made by high financial support districts which are significantly different from low scores made by low financial support districts. Furthermore, the testing of the first hypothesis is likely to reveal some non-significant differences between mean scores of high and low support districts thus indicating that there is no significant positive or negative relationship between educational quality and level of financial support. The examination of the "t" value and the relative value of the mean scores obtained for high and low support districts thus provides a measure of the Educational Characteristics Criterion discrimination power according to total, category, and individual educational characteristic scores of teachers or of administrators as well as a useful means of identifying educational quality factors that are positively related to level of financial support, negatively related, or neither positively nor negatively related to level of financial support.

Results

Total Scores

On the basis of the significant difference in total mean scores as indicated in Table 5 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 hypothesis that the Educational Characteristics Criterion will discriminate between the district types according to teacher responses and according to administrator responses. This discrimination indicates that there is a significant positive relationship between educational quality and educational financial support since there is a significant difference between the total mean scores of teacher respondents or between the total mean scores of administrator respondents from high financial support districts and low financial support districts in conjunction with the higher total mean score of the high financial support districts.

TABLE 5.--Differences in total mean scores of respondents from high financial support districts and low financial support districts[1]

Score	Teachers		Administrators	
Total	High	Low	High	Low
	171.54	145.09	173.43	148.51
	S ($P < .001$)		S ($P < .001$)	

[1]See Appendix E for statistical data.

S indicates a statistical significant difference between mean scores at a minimum $P < .05$.

$P < .001$ indicates that the obtained difference of mean scores would occur less than once in one thousand times as a result of chance, a much higher significance level than minimum required $P < .05$.

Category Scores

On the basis of the significant difference in total mean scores as indicated in Table 6 we reject the null hypotheses:

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

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

and accept the research hypothesis that the Educational Characteristics Criterion will discriminate between the

district types according to teacher responses and according to administrator responses. This discrimination indicates that there is a significant positive relationship between educational quality and educational financial support since there is a significant difference between the category mean scores of teacher respondents or between the category mean scores of administrator respondents from high financial support districts and low financial support districts in conjunction with the higher category mean score of the high financial support districts.

TABLE 6.--Differences in category mean scores of respondents from high financial support districts and low financial support districts[2]

Score	Teachers		Administrators	
	High	Low	High	Low
Category I: Student's Level of Knowledge and Attitudes	17.68	15.29	18.15	15.70
Category II: Community Attitudes	32.22	26.27	31.39	26.87
Category III: Curriculum	17.52	14.25	17.86	14.84
Category IV: Use of Facilities	3.36	2.43	3.57	2.54

[2]See Appendix E for statistical data.

TABLE 6--Continued

Score	Teachers		Administrators	
	High	Low	High	Low
Category V: Socio-cultural Composition of the Community	29.43	25.95	28.73	25.70
Category VI: Administration and Supervision	22.13	17.39	23.10	17.89
Category VII: The Teacher and Teaching Methods	50.59	44.93	49.16	43.45

The difference between the mean scores of each category is statistically significant and $P < .001$.

The significant positive relationship between educational quality and educational financial support which is indicated by the results of the analysis of total scores and each category score indicates that school districts which have strong financial support have higher educational quality than school districts which have weak financial support. The various category scores also suggest that the school product in terms of desirable outcomes as student's level of knowledge and attitudes will have high quality if there is high financial support of the school program. This suggestion

is also applicable to the nature of the school in terms of curriculum, use of facilities, administration and supervision, and the teacher and teaching methods. The significant positive relationship between the socio-cultural composition of the community and high educational financial support suggests that socio-cultural composition of the community may determine the degree of financial support. There is also strong evidence that the favorable community attitudes will raise the degree of educational financial support.

Individual Educational Characteristic Scores

On the basis of the significant difference in individual educational 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 according to 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 each of the forty-one educational characteristics listed in Table 7 and accept the research hypothesis that the Educational Characteristics Criterion will discriminate between

the district types according to teacher responses and according to administrator responses. This discrimination indicates that there is a significant positive relationship between educational quality and educational financial support since there is a significant difference between the individual educational characteristic mean scores of teacher respondents or between the individual educational characteristic mean scores of administrator respondents in high financial support districts and in low financial support districts in conjunction with the higher individual educational characteristic mean score of the high financial support districts. It is evident that the degree of quality in each of forty-one educational characteristics of a total of fifty-six educational characteristics in the Educational Characteristics Criterion depends upon the degree of financial support of education. The findings with regard to the total score are thus supported by seventy-three per cent of the individual educational characteristics. The findings with regard to each category score are also supported by a majority of individual educational characteristics within each category.

TABLE 7.--Individual educational characteristics which are present in a significantly higher degree in high financial support districts than in low financial support districts according to teachers or administrators[3]

Item No.	Educational Characteristic
	Category I: Student's Level of Knowledge and Attitudes
14	Students show a positive attitude toward scholastic work.
15	Students evidence accurate knowledge of self.
22	Students are knowledgeable about the educational and social opportunities available to them.
58	Pupils consider an academic grade of at least "B" to be the norm for academic achievement.
	Category II: Community Attitudes
27	Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education.
35	The perceptions of parents and patrons concerning the purposes of education are consistent and clear.
36	The local newspaper has shown a high interest in local school affairs.
37	There is no lag between the values taught in the school and what is practiced in the community.
44	There are outstanding community leaders in this community who exhibit great interest in school affairs.

[3]See Appendix F for statistical data.

TABLE 7--Continued

Item No.	Educational Characteristics
46	The community exhibits a great concern for the development of aesthetic and artistic interests.
47	A two-way communication channel readily exists between the home and school.
60	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
10	Teachers perceive a coherent and coordinated structure to the educational program.
11	Consensus exists among the staff concerning the goals of the educational program.
12	A structure has been developed that permits continual curriculum improvement.
21	A great variety of instructional materials are presently used in the classrooms.
23	A complete comprehensive testing program including intelligence and achievement testing is available in the schools.
	Category IV: Use of Facilities
39	The physical facilities of the school system (buildings and equipment) are completely adequate.

TABLE 7--Continued

Item No.	Educational Characteristics
	Category V: Socio-cultural Composition of the Community
32	The social status of teachers is very high in this community.
41	Cultural experiences are readily available in the community.
48	A high percentage of high school students own personal cars.
49	A high percentage of homes own television sets.
54	This community is composed of people who are predominantly Catholic.
56	The population of this community is equally divided between Protestants and Catholics.
	Category VI: Administration and Supervision
16	Professional staff of the school system are involved in in-service education.
28	School program is accredited by the state and regional accrediting agencies.
29	Lay members of the community are highly involved in the planning of educational goals with the school staff.
33	Regulations governing personnel policies are highly explicit and detailed.
34	Citizens are highly organized to discuss school problems.

TABLE 7--Continued

Item No.	Educational Characteristic
42	Teachers' judgments are almost always used in the determination of educational policies.
	Category VII: The Teacher and Teaching Methods
7	Teachers have intimate knowledge of children.
8	Teaching practices reflect concern for individual differences.
9	Teaching practices reflect a knowledge of individual differences.
13	Evidence exists of instructional and/or curricular experimentation.
17	Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions.
18	All teachers are certified to teach at the grade level or subject they are now teaching.
20	A great variety of instructional techniques are presently used in the classrooms.
24	Teachers often avail themselves of professional help.
31	There is a high degree of teacher participation in social and political activities of the community.
40	The community and its residents are used for instructional purposes.
50	A great deal of homework is assigned to students.

On the basis of the significant difference in individual educational 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 according to 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 each of the three educational characteristics listed in Table 8 and accept the research hypothesis that the Educational Characteristics Criterion will discriminate between the district types according to teacher responses and according to administrator responses. The discrimination in this case indicates that there is a significant negative relationship between educational quality and educational financial support since there is a significant difference between the individual educational characteristic mean scores of teacher respondents or between the individual educational characteristic mean scores of administrator respondents in high financial support districts and in low financial support districts in conjunction with the higher individual educational characteristic mean score of the low financial support districts. This evidence means that these three educational

characteristics are present in higher degree in low financial support districts than high financial support districts. Upon further examination it is evident that all of these characteristics are not of the type which would normally demand financial support since they refer to socio-cultural composition and attitudes of the community. All three characteristics appear to be typical of small Michigan communities, many of which are in rural areas where there is a generally low degree of educational financial support. It is quite normal for parents in these areas to expect their children to perform a number of family chores, and one would expect that urban children in relatively higher educational financial support communities would have less demands placed upon them in this regard. There is a higher degree of ethnic, racial, and religious homogeneity (predominantly Protestant) in most small Michigan communities typically having low financial support than in large urban areas having comparatively high financial support. The findings regarding the three educational characteristics in Table 8 point up the striking fact that none refer to school characteristics or to the majority of community attitude characteristics which might be expected to greatly influence

the degree of financial support for education. The findings also imply that ethnic, racial, and religious homogeneity in a community may have a detrimental effect on the degree of its financial support for education.

TABLE 8.--Individual educational characteristics which are present in a significantly higher degree in low financial support districts than in high financial support districts according to teachers or administrators[4]

Item No.	Educational Characteristic
	Category II: Community Attitudes
52	The parents in this community expect their children to perform their share of family chores.
	Category V: Socio-cultural Composition of the Community
51	A high degree of ethnic, racial, and religious homogeneity exists among the local population.
53	This community is composed of people who are predominantly Protestant.

Unlike the educational characteristic scores which have been analyzed thus far, the characteristics in Table 9 vary in their relationship to financial support according to

[4]See Appendix F for statistical data.

respondent type. On the basis of the significant difference 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 according to teacher responses.

for each of the educational characteristics listed in Table 9, and on the basis of the non-significant difference in individual educational characteristic 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 according to administrator responses.

for each of the educational characteristics listed in Table 9. The research hypothesis that the Educational Characteristics Criterion will discriminate between the district types is accepted according to teacher responses and rejected according to administrator responses. The discrimination according to teacher responses indicates that there is a significant positive relationship between educational quality and educational financial support since there is a significant difference between the individual educational characteristic mean scores of teacher respondents from high financial

support districts and low financial support districts in conjunction with the higher individual educational characteristic mean score of the high financial support districts. The non-discrimination according to administrator responses indicates that there is no positive or negative relationship between educational quality and educational financial support.

TABLE 9.--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 high financial support districts than in low financial support districts[5]

Item No.	Educational Characteristic
	Category I: Student's Level of Knowledge and Attitudes
59	The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement.
61	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
43	A high percentage of the electorate in the community vote in school elections.

[5]See Appendix F for statistical data.

TABLE 9--Continued

Item No.	Educational Characteristic
62	Parents condone or encourage early dating for their children.
	Category V: Socio-cultural Composition of the Community
55	This community is composed of people who are predominantly Jewish.
	Category VII: The Teacher and Teaching Methods
25	Complete freedom is granted to students to investigate any local, state, national, or international issue.
26	Availability to students of materials that reflect all shades of political and sociological points of view.
38	There exists a high level of cooperation among the teachers of the staff.

It is evident that educational characteristic No. 26 would normally be considered related to the degree of financial support since a wide selection of materials entails expenditure. This statement is supported according to teacher responses but not supported according to administrator responses. One's interpretation depends upon his

relative trust in either type of respondent, and this trust will vary according to the relative experience, knowledge, and efficiency of the communication channels of the respondents. Furthermore, the examination of the differences between responses of teachers and administrators within high educational financial support districts and within low educational financial support districts may have a bearing upon one's decision regarding the findings between these district types. The analysis of Hypothesis II will be concerned with these differences.

One might expect that the expectations of professional educators regarding the norm for academic achievement would be the same regardless of the financial support of the school district because of the training and indoctrination that they receive as student teachers. However, according to teacher responses this is not so. Higher norms are held by the professional staff in high financial support districts than low support districts. Thus the level of academic aspiration of teachers is definitely associated with the degree of educational financial support. Administrator responses do not denote any such difference.

According to teacher responses the expectations of

parents and patrons regarding academic norms for achievement are higher in high financial support districts than low support districts. This might be expected since school districts showing high financial support usually have considerable wealth in natural resources or industrial development and a relatively higher educational level among the population under these conditions. Parents and patrons having a relatively good education would probably have higher expectations for academic achievement norms than parents and patrons having a poor education. However, according to administrator responses there are no differences in expectations according to district type.

Higher interest in education is demonstrated in high financial support districts than low support districts. The higher percentage of the electorate who vote in school elections in high support districts denotes an attitude of relatively higher concern regarding educational matters. Higher educational concern appears to be logically associated with higher financial support of education.

The higher degree of encouragement of early dating of children by their parents in high financial support districts might be expected because of the more active social

life in urban areas of the typical high financial support district. The better communication facilities and sheer number of children living in close proximity would be conducive toward earlier dating. Administrator responses do not indicate differences in dating between district types.

The finding that high financial support districts more frequently have a predominantly Jewish population than do low financial support districts is expected on the basis that Jewish people tend to live in urban areas which typically have a relatively higher financial support for education than rural areas have. Administrator responses do not indicate this difference.

A more liberal point of view regarding the freedom of students to investigate issues exists in the high financial support districts which typically are urban areas having great heterogeneity in social and political views. Thus it appears logical that this more liberal attitude would be reflected in the freedom which the community through its school board and administrators allows to students for the investigation of all types of issues. Less freedom would be likely in small, homogeneous communities typically having more conservative attitudes as well as relatively lower level

of educational financial support. Administrator responses do not indicate a difference between district types.

The existence of a higher degree of teacher cooperation in high financial support districts than low support districts might be expected as a result of the necessity for a relatively larger body of teachers to cooperate as well as the presence of better teachers and clearer personnel policies which raise morale of teachers. Good cooperation and explicit personnel policies tend to be typical of large urban districts having high financial support, however, it is not so easy to decide on the other factor, better teachers. It is likely that relatively better teacher candidates from universities are attracted toward school districts having relatively high teacher salaries which are more typical of high financial support districts than small low support districts. It is true however that there are many resourceful and effective teachers in small school districts in rural and semi-rural areas typical of the low financial support quartile districts.

On the basis of the significant difference 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 according to teacher responses.

for the one educational characteristic listed in Table 10, and on the basis of the non-significant difference in individual educational characteristic 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 according to administrator responses.

for the one educational characteristic listed in Table 10. The research hypothesis that the Educational Characteristics Criterion will discriminate between the district types is accepted according to teacher responses and rejected according to administrator responses. The discrimination according to teacher responses indicates that there is a significant negative relationship between educational quality and educational financial support since there is a significant difference between the individual educational characteristic mean scores of teacher respondents from high financial support districts and low financial support districts in conjunction with the higher individual educational characteristic mean score of the high financial support districts.

The non-discrimination according to administrator responses indicates that there is no positive or negative relationship between educational quality and educational financial support.

TABLE 10.--Individual educational characteristic which according to teacher responses is present in a significantly higher degree in low financial support districts than in high financial support districts and according to administrator responses is not significantly different in high financial support districts than in low financial support districts[6]

Item No.	Educational Characteristic
	Category VII: The Teacher and Teaching Methods
19	Teachers have complete freedom to teach what they consider to be important.

According to teacher responses there is more freedom for teachers to teach what they consider important in low financial support school districts than in high financial support districts. The reason for this might be relatively less supervision resulting in great individual freedom or community permissiveness reflected in the local school board policy and administrative procedures. Consider

[6]See Appendix F for statistical data.

also the greater relative conformity which is necessary in a large urban school district having a relatively higher educational financial support. Curricula tend to be standardized in a large school system of this type resulting in less individual freedom for teachers. The relatively greater freedom of teachers in low financial support districts may or may not have good educational advantages depending on the objectives and competence of the individual teacher. Lower levels of student knowledge and attitudes appear in conjunction with it. There is probably less tendency to leave the teaching activities of the teacher to chance in a relatively larger and better financially supported school district especially in a large urban area.

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 according to 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 each of the educational characteristics in Table 11 and

reject the research hypothesis that the Educational Characteristics Criterion will discriminate between the district types according to teacher responses and according to administrator responses. This non-discrimination indicates that there is no positive or negative relationship between educational quality and educational financial support in regard to these educational characteristics.

TABLE 11.--Individual educational characteristics which are not significantly different in high financial support districts and low financial support districts according to teachers or administrators[7]

Item No.	Educational Characteristic
Category V:	Socio-cultural Composition of the Community
45	This is a highly stable community which does not have too many people leaving.
57	One or two ethnic groups comprise the largest number of residents in the community.
Category VI:	Administration and Supervision
30	Regulations governing student conduct are highly explicit and detailed.

[7]See Appendix F for statistical data.

Stability of the community evidently does not affect the degree of educational financial support, however, there may be factors which favor financial support in event of stability and are infavorable in event of instability as well as other factors having opposite effects.

The presence of one or two ethnic groups which really denotes a degree of homogeneity in the community appears to be independent of educational financial support. This is somewhat contrary to previous findings in which ethnic, racial, and religious homogeneity was more characteristic of low financial support districts. Heterogeneity is typical of larger urban communities which tend to have high financial support.

The finding that regulations governing student conduct appear to be independent of the degree of educational financial support reflects the uniformity of general standards of conduct in Michigan communities as implemented by local boards of education, administrators, and teachers.

TABLE 12.--Summary of relationships between educational quality and educational financial support as indicated by frequencies of individual educational characteristics within their categories according to teacher responses and administrator responses

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

Key:

+ indicates association of high quality with high financial support and 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 degree of quality with degree of financial support.

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

Individual Educational Characteristic
Score Summary

1. The strong positive relationship of educational quality to educational financial support as indicated by the Educational Characteristics Criterion total scores and each of the seven category scores according to responses of either teachers or administrators is supported by the findings regarding individual educational characteristics as shown in Table 12. The significant association between high quality and high support and between low quality and low support is indicated by the teacher responses to forty-nine of the total fifty-six educational characteristics. Forty-one of these characteristics indicate the same relationship according to administrator responses (Table 7).

2. A strong negative relationship of educational quality to educational financial support is indicated by teacher responses to four educational characteristics as shown in Table 8 and Table 10. High quality is significantly associated with low financial support and low quality with high support. Three of the four characteristics indicate the same relationship according to administrator responses (Table 8).

3. Teacher responses indicate that three educational characteristics have no significant association with the

degree of financial support as shown in Table 11. Administrator responses indicate the same finding.

4. Since all of the individual educational characteristics do not indicate the positive relation of educational quality and educational financial support which is evident in the analysis of total and category scores, nor consistent findings according to teacher respondents or administrator respondents, one must decide how much relative weight to give to the various individual educational characteristic findings. Since either teacher responses or administrator responses have indicated the negative quality-support relationship for three characteristics (Table 8) as well as a non-significant positive or negative quality-support relationship for three other characteristics (Table 11), it appears that these six educational characteristics considered individually and apart from their respective category score findings or total score findings deserve attention. In regard to individual educational characteristics which show a positive relationship between educational quality and educational financial support, it would appear that the forty-one educational characteristics in Table 7 are the most reliable indicators of this positive relationship since either teacher or administrator responses support this finding.

Summary of Hypothesis I Findings

1. Educational Characteristics Criterion discrimination indicates that according to the total scores of either teachers or administrators, educational quality is present in a significantly higher degree in school districts having high educational financial support than school districts having low educational financial support (Table 5).

2. Educational Characteristics Criterion discrimination indicates that according to each of the following seven category scores of either teachers or administrators in Table 6, educational quality is present in a significantly higher degree in school districts having high educational financial support than school districts having low educational financial support: I, student's level of knowledge and attitudes; II, community attitudes; III, curriculum; IV, use of facilities; V, socio-cultural composition of the community; VI, administration and supervision; VII, the teacher and teaching methods.

3. Educational Characteristics Criterion discrimination indicates that according to each of forty-one individual educational characteristic scores of either teachers or administrators, educational quality is present in a significantly higher degree in school districts having high educational

financial support than in school districts having low educational financial support (Table 7).

4. Educational Characteristics Criterion discrimination indicates that according to each of three individual educational characteristic scores of either teachers or administrators, educational quality is present in a significantly higher degree in school districts having low educational financial support than in school districts having high educational financial support (Table 8).

5. Educational Characteristics Criterion discrimination indicates that according to each of eight individual characteristic scores of teachers, educational quality is present in a significantly higher degree in school districts having high educational financial support than in school districts having low educational financial support (Table 9). Educational Characteristics Criterion non-discrimination indicates that according to administrator scores of these characteristics there is no significant difference in educational quality between high or low educational financial support districts.

6. Educational Characteristics Criterion discrimination indicates that according to one individual educational characteristic score of teachers, educational quality is present

in a significantly higher degree in school districts having low educational financial support than in school districts having high educational financial support (Table 10). Educational Characteristics Criterion non-discrimination indicates that according to administrator scores of this characteristic there is no significant difference in educational quality between high or low educational financial support districts.

7. Educational Characteristics Criterion non-discrimination indicates that according to three individual educational characteristics scores of either teachers or administrators there is no significant difference in educational quality between high or low educational financial support districts (Table 11).

8. The overall indications of the Educational Characteristics Criterion total score, seven category scores, and fifty-six item (educational characteristic) scores reveals that educational quality has a strong positive relationship to financial support for education in Michigan school districts having kindergarten through twelfth grade programs.

Analysis of the Educational Characteristics Criterion Discrimination Ability between Perceptions of Teachers and Administrators within High and Low Financial Support Quartiles and within Individual Large and Small School Districts

The second major null hypothesis is as follows:

The Educational Characteristics Criterion will show no ability to discriminate between 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.

This hypothesis is operationally stated in null form in five sub-hypotheses:

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.

Statistical Procedure

The "t" test was used to determine the presence of a significant difference between the mean scores of teachers and administrators. The level of significance or chance of rejecting the null hypothesis if true was chosen at 0.05. The general procedures which were described and used for the proving of Hypothesis I are in effect for analysis of Hypothesis II. The statistical details are presented in the Appendices as indicated on each table. Since teacher scores of educational characteristics No. 18 (teacher certification) and No. 28 (school accreditation) were obtained from administrators' information (see page 83, Treatment of Data) because of their exact nature and use in the Hypothesis I tests, these characteristics were not useful in the analysis of Hypothesis II regarding the relative perceptions of teachers and administrators. They were included within the total and related category scores for economy of machine tabulation but not analyzed individually.

The presence of a non-significant statistical difference between the mean scores of teachers and administrators indicates agreement of perception between teachers and administrators. The presence of a significant statistical

difference between the mean scores of teachers and administrators indicates a difference of perception between teachers and administrators. A comparison is made between the agreement or difference of perception of teachers and administrators in school districts having high educational financial support with the agreement or difference of perception of teachers and administrators in school districts having low educational financial support. It is expected that this comparison will reveal valuable information regarding the relative perceptions of educational quality by administrators and teachers as represented by total, category, and individual educational characteristic scores which will furnish clues as to communication effectiveness and the relative expectations of administrators and teachers. The presence of administrative dispositions to overvalue or undervalue certain aspects of educational quality will be indicated when administrator mean scores are significantly higher or lower than teacher mean scores within both high and low financial support districts since financial support factors appear to be independent in this case. The presence of a non-significant statistical difference between teacher and administrator mean scores in both high and low financial

support districts will indicate unity of teacher and administrator perceptions regarding educational quality which appears to be independent of financial support factors. Teacher and administrator perception relationships which are different in the two levels of financially supported school districts will indicate the possibility of differences attributable to such factors as communication channels or administrative expectations which are associated with high or low levels of financial support for education.

Results

Within High and Low Financial Support Districts -- Total Scores

On the basis of the significant difference in total mean scores as indicated in Table 13 we accept the null hypothesis:

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

and accept the research hypothesis that the Educational Characteristics Criterion will not discriminate between teacher and administrator responses within the district types.

TABLE 13.--Differences between the total mean scores of teachers and administrators according to high and low educational financial support school districts[8]

Score	High Financial Support Districts		Low Financial Support Districts	
	Teachers	Administrators	Teachers	Administrators
Total	171.54	173.42	145.09	148.51
	NS (P > .05)		NS (P > .05)	

NS indicates a non-significant statistical difference between mean scores

The non-discrimination between teacher and administrator responses indicates that there is agreement between teachers and administrators regarding the total educational quality within high financial support school districts and within low financial support school districts. In other words, the teachers and administrators value educational quality in the same degree as one might expect from professional educational personnel having a similar frame of reference concerning educational quality.

Within High and Low Financial Support Districts--Category Scores

On the basis of the non-significant difference in category mean scores as indicated in Table 14 we accept

[8]See Appendix G for statistical data.

the null hypothesis:

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

for category I (student's level of knowledge), category II (community attitudes), category III (curriculum), category V (socio-cultural composition of the community) and accept the research hypothesis that the Educational Characteristics Criterion will not discriminate between teacher and administrator responses within the district types.

The non-discrimination between teacher and administrator responses indicates that there is agreement between teachers and administrators regarding the valuing of educational quality of each of the above categories within high financial support school districts and within low financial support school districts.

TABLE 14.--Differences between category mean scores of teachers and administrators according to high and low educational financial support school districts[9]

Score	High Financial Support Districts		Low Financial Support Districts	
	T	A	T	A
Category I: Student's Level of Knowledge & Attitudes	17.68	18.15	15.29	15.70
	NS (P > .05)		NS (P > .05)	

[9]See Appendix G for statistical details.

TABLE 14--Continued

Score	High Financial Support Districts		Low Financial Support Districts	
	T	A	T	A
Category II: Community Attitudes	32.22	31.39	26.27	26.87
	NS (P > .05)		NS (P > .05)	
Category III: Curriculum	17.52	17.58	14.25	14.84
	NS (P > .05)		NS (P > .05)	
Category IV: Use of Facilities	3.36	3.57	2.43	2.54
	S (P < .005)		NS (P > .05)	
Category V: Socio-cultural Composition of the Community	29.43	28.73	25.95	25.70
	NS (P > .05)		NS (P > .05)	
Category VI: Administration and Supervision	22.13	23.10	17.39	17.89
	S (P < .005)		NS (P > .05)	
Category VII: The Teacher and Teaching Methods	49.16	50.59	43.45	44.93
	S (P < .025)		S (P < .025)	

On the basis of the significant difference in category mean scores as indicated in Table 14 we reject the null hypothesis:

H4b: Within high and within low financial support districts there is no difference between each category mean score of teachers and administrators for category VII (the teacher and teaching methods) and reject the research hypothesis that the Educational

Characteristics Criterion will not discriminate between teacher and administrator responses within either district type.

The discrimination between the responses of teachers and administrators indicates that there is a difference between their valuing of the educational quality in category VII within high financial support school districts and within low financial support school districts. The higher mean score is made by the administrators within each district type, and so administrators are overvaluing the educational quality of category VII (the teacher and teaching methods) as it applies to their school district in relation to this educational quality viewed by teachers. Since this overvaluing occurs in both district types it appears to be independent of financial support factors. If one assumes that the professional ideals or expectations of teachers and administrators are similar, then overvaluing of the teacher and teaching methods may be the result of the lack of adequate information supplied by communication channels available to administrators in either high or low financial support districts. If one assumes that equally adequate communication exists to provide similar information to

teachers and administrators alike, then it may be that administrators' ideals or expectations regarding the teacher and teaching methods are lower than teachers' ideals or expectations since administrators' mean scores are higher than teachers' mean scores.

On the basis of the significant difference in category mean scores as indicated in Table 14 we reject the null hypothesis:

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

for category IV (use of facilities) and category VI (administration and supervision) in high financial support districts and accept the null hypothesis for both categories in low financial support districts. Therefore the research hypothesis that the Educational Characteristics Criterion will not discriminate between teachers and administrators is rejected for categories IV and VI in high financial support districts and is accepted for categories IV and VI in low financial support districts.

The discrimination indicated within high financial support districts means that there is a difference between teachers and administrators of high financial support

districts in their valuing of educational quality regarding use of facilities and administration and supervision. Furthermore, the high mean score of the administrators indicates the overvaluing of quality in category IV and VI in relation to teachers' valuing. Again, as in the case of the analysis of category VII (teacher and teaching methods), communication inadequacy or lower expectations by administrators may be the reason for this finding.

The non-discrimination indicated for low financial support districts means that there is teacher-administrator agreement regarding their valuing of quality in category IV and VI in low support districts. If one assumes that communication information regarding this quality is adequate in a small school such as is typical in low support districts, one could say that the expectations of teachers and administrators are similar since their ratings of quality in these categories are similar.

In summary, the category score findings indicate that all administrators regardless of the financial support conditions of their school districts overvalue the teacher and teaching methods. This might occur as a result of the general character of the administrative personality,

situational factors of the administrative position, or other factors. The relative adequacy of the information supplied from administrative communication channels or the relative professional expectations of the administrator have been suggested as possible reasons for the cause of the overvaluing of this category by administrators in relation to teacher's valuing.

In addition, the category score findings indicate that administrators in high financial support districts overvalue use of facilities and administration and supervision while administrators in low financial support districts do not overvalue these categories of quality in relation to teachers' valuing. The conditions associated with administrative positions in high financial support districts evidently cause this overvaluing. Assuming similar teacher-administrator expectations, the reason for overvaluing might be lack of information available to administrators upon which to base a rating. Since high financial support districts are typically larger with more communication problems, this explanation appears to have a rational basis.

Within High and Low Financial Support Districts--Educational Characteristic Scores

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

H4c: Within high and within low financial support districts there is no difference between each educational characteristic mean score of teachers and administrators for all educational characteristics listed in Table 15 and we accept the research hypothesis that the Educational Characteristics Criterion will not discriminate between teacher and administrator responses within the district types.

TABLE 15.--Individual educational characteristics which are valued similarly by teachers and administrators within high financial support districts and within low financial support districts[10]

Item No.	Educational Characteristic
Category I:	Student's Level of Knowledge and Attitudes
58	Pupils consider an academic grade of at least "B" to be the norm for academic achievement.
59	The professional staff of the schools in the community consider an academic grade of at least "B" to be the norm for academic achievement.

[10] See Appendix H for statistical data.

TABLE 15--Continued

Item No.	Educational Characteristic
	Category II: Community Attitudes
35	The perceptions of parents and patrons concerning the purposes of education are consistent and clear.
37	There is no lag between the values taught in the school and what is practiced in the community.
44	There are outstanding community leaders in this community who exhibit great interest in school affairs.
27	Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education.
	Category III: Curriculum
10	Teachers perceive a coherent and coordinated structure to the educational program.
11	Consensus exists among the staff concerning the goals of the educational program.
12	A structure has been developed that permits continual curriculum improvement.
	Category V: Socio-cultural Composition of the Community
32	The social status of teachers is very high in this community
41	Cultural experiences are readily available in the community.

TABLE 15--Continued

Item No.	Educational Characteristic
45	This is a highly stable community which does not have too many people leaving.
48	A high percentage of high school students own personal cars.
49	A high percentage of homes own television sets.
	Category VI: Administration and Supervision
16	Professional staff of the school system are involved in in-service education.
29	Lay members of the community are highly involved in the planning of educational goals with the school staff.
33	Regulations governing personnel policies are highly explicit and detailed.
	Category VII: The Teacher and Teaching Methods
8	Teaching practices reflect concern for individual differences.
9	Teaching practices reflect a knowledge of individual differences.
17	Teachers thoroughly understand the information gathered on students and use this information to make educational decisions.
19	Teachers have complete freedom to teach what they consider to be important.

TABLE 15--Continued

Item No.	Educational Characteristic
20	A great variety of instructional techniques are presently used in the classrooms.
38	There exists a high level of cooperation among the teachers of the staff.
40	The community and its residents are used for instructional purposes.

Twenty-four individual educational characteristics listed in Table 15 are valued similarly by teachers and administrators within high financial support districts and within low financial support districts as indicated by the non-discrimination finding. It appears that these characteristics are distributed proportionately to the total number of characteristics within each category. Therefore the finding that there is agreement between teacher responses and administrator responses within high and within low financial support districts according to total scores and according to each of the category scores is generally supported by the findings regarding individual educational characteristic scores.

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

H4c: Within high 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 districts and accept the null hypothesis for the low financial support districts for the ten educational characteristics listed in Table 16. The research hypothesis that the Educational Characteristics Criterion will not discriminate between teacher and administrator responses is rejected for the high financial support districts and accepted for the low financial support districts. The discrimination in high financial support districts occurs in conjunction with a higher teacher mean score than administrator mean score. This means that administrators in high financial support districts are undervaluing the six educational characteristics listed in Part 1 of Table 16. The four educational characteristics listed in Part 2 of Table 16 are overvalued by administrators in high financial support districts since discrimination occurs in conjunction with a higher administrator mean score than teacher mean score for each characteristic.

TABLE 16.--Individual educational characteristics which are undervalued (Part 1) or overvalued (Part 2) by administrators in high financial support districts and are valued similarly by teachers and administrators in low financial support districts[11]

Item No.	Educational Characteristic
	Part 1--Undervalued by Administrators in High Financial Support Districts
	Category II: Community Attitudes
43	A high percentage of the electorate in the community vote in school elections.
46	The community exhibits a great concern for the development of aesthetic and artistic interests.
52	The parents in this community expect their children to perform their share of family chores.
	Category V: Socio-cultural Composition of the Community
51	A high degree of ethnic, racial, and religious homogeneity exists among the local population.
53	This community is composed of people who are predominantly Protestant.
57	One or two ethnic groups comprise the largest number of residents in the community.

[11] See Appendix H for statistical data.

TABLE 16--Continued

Item No.	Educational Characteristic
	Part 2--Overvalued by Administrators in High Financial Support Districts
	Category III: Curriculum
21	A great variety of instructional materials are presently used in the classroom.
	Category IV: Use of Facilities
39	The physical facilities of the school system (buildings and equipment) are completely adequate.
	Category VII: The Teacher and Teaching Methods
24	Teachers often avail themselves of professional help.
50	A great deal of homework is assigned to students.

The findings indicate that administrators of high financial support districts see their community as being less interested in school elections, less culturally-minded, and more heterogeneous in ethnic, racial, and religious aspects (especially Protestant) than do teachers. They also feel that parents are less demanding of their children in regard to chore responsibility than do teachers. Administrators may feel the pressure of many more kinds of community groups

than do teachers. Teachers give parents more credit for responsibility and cultural interests and see a relatively greater homogeneity than administrators. Administrators overvalue teachers and students in the characteristics listed in Part II. It is evident that administrators' information regarding the variety of instructional materials, use of facilities, use of professional help by teachers, and amount of homework assigned to students is probably less than teachers' information. Since teachers would normally have closer contact with students and more extensive contact with parents than administrators in high financial support districts, one might conclude also that the information upon which administrators base their ratings is less accurate than teachers' information. This conclusion appears logical also for the extent of community cultural interests and parental expectations regarding chore work by their children (Part I) since much information about the home is available to the teacher through the students.

Assuming that administrators and teachers have similar professional expectations, it appears that administrators of low financial support districts have a more effective source of information regarding the educational characteristics

listed in Table 16 since there is agreement in the valuing of each of these characteristics by teachers and administrators. This might be expected in the smaller districts that are typical of the low financial support districts since communication regarding these educational characteristics might be expected to be more effective in a relatively smaller area than in the typically large high financial support districts.

Another analysis is possible if one assumes that accurate information is available through the communication channels of administrators in either high or low financial support districts. One might say that administrators in high support districts undervalue the educational characteristics listed in Part 1 as a result of having higher expectations regarding them than do teachers. In other words, if both teachers and administrators are valuing the same characteristic in the light of relatively similar professional education training, the undervaluing of administrators as evident in the lower mean score is explained in the fact that educational quality expectation level is higher than teachers' level of expectations thus resulting in lower scores for the rating of the characteristic. According to

this rationale the three community attitude characteristics listed in Part 1 of Table 16 are undervalued by administrators of high support districts because of relatively higher professional expectations than teachers' expectations. Since there is teacher-administrator agreement in low financial support districts, this means that administrators in high support districts have relatively higher expectations compared to teachers' expectations than do administrators in low support districts regarding these characteristics.

Using the assumption that communication channels of administrators are equally adequate in either high or low financial support districts, the analysis of Part 2 of Table 16 indicates that administrators' expectations regarding the variety of instructional materials used, physical facilities, teacher use of professional help and amount of student homework are lower than teachers' expectations in high support districts.

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

H4c: Within high 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 all eleven educational characteristics listed in Table 17. The research hypothesis that the Educational Characteristics Criterion will not discriminate between teacher and administrator responses is rejected for the low financial support districts and accepted for the high financial support districts. The discrimination in low financial support districts occurs in conjunction with a higher teacher mean score than administrator mean score. This means that administrators in low financial support districts are undervaluing the four educational characteristics listed in Part 1 of Table 17. The seven educational characteristics listed in Part 2 of Table 17 are overvalued by administrators in low financial support districts since discrimination occurs in conjunction with a higher administrator mean score than teacher mean score for each educational characteristic.

TABLE 17.--Individual educational characteristics which are undervalued (Part 1) or overvalued (Part 2) by administrators in low financial support districts and are valued similarly by teachers and administrators in high financial support districts[12]

Item No.	Educational Characteristic
	Part 1--Undervalued by Administrators in Low Financial Support Districts
	Category II: Community Attitudes
62	Parents condone or encourage early dating for their children.
	Category V: Socio-cultural Composition of the Community
54	This community is composed of people who are predominantly Catholic.
56	The population of this community is equally divided between Protestants and Catholics.
	Category VII: The Teacher and Teaching Methods
31	High degree of teacher participation in social and political activities of the community.
	Part 2--Overvalued by Administrators in Low Financial Support Districts
	Category I: Student's Level of Knowledge and Attitudes

[12]See Appendix H for statistical data.

TABLE 17--Continued

Item No.	Educational Characteristic
61	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
47	A two-way communication channel readily exists between the home and school.
60	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
23	A complete comprehensive testing program including intelligence and achievement testing is available in the schools.
	Category VI: Administration and Supervision
30	Regulations governing student conduct are highly explicit and detailed.
	Category VII: The Teacher and Teaching Methods
13	Evidence exists of instructional and/or curricular experimentation.
25	Complete freedom is granted to students to investigate any local, state, national, or international issue.

The findings indicate that administrators of low financial support districts undervalue the encouragement that parents give their children regarding early dating, the proportion of Catholic population and relative proportion of Catholic and Protestant population, and teacher participation in community life. Using the relatively greater number of teacher responses as a norm, it appears that administrators in low support districts are not receiving the same kind of information through their communicative facilities as teachers do through their communicative facilities. If one assumes equal teacher and administrator expectations in regard to the educational characteristics in Part 2 of Table 17, it is evident that the information available from the communication channels of administrators in low financial support districts differs from those of teachers. The academic grade norms, educational values of parents and patrons, student regulations, two-way communication between home and school, testing program, curricular experimentation, and student freedom to investigate issues are overvalued. The overvaluing regarding two-way communication appears to support the basis for the overvaluing of parents' and patrons' educational values and grade norms. The

tendency to overvalue home-school communications also appears to be related to the overvaluing of the explicitness of student regulations. It is possible that teachers and administrators are not rating the same aspects of the testing program and curricular experimentation since a system-wide view by administrators might differ from a building-view of teachers. Administrators in low quality districts overvalue student freedom to investigate issues which may again reflect a lower expectation level with a consequent higher rating value. A possible reason for this might be that administrative expectations tend to be lower as a result of explicit or implicit pressure from the board of education which may or may not represent the desires of community residents. According to analysis of Hypothesis I, student freedom to investigate issues was significantly lower in low quality districts than in high quality districts--a finding which appears to be congruent with tendencies toward lower expectations of administrators in these districts. Perhaps this reflects indirectly (through influence on boards of education) the reluctance of parents to give permission to teachers to lead students toward investigating contemporary local, state, national, or

international issues which might conflict with their own family or community social or political norms.

One might analyze the administrative overvaluing of the other characteristics in Part 2 of Table 17 as being the result of lower expectations on their part than those of teachers, communication information being assumed equal. It might be fruitful to investigate the relative age of teachers and their administrators in order to determine relative differences in expectation as a result of type of training and experience. Could older administrators who have been in low financial support districts for a considerable number of years have lower expectations than younger teachers who have had more recent educational training? Could administrators of low financial support districts who have older, more experienced teachers in their districts have lower expectations than the teachers? The relative length of service by teachers in their present school district is an important factor to consider also. Community attitudes and factors associated with the community composition are likely to affect school personnel in their attitudes and expectations. Whatever the effect of all the various factors mentioned above, the fact remains that according to the

research sample of thirty-nine school districts having low financial support, administrators are overvaluing the seven educational characteristics listed in Part 2 of Table 17.

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

H4c: Within high 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 that the Educational Characteristics Criterion will not discriminate between teachers' and administrators' responses within either high or low financial support districts for all educational characteristics listed in Table 18. The discrimination occurs in conjunction with a higher teacher mean score than administrator mean score for the characteristic listed in Part 1 thus indicating a relative undervaluing of it by administrators. The six characteristics listed in Part 2 are overvalued by administrators since the discrimination occurs in conjunction with a relatively higher administrator mean score for each characteristic listed.

TABLE 18.--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[13]

Item No.	Educational Characteristic
	Part 1--Undervalued by Administrators
	Category V: Socio-cultural Composition of the Community
55	This community is composed of people who are predominantly Jewish.
	Part 2--Overvalued by Administrators
	Category I: Student's Level of Knowledge and Attitudes
14	Students show a positive attitude toward scholastic work.
15	Students evidence accurate knowledge of self.
22	Students are knowledgeable about the educational and social opportunities available to them.
	Category VI: Administration and Supervision
42	Teachers' judgments are almost always used in the determination of educational policies.
	Category VII: The Teacher and Teaching Methods
7	Teachers have intimate knowledge of children.
26	Availability to students of materials that reflect all shades of political and sociological points of view.

[13] See Appendix H for statistical data.

Since administrative undervaluing or overvaluing of the educational characteristics occurs in both high and low financial support districts, it appears likely that factors independent of financial support are influential in stimulating this consistent undervaluing or overvaluing. The nature of the administrative personality, training, experience, or situational factors may be responsible. Overvaluing appears to be more prevalent since only one of seven characteristics are undervalued, the rest being overvalued. Assuming equal expectations of teachers and administrators, it is probable that through closer contact with students and consequent availability of parental information, teachers would have a better basis upon which to judge the proportion of Jewish population in the school community. It is especially noticeable that all three characteristics regarding desirable student achievements other than academic grades such as attitudes, knowledge of self, and knowledge of opportunities are overvalued by administrators regardless of district type. Assuming equal teacher-administrator expectations, this means that administrators, being more remote from daily contact with students, do not have the information they should have in order to make a comparable judgment with teachers regarding these characteristics.

Also overvalued by administrators regardless of the level of district financial support are the use of teachers' judgments in policy-making, teachers' knowledge of children, and availability to students of materials that reflect all points of view. Assuming equal expectations by teachers and administrators, it appears as though administrators do not have access to adequate information regarding many aspects of their schools. There may be an exception regarding the use of teachers' judgments in policy-making. It appears reasonable to assume that in this case adequate information must necessarily be available to administrators, and so the overvaluing of the characteristic is caused by a relative difference in expectations between administrators and teachers with administrators having the lower expectations. A general tendency has been for administrators to rely predominantly on administrative judgments rather than teacher judgments in the determination of policies, and this tendency appears to be present in the findings.

Assuming equal available information from communication channels in both high and low support districts, one could

say that the reason for undervaluing or overvaluing by administrators is that their expectations or professional norms are respectively higher or lower than teachers' norms. Perhaps administrators do not expect as much in the area of student outcomes such as attitudes and self-knowledge as do teachers. In this case the administrators' mean score would be higher than teachers' mean score resulting in a conclusion of the presence of overvaluing by administrators. According to the same rationale, one could say that there is a general administrative pre-disposition to expect less in the use of teacher judgments, teachers' knowledge of children, and variety of materials available to students. Could this pre-disposition be a result of the training that administrators receive or because of the situational factors of their positions that tend to create different levels of expectations than those of teachers regardless of the degree of financial educational support. It is probable that in order to know the effect of expectations on professional personnel in education a controlled study of communication factors would have to be made. Likewise, expectations would have to be controlled in order to study communication information effects on the overvaluing and undervaluing by

administrators in relation to teachers' valuing.

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

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

for educational characteristics listed in Table 19 and reject the research hypothesis that the Educational Characteristics Criterion will not discriminate between teacher and administrator responses for each characteristic. Since the discrimination occurs in conjunction with a lower administrator mean score than teacher mean score this means that administrators in high support districts are undervaluing the one characteristic listed in Part 1 of Table 19. This same characteristic is being overvalued by administrators in the low support districts since the discrimination occurs in conjunction with a higher administrative mean score than teacher mean score. According to the same rationale the one educational characteristic listed in Part 2 of Table 19 is being overvalued by administrators in high support districts and undervalued by administrators in low support districts.

TABLE 19.--Individual educational characteristics which are undervalued by administrators in high financial support districts and overvalued by administrators in low financial support districts (Part 1) and are overvalued by administrators in high financial support districts and undervalued by administrators in low financial support districts (Part 2)[14]

Item No.	Educational Characteristic
	Part 1--Undervalued by Administrators in High Support Districts and Overvalued by Administrators in Low Support Districts
	Category II: Community Attitudes
36	The local newspaper has shown a high interest in local school affairs.
	Part 2--Overvalued by Administrators in High Support Districts and Undervalued by Administrators in Low Support Districts
	Category VI: Administration and Supervision
34	Citizens are highly organized to discuss school problems.

It is evident that factors associated with the relative degree of educational financial support are affecting the administrators within high support districts and within low support districts. These factors probably do not affect the

[14] See Appendix H for statistical data.

administrators in each district type in the same manner. If one assumes equal available information between teachers and administrators, then it is likely that administrators have higher expectations than teachers in high support districts and administrators have lower expectations than teachers in low support districts regarding the local newspaper's interest in local school affairs. It is probable that administrators in high support districts have higher expectations in view of the potential capabilities of a more highly educated and industrially competent population which is typically associated with high financial support districts. Consequently the administrators tend to undervalue the degree in which this educational characteristic is present. The situation is reversed regarding the degree to which citizens are organized to discuss school problems (listed in Part 2 of Table 19). Administrators in high support districts tend to overvalue their efforts in their organization of citizens. They place considerable faith in organization of citizens to cope with the tremendous problem of securing satisfactory home-school relationships in a populous heterogeneous community. Administrators in low support districts undervalue their citizens' organization and probably logically

so when one considers the sparseness of population so typical of low support districts in rural and semi-rural areas which is not conducive to organization of citizens to discuss education.

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

1. Educational Characteristics Criterion non-discrimination between the total mean scores of teachers and administrators within high financial support districts and within low financial support districts indicates that there is agreement between teachers and administrators within each district type as to the total educational quality of the district.

2. Educational Characteristics Criterion non-discrimination between the category mean scores of teachers and administrators within high financial support districts and within low financial support districts indicates that there is agreement between teachers and administrators within each district type as to the educational quality represented in category I, student's level of knowledge; category II, community attitudes; category III, curriculum; and category V, socio-cultural composition of the community.

3. Educational Characteristics Criterion discrimination between the category mean scores of teachers and administrators within high financial support districts and within low financial support districts indicates that administrators are overvaluing category VII, the teacher and teaching methods, within each district type.

4. Educational Characteristics Criterion discrimination between the category mean scores of teachers and administrators within high financial support districts indicates that administrators are overvaluing category IV, use of facilities, and category VI, administration and supervision. Non-discrimination between the category mean scores of teachers and administrators within low financial support districts indicates that teachers and administrators agree as to the educational quality represented by these categories.

5. Educational Characteristics Criterion non-discrimination between the individual educational characteristic mean scores of teachers and administrators within high financial support districts and within low financial support districts indicates that there is agreement between teachers and administrators within each district type as to the educational quality represented in each of the

twenty-four educational characteristics (Table 15).

6. Educational Characteristics Criterion discrimination between the individual educational characteristic mean scores of teachers and administrators within high financial support districts indicates that administrators are undervaluing the educational quality as represented in each of six educational characteristics and overvaluing the educational quality as represented in each of four other educational characteristics (Table 16). Non-discrimination between the individual educational characteristic mean scores within low financial support districts indicates that teachers and administrators within these districts agree as to the educational quality represented in these characteristics.

7. Educational Characteristics Criterion discrimination between individual educational characteristic mean scores of teachers and administrators within low financial support districts indicates that administrators are undervaluing the educational quality represented by four educational characteristics and overvaluing the educational quality represented by seven other educational characteristics (Table 17). Non-discrimination between the individual educational characteristic mean scores within high financial support districts indicates that teachers and administrators within these

districts agree as to the educational quality represented in these characteristics.

8. Educational Characteristics Criterion discrimination between individual educational characteristic mean scores of teachers and administrators within high financial support districts and within low financial support districts indicates that administrators are undervaluing the educational quality as represented by one educational characteristic according to both district types. Discrimination between individual educational characteristic mean scores of teachers and administrators in each district types indicates that administrators are overvaluing the educational quality as represented by six educational characteristics according to each district type (Table 18).

9. Educational Characteristics Criterion discrimination between individual educational characteristic mean scores of teachers and administrators within high financial support districts indicates that administrators are undervaluing the educational quality represented by one characteristic and discrimination between the individual educational characteristic mean scores of teachers and administrators within low financial support districts indicates that administrators are overvaluing the educational quality

represented by the same characteristics (Table 19). Discrimination also indicates that administrators in high financial support districts are overvaluing the educational quality represented by one educational characteristic while administrators in low financial support districts are undervaluing the educational quality represented in the same characteristic.

Results of Within District Tests--
Total Scores

Hypothesis II is tested to determine differences in the responses of teachers and administrators within a large school district typical of the high financial support districts sample and within each of two small districts typical of the low financial support school districts sample, and to identify any variations from the results of the tests concerning the high financial support quartile of districts and low financial support quartile of districts. In order to test for outstanding variations only total mean scores and each of seven category mean scores were used.

District No. 1 was selected as a representative of a large district within the high financial support districts sample. There are 405 teachers (about forty per cent of the total number) and 61 administrators (about eighty per cent

of the total number) in this district sample. District No. 10 and District No. 37 were selected as representatives of small districts within the low financial support districts sample. District No. 10 sample has 28 teachers (about ninety per cent of the total number) and three administrators (about eighty per cent of the total number). District No. 37 sample has ten teachers (about fifty per cent of the total number) and three administrators (one hundred per cent of the total number).

On the basis of the significant difference in total mean scores as indicated in Table 20 we reject the null hypothesis:

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

for District No. 1 and accept the null hypothesis for Districts No. 10 and No. 37. The research hypothesis that the Educational Characteristics Criterion will not discriminate between responses of teachers and administrators is rejected for District No. 1 and accepted for Districts No. 10 and No. 37. The discrimination indicated for District No. 1 means that there is a significant difference in the valuing of total educational quality in the school district between teachers and administrators. The non-discrimination

indicated for District No. 10 and District No. 37 means that teachers and administrators within each of these two districts agree as to the total educational quality of their school districts.

TABLE 20.--Differences between the total mean scores of teachers and administrators within Districts No. 1, No. 10, and No. 37[15]

District	Teachers	Administrators	Significance of Difference
No. 1 (Large)	167.34	172.18	S ($P < .05$)
No. 10 (Small)	146.25	146.33	NS ($P > .05$)
No. 37 (Small)	146.80	152.33	NS ($P > .05$)

The finding that there is a significant difference between the perceptions of teachers and administrators regarding total educational quality within District No. 1 (a large district in the high financial support quartile) indicates a variation from the finding that teachers and administrators agree on total educational quality according to the entire high financial support quartile. While the difference in valuing of teachers and administrators in District No. 1 was just sufficient to be significant at

[15]See Appendix I for statistical data.

$P < .05$ level, the entire quartile difference of teachers and administrators was $P > .05$ (actually $P > .30$), thus denoting a strong non-significant difference or strong agreement.

The finding that there is a non-significant difference or agreement between the valuing of teachers and administrators in District No. 10 and in District No. 37 (small districts in the low financial support quartile) supports the finding that there is teacher-administrator agreement as to total educational quality according to the entire low financial support quartile. The individual district tests show stronger agreement however since the teacher-administrator non-significant difference was indicated at $P > .90$ for District No. 10 and at $P > .60$ for District No. 37 while the entire low financial support quartile tests showed the non-significant difference indicated at $.10 > P > .05$. Thus it is evident that conditions peculiar to individual school districts will cause differences in teacher-administrator perceptions regarding educational quality that may vary from the relationships indicated from a large sample of teacher and administrator respondents within an entire financial support quartile.

Results of Within Districts Tests--Category Scores

On the basis of the non-significant difference in category mean scores as indicated in Table 21 we accept the null hypothesis:

H5b: Within individual large districts and within individual small school districts there is no difference between category mean scores of teachers and administrators for all category scores listed for District No. 1, No. 10, and No. 37, except category VI, administration and supervision, and category VII, teacher and teaching methods, for District No. 1. The research hypothesis that the Educational Characteristics Criterion will not discriminate between teacher and administrator responses is accepted for all category scores except category VI and VII scores of District No. 1. The null hypothesis is rejected and the research hypothesis is rejected for category VI and VII scores of District No. 1.

TABLE 21.--Differences between the category mean scores of teachers and administrators within Districts No. 1, No. 10, and No. 37[16]

Score	District No. 1		District No. 10		District No. 37	
	T	A	T	A	T	A
Category I: Student's Level of Knowledge and Attitudes	16.92	17.91 NS	14.28	13.66 NS	15.60	16.33 NS
Category II: Community Attitudes	30.02	30.34 NS	26.60	29.66 NS	25.50	27.33 NS
Category III: Curriculum	17.15	17.77 NS	14.32	12.00 NS	15.40	16.00 NS
Category IV: Use of Facilities	3.43	3.60 NS	2.64	3.00 NS	3.10	4.00 NS
Category V: Socio-cultural Composition of the Community	29.26	28.68 NS	26.35	27.33 NS	24.50	23.00 NS
Category VI: Administration and Supervision	22.33	23.50 S ($P < .005$)	18.35	18.66 NS	18.10	17.33 NS
Category VII: The Teacher and Teaching Methods	48.20	50.36 S ($P < .005$)	43.67	41.66 NS	44.60	48.30 NS

[16]See Appendix I for statistical data. The significance level used in Table 21 is $P > .05$, except where indicated.

The non-discrimination indicated between teacher and administrator responses means that there is agreement between teachers and administrators regarding the educational quality of each of the seven categories within the three districts with the exception of the two noted categories of District No. 1. The discrimination indicated between teachers and administrators for these two categories means that there is a significant difference in valuing by teachers and administrators. Excepting category IV, use of facilities, the findings of the individual large districts tests support the findings of the high financial support district sample tests. Excepting category VII, the teacher and teaching methods, the findings of the individual small districts tests support the findings of the low financial support district sample tests. It is evident that variations within school districts are associated with differences in valuing of quality by teachers and administrators as represented by the category scores. It appears that differences may occur within high financial support districts to a greater degree than within each of the low financial support districts according to these brief tests. The establishment of this conclusion must depend on the results of many individual

district tests which is a problem for future research. It also appears that the valuing of quality by teachers and administrators shows stronger agreement in the small individual districts typically having low financial support than in large districts typically having high financial support.

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

1. Educational Characteristics Criterion non-discrimination between teacher and administrator total mean scores within each of two small districts in the low financial support districts sample indicates that there is agreement between teachers and administrators as to the total educational quality within each of these districts.

2. Educational Characteristics Criterion discrimination between teacher and administrator total mean scores within one large district in the high financial support districts sample indicates that there is a significant difference between the perceptions of teachers and administrators as to the total educational quality within this district.

3. Educational Characteristics Criterion non-discrimination between teacher and administrator category mean scores

within each of two small districts in the low financial support districts sample indicates that there is agreement between teachers and administrators as to the educational quality represented by each of the following seven categories in their school district: (I) student's level of knowledge, (II) community attitudes, (III) curriculum, (IV) use of facilities, (V) socio-cultural composition of the community, (VI) administration and supervision, and (VII) the teacher and teaching methods.

4. Educational Characteristics Criterion non-discrimination between teacher and administrator category mean scores within one large district in the high financial support districts sample indicates that there is agreement between teachers and administrators as to the educational quality represented by each of the following five categories in their school district: (I) student's level of knowledge, (II) community attitudes, (III) curriculum, (IV) use of facilities, and (V) socio-cultural composition of the community. Discrimination between teacher and administrator category mean scores within this district indicates that there is a significant difference between the perceptions of teachers and administrators as to the educational quality

represented by category VI, administration and supervision and category VII, the teacher and teaching methods.

5. With two exceptions the findings regarding teacher-administrator agreement as to educational quality by categories within individual school districts support the findings of tests regarding each of the entire research samples of high financial support quartile of districts and low financial support quartile of districts. The exceptions were category IV, use of facilities for the high financial support quartile and category VII, the teacher and teaching methods, for the low financial support quartile.

Analysis of the Educational Characteristics Criterion Reliability within High and Low Financial Support Quartiles

The third major null hypothesis is as follows:

The Educational Characteristics Criterion will not show high reliability within the high financial support quartile of districts and within the low financial support quartile of districts.

This hypothesis is operationally stated in null form in two sections:

H6(a--d): There will not be high consistency in individual educational characteristic scores and total scores of (a) teacher respondents of high financial support

quartile of districts, (b) administrator respondents of high financial support quartile of districts, (c) teacher respondents of low financial support quartile of districts, and (d) administrator respondents of low financial support quartile of districts.

H-7(a--d): There will not be high consistency in individual educational characteristic scores and related category scores of (a) teacher respondents of high financial support quartile of districts, (b) administrator respondents of high financial support quartile of districts, (c) teacher respondents of low financial support quartile of districts, and (d) administrator respondents of low financial support quartile of districts.

Statistical Procedure

The test used is the Hoyt analysis of variance for the estimation of reliability from consistency of individual performance upon the test items.[17] An assumption of this test is that the score of an individual may be divided into four independent (mutually uncorrelated) components, as follows: (1) a component common to all individuals and to all items, (2) a component associated with the item, (3) a component associated with the individual, (4) an error component that is independent of 1, 2, and 3. Reliability may be estimated from the expression: variance among individual scores minus error variance divided by variance among individual scores.

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

Two statistics are used--the F and V.[18] The F ratio of the mean square for the individuals to the residual mean square is used to accept the hypothesis or reject the hypothesis if the F value exceeds the critical region: $F > F_{.99}$ (row N-1)(column N-1) degrees of freedom. The rejection of F indicates that there are individual score variations which significantly exceed error variation effects, thus proving that the test measures with sufficient accuracy to distinguish between individuals tested. The V measures the sensitivity of the test by determining the relative accuracy of measurement according to the relation between the magnitude of the errors of measurement and the size of the differences among individuals. V is the standard deviation of the distribution of true scores divided by the standard deviation of error of measurement. The error mean square is subtracted from the mean square between individuals and the result is divided by the error mean square. The relation between Jackson's V and the reliability coefficient r_{tt} is:

$$V \text{ equals } \sqrt{\frac{r_{tt}}{1 - r_{tt}}} .$$

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[18] Robert W. B. Jackson, "Reliability of Mental Tests," British Journal of Psychology, Vol. XXIX (1939), pp. 267-287 and J. C. Hoyt, op. cit.

V is interpreted on the normal probability scale in the following manner: if V equals 2.56 we would expect to make an error as great or greater than one standard deviation of the true scores only once in a hundred times or according to the normal curve table for a two-sided test, exactly 0.0105 times.

Results

Total Score Reliability Within Quartiles

Based on the reliability test results listed in Table 22 we reject the null hypothesis:

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

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

TABLE 22.--Reliability and sensitivity significance level of ECC total scores of teachers and of administrators within the high financial support quartile of districts and within the low financial support quartile of districts.[19]

Score	Teachers		Administrators	
	r_{tt}	p	r_{tt}	p
	High Financial Support Quartile			
Total	0.90	0.002	0.90	0.001
	Low Financial Support Quartile			
Total	0.95	0.000001	0.89	0.004

It is evident from the results in Table 22 that the Educational Characteristics Criterion has highly reliable total scores for teachers or for administrators in either high or low financial support quartile of school districts.

Category Score Reliability Within Quartiles

Based on the reliability test results listed in Table 23 we reject the null hypothesis:

H7: There will not be high consistency in individual educational characteristic scores and related category scores of (a) teacher respondents of high financial support quartile of districts for category I (student's level of knowledge and attitudes), category II (community attitudes), and category VII (the teacher and teaching methods); of (b) administrator respondents of the high financial support quartile of districts for category I, II, and VII; of (c)

[19] See Appendix J for statistical data.

teacher respondents of the low financial support quartile of districts for category I, II, III (curriculum), and VII; of (d) administrator respondents of the low financial support quartile for category III and VII.

and accept the research hypothesis that the Educational Characteristics Criterion shows high reliability within the high and low financial support quartiles of districts according to the categories listed above.

Based on the reliability test results listed in Table 23 we accept the null hypothesis:

H7: There will not be high consistency in individual educational characteristic scores and related category scores of (a) teacher respondents of high financial support quartile of districts for category III (curriculum), category V (socio-cultural composition of the community), and category VI (administration and supervision); of (b) administrator respondents in the high financial support quartile of districts for category III, V, and VI; of (c) teacher respondents in the low financial support quartile of districts for category V and VI; of (d) administrator respondents in low financial support quartile of districts for category I (student's level of knowledge and attitudes), category II(community attitudes), category V, and category VI.

and reject the research hypothesis that the Educational Characteristics Criterion shows high reliability within the high and low financial support quartiles of districts according to the categories listed above.

TABLE 23.--Reliability and sensitivity significance level of ECC category scores of teachers and of administrators within high financial support quartile of districts and within low financial support quartile of districts[20]

Score	Teachers		Administrators	
	r_{tt}	P	r_{tt}	P
High Financial Support Quartile				
Category I: Student's Level of Knowledge and Attitudes	0.77	0.06	0.71	0.11
Category II: Community Attitudes	0.80	0.04	0.76	0.07
Category III: Curriculum	0.67	0.15	0.69	0.13
Category IV: Use of Facilities	(no test possible--1 item in category)			
Category V: Socio-cultural Composition of Community	0.39	0.42	0.46	0.35
Category VI: Administration and Supervision	0.61	0.20	0.65	0.17
Category VII: The Teacher and Teaching Methods	0.75	0.08	0.79	0.05

[20]See Appendix J for statistical data.

TABLE 23--Continued

Score	Teachers		Administrators	
	r_{tt}	P	r_{tt}	P
Low Financial Support Quartile				
Category I: Student's Level of Knowledge and Attitudes	0.75	0.08	0.70	0.13
Category II: Community Attitudes	0.78	0.05	0.68	0.14
Category III: Curriculum	0.74	0.09	0.74	0.09
Category IV: Use of Facilities	(no test possible--1 item in category)			
Category V: Socio-cultural Composition of Community	0.43	0.37	0.14	0.70
Category VI: Administration and Supervision	0.68	0.14	0.61	0.20
Category VII: The Teacher and Teaching Methods	0.80	0.04	0.78	0.10

The definition of high reliability in this analysis was from 0.71 to 1.00 (sensitivity significance level of 0.11).

There were twenty-four possible category tests (six testable categories according to two respondent types within two district types). Twelve of the twenty-four tests showed high category reliability. Eight other tests showed reliabilities closely approaching the defined lower limit of high reliability (0.71), these being from 0.61 and higher (sensitivity significance level of 0.20 or less). Thus twenty of the twenty-four possible tests show that the Educational Characteristic Criterion category scores are operationally usable within extended reliability limits. The most unreliable category is V (socio-cultural composition of the community). This fact should be taken into account in the conclusions regarding the first two hypotheses of this study.

Analysis of the Educational Characteristics Criterion Reliability Within Individual Large and Small School Districts

The fourth major null hypothesis is as follows:

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

This hypothesis is operationally stated in null form in two sections:

H8(a--d): There will not be high consistency in individual educational characteristic scores and total

scores of (a) teacher respondents of large districts, (b) administrator respondents of large districts, (c) teacher respondents of small districts, and (d) administrator respondents of small districts.

H9(a--d): There will not be high consistency in individual educational characteristic scores and related category scores of (a) teacher respondents of large districts, (b) administrator respondents of large districts, (c) teacher respondents of small districts, and (d) administrator respondents of small districts.

The statistical procedures used for the reliability tests of the third hypothesis are also used for the reliability tests of the fourth hypothesis. The rejection of F indicates the ability of the instrument to significantly distinguish between the scores of individuals. The significance of the reliability coefficient r_{tt} is indicated by the significance level of the sensitivity coefficient V or the standard deviation of the distribution of true scores divided by the standard error of measurement.

Results

Total Score Reliability Within Individual Districts

Based upon the results of the reliability tests as listed in Table 24 we reject the null hypothesis:

H8: There will not be high consistency in the individual educational characteristic scores and total scores

of (a) teacher respondents of large districts, (b) administrator respondents of large districts, and (c) teacher respondents of small districts.

and accept the research hypothesis that the Educational Characteristics Criterion shows high reliability within these individual district types.

Based upon the results listed in Table 24 we accept the null hypothesis H8d for administrators of small districts and reject the research hypothesis that the Educational Characteristics Criterion shows high reliability within this individual district type.

It is evident from the results of Table 24 that the Educational Characteristics Criterion has very high total score reliability except for administrators in small districts. The number of administrators in each small district was three, and this small number probably accounts for the low reliability coefficient.

Category Score Reliability Within Individual Districts

Based upon the reliability test results as listed in Table 25 we reject the null hypothesis:

H9: There will not be high consistency in individual educational characteristic scores and related category scores of the following respondent types--

TABLE 24.--Reliability and sensitivity significance level of ECC total scores of teachers and of administrators within a large individual district and within two small individual districts[21]

Score	Large District (No. 1)				Small District (No. 10)				Small District (No. 37)			
	T (N=405)		A (N=61)		T (N=28)		A (N=3)		T (N=10)		A (N=3)	
Total	r_{tt}	P	r_{tt}	P	r_{tt}	P	r_{tt}	P	r_{tt}	P	r_{tt}	P
	0.90	0.001	0.91	0.0009	0.93	0.0003	0.21	0.61	0.93	0.0001	0.50	0.47

[21] See Appendices K, L, and M for statistical data.

(a) teachers of large districts for category scores I (student's level of knowledge and attitudes); II (community attitudes); and VII (the teacher and teaching methods).

(b) administrators of large districts for category scores I (student's level of knowledge and attitudes); VII (the teacher and teaching methods).

(c) teachers of small districts for category score VII (the teacher and teaching methods).

We accept the research hypothesis that the Educational Characteristics Criterion will show high reliability for these respondent types according to individual small and large districts.

Based upon the results of the reliability tests as listed in Table 25 we accept the null hypothesis:

H9: There will not be high consistency in the individual educational characteristic scores and related category scores of the following respondent types--

(a) teachers of large districts for category scores III (curriculum); V (socio-cultural composition of the community); and VI (administration and supervision).

(b) administrators of large districts for category scores II (community attitudes); III (curriculum); V (socio-cultural composition of the community); and VI (administration and supervision).

(c) teachers of small districts for category scores I (student's level of knowledge and attitudes); II (community attitudes); III (curriculum); V (socio-cultural composition of the community); and VI (administration and supervision).

(d) administrators of small districts for all the category scores--I (student's level of knowledge and attitudes); II (community attitudes); III (curriculum); IV (use of facilities); V (socio-cultural composition of the community); VI (administration and supervision); and VII (the teacher and teaching methods).

We reject the research hypothesis that the Educational Characteristics Criterion will show high reliability for these respondent types according to individual small or large districts.

From an examination of the reliability tests of the consistency between individual educational characteristic scores and their related category scores it is evident that there is great variability in reliability coefficients within individual large and small districts. Category I (student's level of knowledge and attitudes), category II (community attitudes), and category VII (the teacher and teaching methods) have high reliability for teachers in individual large districts and category I and VII have high reliability for administrators in individual large districts. The definition of high reliability selected for the category tests was the same level used in the reliability tests within quartiles of districts being 0.71 (sensitivity significance level of 0.11). If the defined lower limit of reliability

TABLE 25.--Reliability and sensitivity significance level of a large individual district and within two small individual

	Large District (No. 1)			
	T		A	
	r_{tt}	P	r_{tt}	P
Category I: Student's Level of Knowledge and Attitudes	.81	.03	.73	.09
Category II: Community Attitudes	.76	.07	.69	.13
Category III: Curriculum	.69	.13	.68	.14
Category IV: Use of Facilities	No test 1 item in category			
Category V: Socio-cultural Composition of Community	.44	.36	.50	.31
Category VI: Administration and Supervision	.59	.23	.69	.13
Category VII: The Teacher and Teaching Methods	.78	.05	.83	.02

[22]See Appendices K, L, and M for statistical data.

ECC category scores of teachers and of administrators within districts[22]

Small District (No. 10)				Small District (No. 37)			
T		A		T		A	
r_{tt}	P	r_{tt}	P	r_{tt}	P	r_{tt}	P
.85	.016	.73	.09	.17	.65	.00	.00
.57	.25	.85	.02	.81	.03	.00	.00
.51	.31	.00	.00	.82	.03	.00	.00
-	-	-	-	-	-	-	-
.34	.47	.00	.00	.14	.68	.00	.00
.70	.12	.21	.60	.79	.05	.51	.30
.81	.03	.37	.46	.95	.00004	.00	.00

of 0.72 were extended to approximately 0.68 (sensitivity significance level of 0.14), then category III (curriculum) could be included for teachers of individual large districts and category II (community attitudes), category III (curriculum), and category VI (administration and supervision) could be included for administrators of large districts. Category VI (administration and supervision) could be included for teachers of individual small districts. The summary which follows clarifies the reliability of each respondent class.

Summary

1. Using the coefficient range of 0.71 to 1.00 as the definition of "high reliability" which for the sample used has a sensitivity significance level of 0.11 or less, the following reliability results were obtained for tests within individual districts:

(a) Teachers of one large district (in the high financial support quartile): high reliability of total score (0.91) and category I score (student's level of knowledge and attitudes), category II score (community attitudes), and category VII score (the teacher and teaching methods).

(b) Administrators of one large district (in the high financial support quartile): high reliability of total score (0.90) and category I score (student's level of knowledge and attitudes) and category VII score (the teacher and teaching methods).

(c) Teachers of small individual districts (in low financial support quartile based upon agreement of results within two individual small districts having ten and twenty-eight teacher respondents respectively): high reliability in total score and category VII score (the teacher and teaching methods).

(d) Administrators of small individual districts (in low financial support quartile based upon agreement of results within two individual small districts each having three administrator respondents): no highly reliable total or category scores.

2. Using the coefficient of 0.68 as an extended lower limit of reliability which may have operational usability with a sensitivity significance level of 0.14 or less, the following reliability results may be added to those listed in paragraph one above:

(a) Teachers of one large district (in the high financial

support quartile): category III score (curriculum).

(b) Administrators of one large district (in high financial support quartile): Category II score (community attitudes), category III score (curriculum), category VI score (administration and supervision).

(c) Teachers of small individual districts (in low financial support quartile): category VI score (administration and supervision).

(d) Administrators of small individual districts (in low financial support quartile): none.

3. The findings indicate that the Educational Characteristics Criterion total scores are highly reliable according to within individual district tests for large districts according to teachers or administrators. Within individual small districts the total scores of teachers were highly reliable but the total scores of administrators were not highly reliable, both district tests showing low reliability.

4. The majority of category scores have reliability that may be regarded as operationally useful for teachers or administrators within extended limits of the definition of reliability. The relatively low number of administrator respondents (three) probably accounts for low reliability

coefficients of this respondent class in small districts. This factor also affects reliability of teacher scores in small districts since only two category scores (VI and VII) have fair or high reliability within both of the small districts.

5. Category V (socio-cultural composition of the community) has relatively low reliability within all individual large or small districts. This finding is consistent with its low reliability in the tests within quartiles of districts as described in the analysis of Hypothesis III of this study.

Analysis of the Educational Characteristics Criterion Item Discrimination

The fifth major null hypothesis is as follows:

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

The testing of this hypothesis involves the determination of the proportion of high scores made by the high scoring group of respondents in relation to the proportion of high scores made by the low scoring group of respondents. This determination is made for individual educational characteristics in relation to total score and to each category

score. The relationship is concisely expressed in the point biserial correlation coefficient used which is the appropriate type for distributions of scores in these tests. Accordingly, the null hypotheses used will be expressed in reference to the correlation coefficient as follows:

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 respective category score differs significantly from zero.

Statistical Procedure:

An analysis of the distribution of the 1962 grand total scores of teacher respondents showed that the distribution was continuous and normal. An examination of the distribution of educational characteristic scores for each of the 56 Educational Characteristics Criterion items showed that normality of distribution was rare. It was decided to dichotomize each educational characteristic distribution according to the following plan: High group--score 3 and 4, Low group score 1 and 2. The total score distribution was divided at the median. The point biserial coefficient of correlation between educational characteristic scores and total scores and between each educational characteristic

and its respective category score was considered the appropriate measure to use. For rapid calculation an abac was used which is designed for estimates of the point biserial correlation coefficient (r_{pbis}) when one variable which is divided at the median.[23] To test the significance of the correlation the "t" test in the following form was used:

$$t = r\sqrt{\frac{n - 2}{1 - r^2}}$$

for n-2 or 981-2 degrees of freedom. The null hypothesis for this test is that the value obtained for "r" is that of a random sample from a population of paired variables having a correlation of zero (H: $p_{bis} = 0$). A two-tailed table was used to determine the correlation significance level. For 979 degrees of freedom the minimum correlation to be significant at the 0.01 level was 0.08.

Results

Based on the analysis in Table 26 we reject the null hypothesis:

H9: The correlation coefficient for the relation of each educational characteristic score to total quality score does not differ significantly from zero

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[23] J. P. Guilford, Psychometric Methods (2nd ed.; McGraw-Hill Book Co.), Fig. 15.3, p. 429.

for all educational characteristics except No. 19 and No. 52 and accept the research hypothesis that the educational characteristics have adequate positive discrimination power with respect to the total quality score. For each educational characteristic there is a significantly higher proportion of high scores made by high scoring group of respondents than by low scoring group of respondents with respect to the total quality score. The null hypothesis is accepted for characteristic No. 19, category VII ("Teachers have complete freedom to teach what they consider to be important") and characteristic No. 52, category II ("The parents in this community expect their children to perform their share of family chores"). These two characteristics do not have significant positive discrimination power.

Based on the analysis in Table 26 we reject the null hypothesis:

H10: 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. 19 and No. 52 and accept the research hypothesis that the educational characteristics have adequate positive discrimination power with respect to the related quality score. For each

TABLE 26.--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

No.	(1)	(2)	No.	(1)	(2)
Category I: Student's Level of Knowledge and Attitudes			Category V (cont.)		
14	.57	.55	49	.14	.14
15	.57	.53	51	.34	.20
22	.50	.50	53	.10	.08
58	.66	.41	54	.32	.20
59	.60	.30	55	.30	.20
61	.68	.48	56	.40	.24
Category II: Community Attitudes			57	.43	.17
27	.65	.62	Category VI: Administration and Supervision		
35	.64	.62	16	.60	.54
36	.54	.52	28	.20	.21
37	.59	.54	29	.64	.57
43	.50	.43	30	.49	.37
44	.60	.55	33	.62	.52
46	.68	.64	34	.66	.60
47	.63	.62	42	.43	.48
52	.04*	.05*			
60	.60	.52	Category VII: The Teacher and Teaching Methods		
62	.22	.15	7	.37	.30
Category III: Curriculum			8	.50	.40
10	.58	.46	9	.44	.38
11	.59	.45	13	.58	.54
12	.64	.53	17	.57	.54
21	.60	.61	18	.32	.13
23	.50	.50	19	.05*	.04*
Category IV: Use of Facilities			20	.50	.45
39	--	.51	24	.60	.55
Category V: Socio-cultural Composition of Community			25	.42	.34
32	.40	.40	26	.53	.47
41	.53	.64	31	.48	.47
45	.38	.16	38	.40	.34
48	.45	.44	40	.58	.60
			50	.55	.31

All correlations are significantly positive at the level of $P < .01$ except No. 52 (Category II) and No. 19 (Category VII) marked *.

educational characteristic there is a significantly higher proportion of high scores made by the high scoring group than low scoring group of respondents with respect to the related category score. The null hypothesis is accepted for characteristics No. 19 and No. 52 thus indicating lack of significant positive discrimination power with respect to the related category score.

Analysis of the Relative Discrimination Power of the Categories of Scores

A median correlation coefficient was calculated for each of the categories of educational characteristics based upon the distribution of correlation coefficients determined from the relation of educational characteristic scores and their respective category scores. The ranking of the categories of educational characteristics with approximate median correlation coefficient values is as follows: First, category VI, administration and supervision (Md = .62); second, category II, community attitudes (Md = .60); third, category III, curriculum (Md = .59); fourth, category I, student's level of knowledge and attitudes (Md = .585); fifth, category VII, the teacher and teaching methods (Md = .50); and sixth, category V, socio-cultural composition of the community

(Md = .38). Category IV, use of facilities, had only one characteristic and consequently no correlation is included. The approximate median correlation coefficient value of all of the above category medians is 0.59. Based upon 979 degrees of freedom this value is far beyond the significance level of 0.01. It is evident that category V has the lowest overall discrimination power. This category also had the lowest reliability in each of the financial support quartiles of districts and also within individual large or small districts although all educational characteristics in the category had correlation coefficients which were significant beyond the level of 0.01.

A median correlation coefficient was also calculated for each of the categories of educational characteristics based upon the distribution of correlation coefficients determined from the relation of educational characteristic scores within each category to the total score. The ranking of the categories of educational characteristics with approximate median correlation coefficient values is as follows: First, category II, community attitudes (Md = .54); second, category IV, use of facilities (Md = .51); third, category VI, administration and supervision (Md = .52);

fourth, category III, curriculum (Md = .50); fifth, category I, student's level of knowledge (Md = .49); sixth, category VII, the teacher and teaching methods (Md = .45); and seventh, category V, socio-cultural composition of the community (Md = .20). The median correlation coefficient value of all the above category medians is 0.52. Based upon 979 degrees of freedom this value is far beyond the significance level of 0.01. It is evident again that category V which has the lowest category reliability also has the lowest overall discrimination power as determined from category correlation coefficient medians based upon the relation of educational characteristic scores of each category to the total score.

It is concluded that all but two of the educational characteristics in the Educational Characteristics Criterion have adequate discrimination power with respect to the total score and with respect to the related category score. No. 19, category VII ("Teachers have complete freedom to teach what they consider to be important") and No. 52, category II ("The parents in this community expect their children to perform their share of family chores") do not have adequate discrimination power and should be revised, replaced, or

eliminated. Eight of eleven characteristics in category V, socio-cultural composition of the community, have correlation coefficients based on their relation to total scores ranging from 0.08 to 0.24 and these characteristics should be revised if possible to obtain higher discrimination power.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter will summarize the purpose of the study, procedures, limitations, pertinent findings, and conclusions. The implications of the findings and recommendations are included.

Summary

This study is concerned with the determination of the discrimination and reliability indices of the Educational Characteristics Criterion, an instrument designed to meas- the quality of an educational program. This instrument is based on the judgments of educational specialists. The procedures of the study are designed to discover the relationships between educational quality and financial support of education and between the perceptions of teachers and administrators regarding educational quality.

Five major hypotheses and twenty-seven subhypotheses were formulated concerning the perception of fifty-six educational characteristics by teachers and administrators from school districts within the first and fourth financial

support quartiles of Michigan public school districts (K-12) which are classified on the educational cost factors of size, effort, ability, and expenditure. 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 Michigan 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 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 of districts and within the low financial support quartile of districts.

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

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

Design of the Study

The study involved the selection of a sample, the development and distribution of a questionnaire intended to elicit perceptions by teachers and administrators concerning the degree of presence of the Educational Characteristics

Criterion quality factors, and the statistical treatment of the data obtained from the completed questionnaires.

The Sample

The sample was determined in such a way as (1) to provide a means of discrimination by the Educational Characteristics Criterion on the basis of high or low level of financial support of education, (2) to provide a means of determining the relative perceptions of educational quality by teachers and administrators, (3) to provide a balance in the number of respondents by quartile of financial support, and (4) to provide more than one district per quartile of financial support. Two school districts were selected in the fourth or highest financial support quartile of the three districts that closely approximated the definition and thirty-nine school districts were picked randomly from approximately seventy possible districts in the first or lowest financial support quartile. The number of usable respondent's questionnaires by quartile was: High financial support quartile--871 teachers, 82 administrators; Low financial support quartile--1091 teachers, 106 administrators.

The Questionnaire

The Educational Characteristics Criterion is based upon the assumption that educational quality may be defined as those educational characteristics of a school district, both school and community, which are perceived as effective in accomplishing the purposes of American public school education. The version of the instrument used in this study consisted of 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 present in a given situation, e.g., "Most characteristic"--4; "Somewhat characteristic"--3; "Slightly characteristic"--2; "Least characteristic"--1. The teacher or administrator respondent is directed to relate the educational characteristic to their building experience. Central office administrators or supervisors are directed to relate the item educational characteristic statements to the school system in general. The educational characteristic scores are obtained by the weighted sum of the responses to each item. Seven category scores are obtained by the sum of the educational characteristic scores included in each of the categories. The total score is obtained by the sum

of the fifty-six educational characteristics scores. 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 the Community; (6) Administration and Supervision; and (7) The Teacher and Teaching Methods.

Mailing Procedures

The letter of invitation sent in January 1962 to the Superintendents of the school districts in the sample was answered by unanimous affirmative replies. The questionnaires with general and specific instructions for its administration and individually enclosed respondent instruction sheets within questionnaire envelopes were sent to the Superintendents and were returned completed within a few weeks with few exceptions. The questionnaire administration instructions stressed the necessity for securing individual type responses in a manner which would minimize prior communication between respondents concerning the Educational Characteristics Criterion.

Treatment of the Data

The data was punched, scored, and tabulated in printed form by IBM processing procedures at Michigan State

University. It was necessary to use a hand calculator to prepare certain data for the analysis of variance. All calculations of the statistics were performed personally by the investigator on an Underwood-Olivetti Divisumma 24 printing calculator. The point biserial coefficients of correlation were read from an abac.

Statistical Methods Utilized

1. The "t" test was used to determine the discrimination between high and low financial support quartiles of school districts and between the perceptions of teachers and administrators within quartiles and within individual large and small school districts.

2. The Hoyt analysis of variance method was used to estimate the reliability of the instrument from the consistency of individual performance on the test items.

3. The point biserial correlation coefficient was used to determine the positive discrimination power of the individual educational characteristics of the instrument with respect to the total score and with respect to their related category scores.

Delimitations of the Study

1. The study is delimited to the sample of Michigan public school districts used and the selected financial and educational factors.

2. The conclusions of the study regarding the relationships of educational characteristics and educational financial support factors are to be interpreted in the sense that the relationships are associational and not causal.

Major Findings

1. Educational Characteristics Criterion discrimination indicates that according to the total scores, seven category scores, and forty-one individual educational characteristic scores of either teachers or administrators, educational quality is present in a significantly higher degree in Michigan school districts having high educational financial support than in Michigan school districts having low educational financial support.

2. Educational Characteristics Criterion discrimination indicates that according to the scores of either teachers or administrators, three educational characteristics are present in higher degree in low support districts than in high support districts.

3. Educational Characteristics Criterion non-discrimination indicates that according to the scores of either teachers or administrators, three educational characteristics do not differ significantly in degree between high and low support districts.

4. Educational Characteristics Criterion discrimination indicates that eight characteristics are present in higher degree in high support districts than in low support districts and one other characteristic is present in higher degree in low support districts than in high support districts according to teachers. Non-discrimination indicates that these nine characteristics do not differ in degree between high and low support districts according to administrators.

5. Educational Characteristics Criterion non-discrimination indicates that there is agreement between teachers and administrators within high support districts and within low support districts as to the total educational quality and educational quality in the categories of the student's level of knowledge, community attitudes, curriculum, and socio-cultural composition of the community.

6. Educational Characteristics Criterion discrimination indicates that administrators are overvaluing

educational quality in the category of the teacher and teaching methods within high support districts and within low support districts.

7. Educational Characteristics Criterion discrimination indicates that administrators with high support districts are overvaluing educational quality in the category of the use of facilities and the category of administration and supervision. Non-discrimination indicates that teachers and administrators in low support districts agree as to the educational quality in these two categories.

8. Educational Characteristics Criterion non-discrimination indicates that there is agreement between teachers and administrators within high support districts and within low support districts as to the degree of educational quality represented in each of twenty-four educational characteristics. Discrimination indicates that administrators in high support districts, and in low support districts, are overvaluing six educational characteristics and are undervaluing one educational characteristic.

9. Educational Characteristics Criterion discrimination and non-discrimination indicate that teacher-administrator perception relationships of twenty-three

educational characteristics are different in high support districts than in low support districts.

10. Educational Characteristics Criterion discrimination and non-discrimination indicate that according to total scores and six of the seven category scores of teachers and administrators within a large district (high financial support quartile) and within two small districts (low financial support quartile), the findings support the teacher-administrator perception relationships indicated by the total and category scores of the sample of respondents of the high financial support quartile and low financial support quartile.

11. Educational Characteristics Criterion total scores of either teachers or administrators within the high support quartile of districts and within the low support quartile of districts have high reliability based on consistency of individual responses upon the test items. The reliability range of these total scores is from 0.89 to 0.95 with a sensitivity significance level from 0.004 to 0.000001. Using 0.61 (level of 0.20) as a lower reliability limit, twenty of the twenty-four possible category tests (six in each of two district types for two respondent types) appear

to be reliable enough to utilize. Eleven categories have a reliability of above 0.71 (level of 0.11).

12. Educational Characteristics Criterion total scores of teachers within a large district and within each of two small districts have a high reliability of 0.90 with a sensitivity significance level of 0.001 or less. Total scores of administrators within a large district have a reliability of 0.91 (level of 0.001). The separate category scores of teachers and administrators within both small districts vary greatly in their reliability probably because of the small number of educational characteristics within some categories and the small number of teachers and very small number of administrators within each district. More category scores of teachers have considerable reliability than those of administrators.

13. The item analysis tests indicated that all but two educational characteristic scores of the Educational Characteristics Criterion correlated positively with the total score and with the respective category scores according to the point biserial correlation procedure and therefore had adequate discrimination power. Most of the correlation coefficients were significantly positive far beyond the

minimum 0.08 coefficient required for the 0.01 significance level for 979 degrees of freedom. The educational characteristics of Category V, socio-cultural composition of the community, had the lowest level of discrimination power (as well as having the lowest reliability according to tests within high and low financial support quartiles and within individual large and small districts).

Conclusions

The Educational Characteristics Criterion is an excellent measure of educational quality in public school districts. This instrument, which is composed of those educational characteristics for which there have been established a significantly high agreement among specialists in educational programs, can discriminate between Michigan public school districts having high financial support and those having low financial support with high reliability in terms of consistency of individual responses. The reasons for this conclusion are as follows:

1. Total scores, each of seven category scores, and forty-one individual educational characteristic scores indicate the expected positive relationship between educational quality and financial support for education which has been

established in previous research, and this relationship is supported according to either teacher or administrator responses. Since either teacher or administrator responses are significant for these scores, it is concluded that combined teacher and administrator responses would also support this conclusion.

2. The six individual educational characteristic scores which indicate other than a positive educational quality - financial support relationship do so according to either teacher or administrator responses. Three characteristics which indicate a negative educational quality-financial support relationship concern community attitude or socio-cultural composition factors which are not related to expenditure for education. Three characteristics which indicate neither positive nor negative educational quality-financial support relationship concern socio-cultural composition or administration factors which are not related to expenditure for education. Since either teacher or administrator responses are significant for these scores, it is concluded that combined teacher and administrator responses would also support this conclusion.

3. There is agreement between teachers and administrators within the high financial support quartile and

within the low financial support quartile which is expected from certificated public school personnel having a similar professional frame of reference in terms of training and expectations, and this conclusion is supported by total scores, the majority of category scores, and twenty-four individual educational characteristic scores. Significant discrimination on other scores indicates a tendency for administrators to overvalue or undervalue certain educational characteristics in relation to teachers' valuing of these characteristics, and this occurrence varies according to high or low support quartiles.

4. The reliability of Educational Characteristics Criterion total scores based on consistency of individual performance on test items ranges from 0.89 to 0.95 according to teachers or administrators within high or low support quartiles. The reliability of category scores is 0.61 and above, category V excepted, according to teachers or administrators within high or low support quartiles. Reliability tests within individual large and small districts indicate wide variations and the need for an adequate number of respondents. The total scores of teachers (at least ten per district) had a reliability of 0.90 to 0.93 in small and

large districts, and several category scores appeared to have adequate reliabilities. Only in large districts which had a considerable number of administrator respondents did scores of administrators have high reliability (category V excepted), total score reliability being 0.91 and category score reliability being from 0.68 to 0.83.

5. Each of the fifty-six individual educational characteristics except two had adequate positive discrimination power ($p < .01$) with respect to the total score and its related category score.

Implications

1. Since the findings indicate that high financial support of education is necessary in order to obtain high educational quality in Michigan public school districts, it is implied that action should be taken in the school districts having low quality and low financial support to increase the financial support cost factors of wealth, school taxation effort, school membership size, and expenditure for operation. Re-districting should be continued where it will increase valuation and pupil membership size of school districts. Operational millage should be raised to provide financial incentives to the teaching staff, to

attract capable new teachers, and to provide more instructional materials and equipment. The development of new industries in the relatively poor regions of Michigan is needed in order to provide the increased educational funds made possible by greater wealth. School districts which have relatively greater wealth are able to spend beyond the basic amount allotted per pupil according to the present state aid formula and thus provide a broad high quality school program with a good teaching staff and a wide variety of instructional materials and equipment. The revision of local assessment of property valuation within townships and counties toward correcting inequalities may provide more educational funds for some school districts.

2. Since the findings indicate that a highly favorable community attitude toward education is found in conjunction with high educational quality in terms of desirable student levels of knowledge and attitudes, it is implied that increased effort toward establishing better community attitudes toward education in the low quality school districts will tend to result in higher student level of knowledge and attitudes in these districts. Favorable community attitudes in high quality districts are associated

with the reinforcement of the aims of the school curriculum, establishing a close relation between school and community values, promoting cooperative effort in developing the goals and content of the curriculum, and enhancing the general morale of the professional school staff. It is implied that a favorable community attitude would tend to affect low quality school districts in the same manner.

3. Since administrators in either high or low quality school districts overvalue relative to teachers' valuing desirable student outcomes such as the attitudes of students toward their scholastic work, students' knowledge of themselves, and students' knowledge of their educational and social opportunities, it is implied that administrators do not develop enough contact with students through their existing communication channels to agree with teachers' perceptions of these student outcomes. It is also implied that where adequate contact with students exists, administrative overvaluing of student outcomes occurs as a result of lower expectation level than teacher expectation level and a consequent higher rating score.

4. It is implied that administrators in either high or low quality school districts are more concerned with academic

grade norms of students which administrators and teachers value similarly than with other desirable student outcomes as attitudes toward scholastic work, students' knowledge of themselves and their social and educational opportunities which administrators overvalue. If one assumes that teacher and administrator expectations are equal regarding students' academic grade norms, it is also implied that administrators' sources of information are greater and more accurate for students' academic grade norms than for the other desirable student outcomes. Since many administrator-parent conferences focus on the academic grades of the parent's children, this implication appears to have a logical basis. It also appears reasonable to believe that the expectations of teachers and administrators regarding student academic grade norms are similar since there is a finding of teacher-administrator agreement concerning the academic grade norms of the professional staff.

5. Since administrators in either high or low quality districts accurately value the extent to which students own their cars (relative to teachers' valuing) and overvalue desirable student outcomes such as attitude toward scholastic work, knowledge of self and social and educational

opportunities, it is implied that administrators may tend to be occupied with details not related to the principal goals of the educational curriculum. It would seem that the type of communication channels providing such detailed information as car ownership could also provide enough information for administrators to make an accurate assessment of the desirable student outcomes. If adequate informational channels do exist, it appears that either the administrators are not interested enough in the desirable student outcomes mentioned above to secure the necessary information with which to accurately assess them or do not have as high an expectation level regarding them as do teachers. This results in a higher or overvalued score.

6. It is implied that administrators in high quality districts have a better frame of reference regarding education with parents and patrons within their school district than do administrators in low quality districts since they accurately perceive (in relation to teachers' perceptions) the value placed on education by parents and patrons as well as their academic grade norms while administrators in low quality districts overvalue these characteristics. It is also implied that the existence of a similar frame of reference between administrators, teachers, parents, and patrons

in low quality districts such as exists in high quality districts would increase empathy, the development of shared expectations regarding educational quality, and consequently, similar standards of school evaluation. Since the existence of teacher--administrator agreement exists in both low quality districts and in high quality districts regarding the perceptions of the purposes of education by parents and patrons and the degree of their involvement in the planning of educational goals, it is implied that teacher--administrator agreement regarding the value placed on education by parents and patrons may be more significant than the agreement on the other two educational characteristics. Since administrators in high quality districts perceive the values placed on education by parents and patrons more accurately (relatively to teachers' perceptions) than do administrators in low quality districts who overvalue this characteristic, it is implied that the former have better sources of information, and this is supported by the finding of better two-way communication between home and school in high quality districts than in low quality districts. Administrators in high quality districts are probably supplied with much more information with which to make an accurate rating of

the values placed on education by parents and patrons through communication sources such as numerous teachers, guidance personnel, and central office supervisors and consultants. It appears that administrators in low quality districts do not have an effective advantage in accurately assessing the educational values of the comparatively smaller number of parents and patrons in their school districts nor advantage in access to informational sources in the smaller student body through which they can make an indirect assessment of parental values about education.

7. Although a relatively high degree of two-way communication between home and school exists in high quality districts, it is implied that it is not sufficient to provide an accurate assessment of the organization of citizens to discuss educational problems since administrators overvalue this characteristic relative to teachers' valuing. This implication appears to hold true for low quality districts in which administrators undervalue the characteristic. It is possible that the type of information available to administrators as a result of parent - administrator or patron-administrator conferences is different than the information resulting from teacher - parent or patron conferences or

meetings. Although the perceptive problems are not clear the differences between teacher - administrator valuing both in high quality districts and in low quality districts appear, and it is evident that there is need for investigation into the methods of evaluating organization of citizens to discuss educational problems with particular attention to the accuracy of information channels to administrators and to teachers.

8. It is implied that administrators in high and low support districts have lower expectations than teachers have regarding the educational characteristics which they overvalue relative to teachers' valuing such as the amount of materials available for instructional purposes, the availability of instructional materials which reflect wide points of view (only high support districts), knowledge that teachers have about students, and the extent to which teachers' judgments are used in the formation of educational policies. This implication is made with the assumption that administrators and teachers should have similar information regarding these characteristics.

9. It is implied that there is closer teacher-administrator contact and exchange of information in high

quality districts than in low quality districts since administrators in high quality districts accurately value relative to teachers' valuing the amount of curricular experimentation by teachers, participation in community activities by teachers, student freedom to investigate issues, and the amount of homework assigned to students by teachers while low quality district administrators either overvalue or undervalue these characteristics relative to teachers' valuing.

10. It is implied that communication exchange between teachers and administrators can be fruitful since there is teacher-administrator agreement in high or low support districts regarding the educational characteristics entailing cooperative teacher and administrator effort such as establishment of curricular structure, development of educational goal consensus, and coordination in curricular efforts.

11. Since administrators in both high and low quality districts should have the necessary information regarding the situation, it is implied that not lack of information but lower administrative expectations accounts for the overvaluing of the extent to which teachers' judgments are used in the determination of educational policies by administrators in both high and low quality districts. There appears

to be a predisposition for all administrators because of their training, personality, situational conditions of their job, or pressure from the board of education or community, to believe that teachers have been permitted a role in policy formation to a greater extent than teachers believe.

12. There appears to be an administrative predisposition in high quality districts to view existing buildings and equipment as being better than teachers believe them to be. Since information as to the real situation appears to be equally available to both teachers and administrators, it is implied that administrative expectations are lower in high quality districts than teachers' expectations regarding these facilities. The consideration of this implication raises several questions. Do administrators really understand the needs of teachers regarding equipment in the various subject areas? Do teachers have an opportunity to requisition or describe their equipment needs to administrators in detail? Are administrators in high quality districts prone to be too easily satisfied with apparently adequate facilities while teachers require more or better facilities in order to perform what they consider a good teaching job? The possibility also arises that teacher

expectations regarding facilities and equipment may always be higher than the existent level--a kind of occupational malady which might be resolved by greater attention on the part of teachers to the development of abstract reasoning and discussion of principles, concepts, and logical considerations which may not require an abundance of materials. This solution may not be primarily applicable to low quality districts where there is an inadequate minimal level of facilities in terms of buildings and equipment.

13. Since the findings indicate that there is less ethnic, racial, and religious homogeneity in high quality districts than in low quality districts, it is implied that any community development which tends to promote a heterogeneous population in regard to ethnic, racial, and religious characteristics should be welcomed. There are probably more differences of opinion in heterogeneous communities which may promote discussion of educational issues and community action toward the acquisition of facilities, professional staff, and establishment of a favorable community attitude all of which are necessary for an educational program of high quality in the school district.

14. Since parents in low quality districts have higher expectations regarding the amount of chore work to be done

by their children than parents in high quality districts have in conjunction with a significantly lower level of knowledge and attitudes held by their children, it is implied that the amount of chore work done by children in low quality districts should be reassessed by administrators and teachers (with whom they agree) in order to provide an optimum balance between academic study time and chore work time. Administrators in high quality districts should also do this, especially since they are undervaluing the parental expectations regarding childrens' chore work in relation to teachers' valuing.

15. It is implied that all the educational decisions are being made better by administrators in high quality districts than in low quality districts because the overall frame of reference for parents, patrons, professional staff, and students is more strongly defined by the presence of higher values placed on education by parents and patrons; higher student, teacher, and parent academic grade norms; a clearer perception of educational purposes held by parents and patrons; higher involvement of the community residents in the planning of educational goals; greater use of teachers in educational policy-making; greater involvement of

teachers in community social and political activities; closer connection between school and community values; and higher two-way communication between the home and the school.

16. It is implied that the presence of the high reliability of the Educational Characteristics Criterion total scores indicates a high correlation between the views of university educational specialists who contributed educational characteristics for the instrument and the views of the teachers and administrators of the Michigan public schools included in the research sample. There appears to be a general agreement as to what educational quality consists of in public school districts which is verified by the correlation of individual educational characteristics with total score and category scores and the consistency of these correlations with large numbers of respondents.

17. Since favorable community attitudes are present in high quality districts and since two-way communication between home and school appears to be essential in developing favorable community attitudes, several implications are presented in connection with the presence or non-presence of a high degree of two-way communication between home and school.

The educational characteristics listed in Table 27 are present in a significantly higher degree in high quality districts than in low quality districts and are valued similarly by administrators and teachers in high support districts while being either overvalued or undervalued by administrators in relation to teachers' valuing in low support districts. It is implied that the presence of a high degree of two-way communication between home and school, one of the characteristics listed in the table, will tend to promote the raising of the academic grade norms of parents and patrons; the value placed on education by parents and patrons; and general confidence in the professional school staff which leads to the approval of student freedom to investigate current issues on the local, state, national, or international level; approval for students to engage in early dating; curricular experimentation by teachers; and teacher participation in social and political activities of the community.

TABLE 27.--Educational characteristics which appear in higher degree in high quality districts than in low quality districts and are valued in the same degree by teachers and administrators of high quality districts and not in the same degree by teachers and administrators in low quality districts[1]

Category and Item No.		Characteristic
I	61	Parents and patrons in the community consider an academic grade of at least "B" to be the norm for academic achievement.
II	47	A two-way communication channel readily exists between home and school.
II	60	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.
II	62	Parents condone or encourage early dating for their children.
V	54	This community is composed of people who are predominantly Catholic.
V	56	The population of this community is equally divided between Protestants and Catholics.
VII	13	Evidence exists of instructional and/or curricular experimentation.
VII	25	Complete freedom is granted to students to investigate any local, state, national, or international issue.
VII	31	High degree of teacher participation in social and political activities of the community.

[1]See Appendices F and H for statistical data.

It is also implied that there is a tendency for better two-way communication between home and school to be established in communities having a predominantly Catholic population or an equal division of Protestant and Catholic population. One may also imply that the other characteristics listed in the table would promote better two-way communication between home and school.

Since two-way communication between home and school is present in significantly higher degree in high quality districts than in low quality districts and all the characteristics listed in Table 27 are valued in the same degree by teachers and administrators in high quality districts and not in the same degree in the low quality districts, it is implied that two-way communication between home and school is necessary to furnish the administrators of high or low quality districts with adequate information to accurately determine the degree to which these characteristics are present in the school district. It is likely that good two-way communication would provide the administrator with adequate information regarding the academic grade norms for achievement and educational value placed on education by

parents and patrons, the religious denominational proportions of the community, the extent of teacher participation in community activities, and the attitude of parents toward early dating of their children. The administrators' view of instructional and/or curricular experimentation and the freedom which is granted by teachers to students to investigate any type of issue might be made more accurate according to information secured from formal or informal conference or meetings with parents. Since experimentation and student freedom to investigate issues are likely to be controversial issues with a consequent increase in the possibilities of effective communication between parents and administrators concerning them, this implication appears to have a reasonable basis.

The educational characteristics listed in Table 28 are perceived as being present in the same degree by teachers and by administrators in low quality districts which according to the findings have a low two-way communication between home and school and are perceived in different degree by teachers and by administrators in high quality districts which have high two-way communication between home and school. It is implied that the characteristics listed in

Table 28 are not perceived by administrators of high or low quality districts according to information from two-way communication between home and school.

TABLE 28.--Educational characteristics which are valued in the same degree by teachers and by administrators in low quality districts and are valued in different degree by teachers and by administrators in high quality districts[2]

Category and Item No.		Characteristic
II	43	A high percentage of the electorate in the community vote in school elections.
II	46	The community exhibits a great concern for the development of aesthetic and artistic interests.
II	52	The parents in this community expect their children to perform their share of family chores.
V	51	A high degree of ethnic, racial, and religious homogeneity exists among the local population.
V	53	This community is composed of people who are predominantly Protestant.
V	57	One or two ethnic groups comprise the largest number of residents in the community.
VII	24	Teachers often avail themselves of professional help.
VII	50	A great deal of homework is assigned to students.

[2]See Appendices F and H for statistical data.

Further consideration of this implication may lead one to revise it according to district type. It may be that in low quality districts which were quite small in the research sample it requires a far smaller frequency of two-way communication to provide teacher-administrator agreement as to the degree to which the educational characteristics listed in Table 28 are present than in high quality districts which were very large in the research sample. The frequency of two-way communication between home and school in the large high quality districts is evidently insufficient to provide teacher-administrator agreement regarding the characteristics in the table. It is also likely that communication channels other than between home and school are providing the administrators and teachers of low quality districts with enough information to agree regarding the characteristics.

One characteristic, teachers' use of professional help, does not appear to be related to two-way communication between home and school since this informational source would probably be teachers. Also, the amount of homework assigned to students would normally be determined by administrators from direct information supplied by teachers.

There appears to be a tendency for administrators in high quality districts to place too much reliance on present information sources regarding these characteristics since they overvalue them while administrators in low quality districts agree with teachers concerning them.

It is implied that ethnic, racial, and religious homogeneity in low quality districts and indicated in characteristics V-51, V-53, and V-57 of Table 28 do not contribute sufficiently to establish two-way communication in low quality districts. Another explanation might be that the indicated homogeneity does contribute towards two-way communication between home and school and that there may be a lack of effort on the part of the school to establish or promote this communication. It is evident that high two-way communication between home and school is not necessary for administrators to secure enough information with which to agree with teachers on the presence of characteristics regarding community homogeneity. It is also evident that a relative lack of homogeneity (or positive heterogeneity) is associated with a high two-way communication between home and school in high quality districts.

In considering the implications of two-way communication between home and school, it is necessary to notice the differences in the effects of socio-economic factors in high quality districts which typically have high financial support and the low quality districts which typically have low financial support. The educational requirements necessary for types of occupations which are aspired to by students and parents may act to affect the frequency of communication between home and school. If the educational need for these particular occupations is low, it is likely that there will be a low demand for education of the students and therefore less need to discuss the educational activities of the students by parents and school staff members. If the educational need for these particular occupations is high, there will be more demand for more education, higher parental educational expectations, and greater communication frequency between the home and school.

Recommendations

Relationship of Educational Quality and Its Financial Support

1. It is recommended that the boards of education in Michigan public school districts be informed of the findings in this research study which indicate that there is a significantly higher educational quality in public school districts which have a high degree of financial support for education than in public school districts which have a low degree of financial support for education. Local boards of education should be urged to initiate and continually operate informational programs designed to enlighten parents and patrons in their school districts regarding the necessity for operational expenditure in sufficient quantity to achieve high quality in terms of students' level of knowledge and attitudes. Local boards of education should also point out the importance of favorable community attitudes and aspects of the socio-cultural composition of the community, the curriculum, administration and supervision, and the teacher and teaching methods since high quality in each of these factors appears to be essential to the total configuration of educational quality within a school district.

2. It is recommended that re-districting continue towards increasing the valuation and membership size of school districts, that industrial development within poor school districts be stimulated in order to increase valuation, and that inequalities in local assessments of property valuation be corrected. Those school districts that are not making a maximum effort to raise operational millage should be stimulated by official state education agencies to do so in order to make possible the acquisition of a high quality professional staff and plentiful instructional materials and equipment which will facilitate a broad school program.

Development of Favorable Community Attitudes

3. Since a favorable community attitude is essential to securing adequate operational millage for a high quality educational program, it is recommended that local boards of education increase their efforts toward the development of a favorable community attitude toward education based upon understanding as to what the local educational situation is. Understanding of the realities of the educational situation by parents and patrons as well as the professional staff

will tend to stabilize successful relations and make possible a systematic and effective development toward educational goals. Understanding is achieved by means of effective communications which lead to agreement of perception regarding the realistic educational situation that exists within the school district. In order that communications regarding educational matters be rapid and effective it is necessary that mediating agencies be employed to pass on and receive educational information of importance. This is especially important in large school districts. The factors which administrators must contend with in developing good community understanding and attitudes are different in large urban districts and small rural districts. Although educational level is higher in large urban districts, there are negative factors such as adverse pressure from various large organizations, chambers of commerce, and large taxpayers. Negative factors in small rural districts might be a lower educational level, elderly population, lower status occupations, and a less cohesive community attitude in sparse areas. In view of the presence of these potentially active negative factors in large urban school districts and in small rural school districts, it is

important that boards of education and their administrators emphasize every positive educational factor in developing understanding and favorable community attitudes within their school districts.

4. It is recommended that two-way communication between home and school be improved to a great extent in low quality school districts since effectiveness of this communication is positively associated with favorable community attitude characteristics and the accuracy of administrators' perceptions regarding these characteristics. Administrators in low quality districts should be informed that they are overvaluing the effectiveness of two-way communication between home and school.

5. It is recommended that boards of education, administrators, and professional staffs use their influence toward raising the value placed upon education by parents and patrons since this is a distinguishing characteristic of high quality school districts. This means that the prestige, image, or identity of education as a basic factor in the process of human development and welfare must be raised in the minds of the community residents to its fullest potential. The desirable educational outcomes such as

self-knowledge, knowledge of social and educational opportunities, and positive attitudes toward self-development must be communicated to the community. The positive achievements of graduates should be given great prestige by the administration and teaching staff. The social prestige of teachers should be raised in order that they will be able to exert their maximum effect upon community residents toward promotion of educational goals and establishment of empathy between the school and parents and patrons of the community. The professional staff should take an active part in the development of cultural resources and aesthetic and artistic interests in cooperation with community residents. This activity may provide opportunities for understanding between teachers, parents, and patrons and increase the amount of two-way communication that is desirable. The development of general educational prestige, social prestige of teachers, and cooperative cultural activity will increase opportunities for the dissemination of accurate educational information and for the development of consistent and clear purposes of education by parents and patrons --both characteristics being present in high degree within high quality districts. The increased prestige of educators

and increased interaction of educators, parents, and patrons will tend to reduce any gaps between values taught in school and what is practiced in the community.

6. It is recommended that both administrators and teaching staff learn more about the socio-cultural composition of their school district communities in order to better understand the attitudes and values associated with ethnic, racial, and religious factors and the relation of these attitudes and values to education. Administrators have a tendency to undervalue these factors so they should develop more and better informational sources regarding the socio-cultural composition of the community.

7. It is recommended that administrators in high quality districts and in low quality districts develop more effective information sources regarding the organization of community citizens to discuss educational problems. It would be helpful for administrators to establish an evaluation system based upon a reliable poll of citizens who are active in the communication network of educational activities. Citizens' organizations are not attaining their potential value because of administrative overvaluing of them in high quality districts and administrative undervaluing of them in low quality districts. It is recommended

that administrators develop and use new types of survey questionnaires in order to accurately assess community opinion on various educational issues before major board of education decisions are made.

8. It is recommended that prospective members of community education councils or other citizen educational organizations which work with the board of education be required to complete an orientation training course in educational goals, school-community relations, curriculum, and committee procedure before being accepted as a full member on executive committees of these organizations. Encouragement should be given to members of the community who have a high educational level to take part in the community educational organization.

Development of Administrator--Teacher Communication and Empathy

9. It is recommended that administrators in both high quality districts and low quality districts develop new means of communication with the teachers on their staff since it is very obvious that there is a noticeable lack of congruence in teacher-administrator perceptions of many educational characteristics in the school district. This

lack of agreement regarding existent educational quality in its many aspects denotes lack of empathy which may tend to develop lack of confidence in educational leadership, low morale, and general educational inefficiency. Any technique which raises the extent and effectiveness of communication between administrators and teachers should promote understanding of the educational situation as it really exists. The techniques might be the participation in the study and solution of common problems; exchange of information, opinion, and judgments about educational matters; and formal reviews of expectations and performance by teachers and administrators. It is likely that a detailed study of various educational values among the professional staff members would help to provide a clearer frame of reference for discussions regarding the curriculum and teaching methods and would clarify the basis for administrative decisions. The development of empathy between teachers and administrators as a result of frequent and accurate communication would tend to result in the use of similar standards for the evaluation of teacher behavior and to promote the development of shared expectations and perceptions which are needed for good functional staff relations.

10. It is recommended that administrators learn a great deal more about the needs of teachers concerning instructional materials, instructional equipment, and teaching procedures. There is a considerable divergence of perception concerning these characteristics and an administrative predisposition to overvalue educational materials and equipment in relation to teachers' valuing. Administrators in low quality districts should completely re-evaluate the adequacy of their testing program since they overvalue it in relation to teachers and the professional staff has a relatively low understanding and use of information gathered on students in comparison to high quality districts.

11. It is recommended that personnel policies be made more explicit and detailed by boards of education in low quality school districts in order to raise morale and efficiency. Explicitness of personnel policy is typical of high quality districts.

12. It is recommended that teachers be included in the determination of educational policies, a characteristic which is typical of high quality districts in a high degree. The use of teachers in policy-making will tend to generate more communication, interest, and empathy in the entire

educational system and raise the prestige of teachers toward beneficially influencing students. The involvement of teachers will tend to stimulate and motivate them to take a high professional interest in their work which may be noticed by the community as a whole and promote favorable community attitudes which have been shown to be associated with adequate financial support for education in a school district.

Hiring of Teachers

13. It is recommended that boards of education, especially those in low quality districts, hire teachers who are recommended highly for having an intimate knowledge of children, knowledge and concern for individual differences, ability to use information gathered on students for the welfare of those students, and the ability to use a wide variety of instructional techniques. These characteristics are present in high degree in high quality districts.

Student Load

14. It is recommended that more homework be assigned to students in low quality districts and that a reasonable balance between chore work demanded by parents and study time

be established in order to aid students in achieving good academic progress. Another area that should be investigated is the total student time and energy expenditure on extra-curricular athletic and club activity, homework, and chore work in order that boards of education may establish sensible policies regarding school and home schedules which concern study, work, and relaxation. Administrators in high quality districts should study this problem very carefully since they overvalue the amount of homework done by students in relation to teachers' valuing while administrators in low quality districts agree with teachers regarding it.

Administrative Evaluation of Students

15. It is recommended that administrators in high quality districts and in low quality districts develop more contact with students, directly or indirectly, in order to evaluate accurately the desirable student outcomes of education other than academic grade norms. All administrators overvalue these outcomes in relation to teachers' valuing. It is also recommended that administrators examine their own expectations regarding these desirable outcomes such as

attitude of students toward scholastic work, students' knowledge of themselves, and students' knowledge of social and educational opportunities. The development of existing communication channels with teachers or new channels would be valuable to administrators in assessing these aspects of the educational product. New information collecting techniques may be needed in this area to be added to present techniques.

Recommendations for Colleges of Education

16. It is recommended that colleges of education emphasize the development of congruent professional educational expectations between college students in the teaching and administrative fields. This development should probably include classwork and conferences as well as generalized inspirational lectures to both types of students. There appears to be some value in having undergraduate teaching students meet with experienced teachers who are converting to an administrative status since the respective expectations of these two groups might tend to differ. Likewise, the contact of young graduate administrative students with older experienced teachers might prove valuable also because of the possibility of differing

expectations of each of these groups. The sharing of the perceptions and professional expectations concerning education among these students types appear to provide an understanding which might lead to good functional staff relations in the field.

17. It is recommended that colleges of education initiate research studies which are designed to probe for reasons which influence the overvaluing or undervaluing of educational characteristics by administrators in relation to teachers' valuing of them. The research studies should take into consideration the areas of administrative personality types, professional expectations, the effect of the culture of the professional training institution on its students, previous educational experience of the administrator, and the situational conditions of the administrative position. The predispositions of administrators and teachers to perceive educational characteristics in certain ways should be noted and included in the program of the college of education.

18. It is recommended that colleges of education make a study of the effect of various types of communication channels upon the perception of teachers and upon the perception of administrators. It is possible that educational

information is being modified according to the type of communication channel. Efforts should be made to provide a means of rapidly comparing the information received by administrators from parents to information received by teachers from parents to check its accuracy and completeness.

19. It is recommended that colleges of education initiate studies concerning the effect of socio-cultural composition of the community upon community attitudes toward education. This study should include ethnic, racial, and religious factors in both large and small districts with controls for high and low quality or high and low financial support.

Recommendations Concerning the Development and Use of the Educational Characteristics Criteron

20. It is recommended that Educational Characteristics Criteron be tested with board of education members and competent community educational council members in order to determine their perception of educational quality existent in their local school districts and to compare their responses with responses of the professional teaching and administration staffs. A discussion of the differences in perception of educational quality might be valuable in

leading to better educational curricula in local school districts.

21. It is recommended that the Educational Characteristics Criterion be tested with teacher and administrator respondents from the second and third financial support quartiles of Michigan public school districts which are determined according to educational cost factors of wealth, membership size, effort, and expenditure. The results would provide a view of the complete spectrum of educational quality in Michigan according to degree of financial support.

22. It is recommended that the Educational Characteristics Criterion be tested in different regions of the United States in order to verify the general positive relationship of educational quality to financial support according to total quality (measured by total average scores) and according to the seven categories of quality (measured by category average scores). Verification is also desired for teacher-administrator agreement or non-agreement concerning individual educational characteristics and categories of educational characteristics. Further studies by regions should include the investigation of the factors of communication and expectations as they are associated with or

impinge upon the relative perceptions of teachers and administrators.

23. It is recommended that a revision of items having a relatively low correlation with total scores and/or category scores be made. Two items which were not significantly correlated to total or category scores at the 0.01 probability level should be eliminated (II-52, "The parents in this community expect their children to perform their share of family chores;" and VII-19, "Teachers have complete freedom to teach what they consider to be important"). The items within Category V (socio-cultural composition of the community) appear to have greatest need of revision. This category also had the lowest reliability. It is also recommended that information regarding certain educational characteristics such as those related to the socio-cultural composition of the community which are factually verifiable by means of written records be used instead of using ratings which may vary from respondent to respondent according to judgments based upon information that may be incomplete or inaccessible to either type of respondent or both types of respondents.

24. It is recommended that the relationship of the Educational Characteristics Criterion scores to educational

output or product type measurements such as achievement gains be investigated. The individual educational characteristics and categories of educational characteristics which are present in high degree in conjunction with high achievement gains should be identified as being desirable. Research studies of this kind are even more valuable when the educational input in terms of intelligence, socio-economic background, and various special capacities of the student are taken into account.

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APPENDIX A

EDUCATIONAL CHARACTERISTICS CRITERION

EDUCATIONAL CHARACTERISTICS CRITERION

Herbert C. Rudman
Michigan State University

1. School District_____ 2. County_____

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
c. 40-1____ f. 25-1____ 20-1 ____

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
c. 40-1____ f. 25-1____ 20-1 ____

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____

EDUCATIONAL CHARACTERISTICS CRITERION

DIRECTIONS: Listed below are 56 statements. Please place an "X" on the number under the statement which best describes your attitude about or perception of what actually exists within your school building or school system. If you are a teacher or a building principal relate these statements to your building experience. If you are an individual whose major responsibility is in central administration or supervision relate these statements to your school system.

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
7. Teachers have intimate knowledge of children.	4	3	2	1
8. Teaching practices reflect concern for individual differences.	4	3	2	1
9. Teaching practices reflect a knowledge of individual differences.	4	3	2	1
10. Teachers perceive a coherent and coordinated structure to the educational program.	4	3	2	1
11. Concensus exists among the staff concerning the goals of the educational program.	4	3	2	1
12. A structure has been developed that permits continual curriculum improvement.	4	3	2	1
13. Evidence exists of instructional and/or curricular experimentation.	4	3	2	1

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
14. Students show a positive attitude toward scholastic work.	4	3	2	1
15. Students evidence accurate knowledge of self.	4	3	2	1
16. Professional staff of the school system are involved in in-service education.	4	3	2	1
17. Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions.	4	3	2	1
18. All teachers are certified to teach at the grade level or subject they are now teaching.	4	3	2	1
19. Teachers have complete freedom to teach what they consider to be important.	4	3	2	1
20. A great variety of instructional techniques are presently used in the classrooms.	4	3	2	1
21. 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
22. Students are knowledgeable about the educational and social opportunities available to them.	4	3	2	1
23. A complete comprehensive testing program including intelligence and achievement testing is available in the schools.	4	3	2	1
24. Teachers often avail themselves of professional help.	4	3	2	1
25. Complete freedom is granted to students to investigate any local, state, national or international issue.	4	3	2	1
26. Availability to students of materials that reflect all shades of political and sociological points of view.	4	3	2	1
27. Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education.	4	3	2	1
28. School program is accredited by the state and regional accrediting agencies.	4	3	2	1

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
29. Lay members of the community are highly involved in the planning of educational goals with the school staff.	4	3	2	1
30. Regulations governing student conduct are highly explicit and detailed.	4	3	2	1
31. High degree of teacher participation in social and political activities of the community.	4	3	2	1
32. The social status of teachers is very high in this community.	4	3	2	1
33. Regulations governing personnel policies are highly explicit and detailed.	4	3	2	1
34. Citizens are highly organized to discuss school problems.	4	3	2	1
35. The perceptions of parents and patrons concerning the purposes of education are consistent and clear.	4	3	2	1
36. The local newspaper has shown a high interest in local school affairs.	4	3	2	1

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
37. There is no lag between the values taught in the school and what is practiced in the community.	4	3	2	1
38. There exists a high level of cooperation among the teachers of the staff.	4	3	2	1
39. The physical facilities of the school system (buildings and equipment) are completely adequate.	4	3	2	1
40. The community and its residents are used for instructional purposes.	4	3	2	1
41. Cultural experiences are readily available in the community.	4	3	2	1
42. Teachers' judgments are almost always used in the determination of educational policies.	4	3	2	1
43. A high percentage of the electorate in the community vote in school elections.	4	3	2	1
44. There are outstanding community leaders in this community who exhibit great interest in school affairs.	4	3	2	1

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
45. This is a highly stable community which does not have too many people leaving.	4	3	2	1
46. The community exhibits a great concern for the development of aesthetic and artistic interests.	4	3	2	1
47. A two-way communication channel readily exists between the home and the school.	4	3	2	1
48. A high percentage of high school students own personal cars.	4	3	2	1
49. A high percentage of homes own television sets.	4	3	2	1
50. A great deal of homework is assigned to students.	4	3	2	1
51. A high degree of ethnic, racial and religious homogeneity exists among the local population.	4	3	2	1
52. The parents in this community expect their children to perform their share of family chores.	4	3	2	1
53. This community is composed of people who are predominately Protestant.	4	3	2	1

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
54. This community is composed of people who are predominately Catholic.	4	3	2	1
55. This community is composed of people who are predominately Jewish.	4	3	2	1
56. The population of this community is equally divided between Protestants and Catholics.	4	3	2	1
57. One or two ethnic groups comprise the largest number of residents in the community.	4	3	2	1
58. Pupils consider an academic grade of at least "B" to be the norm for academic achievement.	4	3	2	1
59. 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
60. 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

Factor	Most Characteristic	Somewhat Characteristic	Slightly Characteristic	Least Characteristic
61. 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
62. Parents condone or encourage early dating for their children.	4	3	2	1

APPENDIX B

LETTER SENT TO SUPERINTENDENTS

MICHIGAN STATE UNIVERSITY EAST LANSING

COLLEGE OF EDUCATION

The College of Education, Michigan State University is conducting several national and state-wide studies concerned with the identification and measurement of quality in an educational program.

The purpose of this study is to test a preliminary form of an instrument which we hope can measure the quality of educational programs. We are seeking to establish its reliability, its validity and its relationship to such cost factors as size of school district, state equalized assessed valuation, effort, and expenditure.

We should like to invite you and the administrative and teaching staffs of your district to participate in this study. All that it will require is approximately thirty minutes of your time to read and check the items in the instrument.

Please check the appropriate box at the end of this letter to indicate your willingness to participate in this very important project.

In order to begin this study promptly we would like to have your response by February 28, 1962 at the latest. If you will help us, and we hope you will, please list the number of teachers and administrators employed by your district.

We would be delighted to send you an abstract of the results if you would so indicate.

Cordially yours,

Herbert C. Rudman
Associate Professor of Education

We will ( ) will not ( ) take part in this study. We desire results ( ).

Number of Teachers_____

Number of Administrators_____
(Superintendents, Principals, and Supervisors)

APPENDIX C

ADMINISTRATION INSTRUCTIONS FOR THE EDUCATIONAL CHARACTERISTICS CRITERION

TO: Superintendents of Cooperating Michigan School Districts in the Quality Research Project, H. C. Rudman, Project Director, College of Education, Michigan State University.

SUBJECT: General Instructions for Administration and Mailing of the Test Instrument, Educational Characteristics Criterion (ECC).

I. CONTENTS OF PACKAGE OF MATERIALS

A. ____ envelopes, each containing one copy of the ECC and instruction sheet for teacher respondents, with two extra copies.

B. ____ envelopes, stamped "ADMIN" each containing one copy of the ECC, also stamped "ADMIN" for administrative respondents (Supt., Principals, Supervisors) with one extra copy.

C. ____ one business envelope containing:
1. Return postage (Educational Materials classification) from Supt. office to Michigan State University.
2. Sticker "Educational Materials" for return package.
3. Sticker with address to H. C. Rudman, College of Education, Michigan State University.

D. ____ One Supplementary Information Form to be completed by the Superintendent.

E. ____ Special instructions for principals with an attached copy of the respondent instruction sheet contained in each envelope.

II. DISTRIBUTION

A. Please contact each principal to notify him of the participation of your school district in the research project which is concerned with the identification and measurement of quality in an educational program and its relation to certain cost factors.

B. Please give the principals their instruction sheets and envelopes for each teacher (unless this can be accomplished from central office, etc.) According to the principal's instructions, it is desired that teachers be prepared for their participation by means of a teacher memo or notice in the daily bulletin of the types suggested in the principal's instructions.

C. Give principals and other administrator and supervisor respondents their envelopes (marked "ADMIN") which are to be completed in the same manner as the teachers do.

D. All respondents are to omit items 3, 4, 5, 6, 28. The Superintendent is requested to fill out the Supplementary Information Form that has the information contained in these items. The Superintendent is requested to complete the ECC as a respondent also using an envelope marked "ADMIN."

E. In case there is only one administrator (Supt.) who also acts as principal, it is desired that one "ADMIN" ECC be given to the faculty individual who assists the Superintendent administratively generally more than any other faculty member. This individual would not fill out a plain teacher respondent ECC, but would fill out the "ADMIN" ECC.

III. COLLECTION

A. It is requested that the collection point of the ECC envelopes be clearly specified, such as "Principal's Secretary," "Principal," etc.

B. All envelopes with the enclosed ECC's should be collected, used or unused, and checked against the total sent (see I. Contents).

C. Do not retain ECC's for absent teachers. Assuming there will be few absent cases, it will not matter much. However, it is highly desired that all personnel designated who are present fill out ECC's. All

forms should be returned within 48 hours at the latest to your office. It is hoped that these limits will result in better individual perceptions uninfluenced by group discussion.

IV. MAILING

A. The return package should include all envelopes and Supplementary Information Form completed by Supt. 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 the top ECC envelope inside the package.

C. Postage is calculated for "Educational Materials" rate. If reimbursement for additional postage is required, please contact H.C. Rudman, College of Education, Michigan State University, East Lansing, Michigan.

In conclusion, thank you, your staff, and teachers for the cooperation you have given in this project. An abstract of results will be sent to you upon completion.

A. D. Berg
Project Assistant

APPENDIX D

RESPONDENT INSTRUCTIONS FOR THE EDUCATIONAL CHARACTERISTICS CRITERION

Instructions for Responding to the Educational Characteristics Criterion

1. Your participation as a respondent to the Educational Characteristics Criterion (ECC) within the sample of cooperating Michigan School Districts is greatly appreciated. This is a phase of a comprehensive research project 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. Omit Items 3, 4, 5, 6 and 28.

4. 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.

5. Example of marking one item:

Factor	Most Characteristic	Somewhat -	Slightly -	Least -
7. Teachers have intimate knowledge of children.	4	3	X 2	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).

6. Upon completion of your responses to all ECC items (except items 3, 4, 5, 6 and 28), place the ECC and this instruction sheet in the envelope and SEAL the envelope flap. Do not put your name or other markings on the ECC or envelope.

7. 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

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

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=871, Administrator N=82; Low Quartile: Teacher N=1091, Administrator N=106.

Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
			Total Score (56 items)					
T	171.54	145.09	26.45	0.836	1960	31.6	<.001	Reject
A	173.43	148.51	24.91	2.44	186	10.2	<.001	Reject
			Category I Score: Student's Level of Knowledge (6 items)					
T	17.68	15.29	2.39	0.144	1960	16.5	<.001	Reject
A	18.15	15.70	2.45	0.419	186	5.84	<.001	Reject
			Category II Score: Community Attitudes (11 items)					
T	32.22	26.27	5.95	0.231	1960	25.80	<.001	Reject
A	31.39	26.87	4.52	0.683	186	6.84	<.001	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher significance levels are indicated.

Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
Category III Score: Curriculum (5 items)								
T	17.52	14.25	3.24	0.118	1960	27.5	<.001	Reject
A	17.86	14.84	3.02	0.34	186	8.8	<.001	Reject
Category IV Score: Use of Facilities (1 item)								
T	3.36	2.43	0.93	0.039	1960	23.6	<.001	Reject
A	3.57	2.54	1.03	0.117	186	8.80	<.001	Reject
Category V Score: Socio-cultural Composition of the Community (11 items)								
T	29.43	25.95	3.48	0.162	1960	21.4	<.001	Reject
A	28.73	25.70	3.03	0.480	186	6.31	<.001	Reject

Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
Category VI Score: Administration and Supervision (7 items)								
T	22.13	17.39	4.74	0.104	1960	45.4	<.001	Reject
A	23.10	17.89	5.21	0.434	186	12.2	<.001	Reject
Category VII Score: The Teacher and Teaching Methods (15 items)								
T	50.59	44.93	5.66	0.748	1960	7.56	<.001	Reject
A	49.16	43.45	5.71	0.246	186	23.21	<.001	Reject

APPENDIX F

DIFFERENCES BETWEEN INDIVIDUAL EDUCATIONAL CHARACTERISTIC MEAN SCORES OF TEACHERS AND OF 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=871, Administrator N=82; Low Quartile: Teacher N=1091, Administrator N=106

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
		Category I: Student's Level of Knowledge and Attitudes "Students show a positive attitude toward scholastic work."							
14	T	3.16	2.66	0.50	0.0316	1960	15.82	<.001	Reject
	A	3.45	2.89	0.56	0.0915	186	6.18	<.001	Reject
		"Students evidence accurate knowledge of self."							
15	T	2.70	2.34	0.36	0.031	1960	11.53	<.001	Reject
	A	2.96	2.57	0.39	0.093	186	8.54	<.001	Reject
		"Students are knowledgeable about the educational and social opportunities available to them."							
22	T	3.18	2.71	0.47	0.033	1960	14.07	<.001	Reject
	A	3.35	2.86	0.49	0.095	186	5.12	<.001	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher significance levels are indicated.

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"Pupils consider an academic grade of at least 'B' to be the norm for academic achievement."									
58	T	2.85	2.42	0.43	0.0401	1960	10.69	<.001	Reject
	A	2.73	2.38	0.35	0.1206	186	2.90	<.005	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."									
59	T	2.79	2.64	0.15	0.0399	1960	3.75	<.001	Reject
	A	2.73	2.56	0.17	0.1312	186	1.29	>.05	Accept
"Parents and patrons in the community consider an academic grade of at least 'B' to be the norm for academic achievement."									
61	T	2.97	2.49	0.48	0.0370	1960	12.97	<.001	Reject
	A	2.92	2.78	0.14	0.1075	186	1.30	>.05	Accept

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
		Category II: Community Attitudes							
		"Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education."							
27	T	2.79	2.06	0.73	0.0380	1960	19.21	<.001	Reject
	A	2.82	2.12	0.70	0.1105	186	6.33	<.001	Reject
		"The perceptions of parents and patrons concerning the purposes of education are consistent and clear."							
35	T	2.55	2.02	0.53	0.0355	1960	14.92	<.001	Reject
	A	2.59	2.09	0.50	0.1165	186	4.29	<.001	Reject
		"The local newspaper has shown a high interest in local school affairs."							
36	T	3.41	2.74	0.67	0.0388	1960	17.26	<.001	Reject
	A	3.30	2.84	0.46	0.1497	186	3.07	<.005	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"There is no lag between the values taught in the school and practiced in the community."									
37	T	2.68	2.25	0.43	0.0374	1960	11.49	<.001	Reject
	A	2.64	2.30	0.34	0.1166	186	2.91	<.005	Reject
"A high percentage of the electorate in the community vote in school elections."									
43	T	2.53	2.30	0.23	0.0371	1960	6.19	<.001	Reject
	A	2.30	2.37	0.07	0.1152	186	0.61	>.05	Accept
"There are outstanding community leaders in this community who exhibit great interest in school affairs."									
44	T	3.26	2.61	0.65	0.0383	1960	16.97	<.001	Reject
	A	3.29	2.50	0.79	0.1178	186	6.70	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"The community exhibits a great concern for the development of aesthetic and artistic interests."									
46	T	3.09	1.78	1.31	0.0386	1960	33.93	<.001	Reject
	A	2.76	1.79	0.97	0.116	186	8.36	<.001	Reject
"A two-way communication channel readily exists between the home and school."									
47	T	3.27	2.47	0.76	0.0369	1960	20.59	<.001	Reject
	A	3.21	2.66	0.55	0.1008	186	5.45	<.001	Reject
"The parents in this community expect their children to perform their share of family chores."									
52	T	2.59	2.92	0.33	0.0324	1960	10.18	<.001	Reject
	A	2.39	2.99	0.60	0.112	186	5.36	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"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."									
60	T	3.32	2.49	0.83	0.0376	1960	22.07	<.001	Reject
	A	3.42	2.78	0.64	0.1093	186	5.85	<.001	Reject
"Parents condone or encourage early dating for their children."									
62	T	2.74	2.58	0.16	0.0359	1960	4.45	<.001	Reject
	A	2.60	2.38	0.22	0.1232	186	1.78	>.05	Accept
Category III: Curriculum "Teachers perceive a coherent and coordinated structure to the educational program."									
10	T	3.29	2.83	0.46	0.0348	1960	13.21	<.001	Reject
	A	3.26	2.82	0.44	0.0925	186	4.75	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
		"Consensus exists among the staff concerning the goals of the educational program."							
11	T	3.22	2.86	0.36	0.0367	1960	9.80	<.001	Reject
	A	3.23	2.99	0.24	0.1042	186	2.30	<.05	Reject
		"A structure has been developed that permits continual curriculum development."							
12	T	3.53	2.76	0.77	0.0382	1960	20.15	<.001	Reject
	A	3.67	2.84	0.83	0.114	186	7.28	<.001	Reject
		"A great variety of instructional materials are presently used in the classroom."							
21	T	3.58	2.75	0.83	0.0315	1960	26.34	<.001	Reject
	A	3.75	2.89	0.86	0.098	186	8.77	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
		"A complete comprehensive testing program including intelligence and achievement testing is available in the schools."							
23	T	3.89	3.07	0.82	0.0313	1960	26.19	<.001	Reject
	A	3.94	3.28	0.66	0.090	186	7.33	<.001	Reject
		Category IV: Use of Facilities "The physical facilities of the school system (buildings and equipment) are completely adequate."							
39	T	3.36	2.43	0.93	0.0393	1960	23.66	<.001	Reject
	A	3.57	2.54	1.03	0.117	186	8.80	<.001	Reject
		Category V: Socio-cultural Composition of the Community "The social status of teachers is very high in this community."							
32	T	2.80	2.65	0.15	0.0372	1960	4.03	<.001	Reject
	A	2.93	2.53	0.40	0.1166	186	3.43	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"Cultural experiences are readily available in the community."									
41	T	3.59	1.77	1.82	0.0359	1960	50.69	<.001	Reject
	A	3.53	1.80	1.73	0.1177	186	14.69	<.001	Reject
"This is a highly stable community which does not have too many people leaving."									
45	T	2.76	2.82	0.06	0.0442	1960	1.35	>.05	Accept
	A	2.85	2.87	0.02	0.1327	186	0.15	>.05	Accept
"A high percentage of high school students own personal cars."									
48	T	2.90	2.01	0.89	0.0365	1960	24.38	<.001	Reject
	A	2.96	1.95	1.01	0.1149	186	8.79	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"A high percentage of homes own television sets."									
49	T	3.90	3.68	0.22	0.0198	1960	11.11	<.001	Reject
	A	3.91	3.76	0.15	0.053	186	2.83	<.005	Reject
"A high degree of ethnic, racial, and religious homogeneity exists among the local population."									
51	T	2.65	2.71	0.06	0.0288	1960	2.08	<.05	Reject
	A	2.37	2.76	0.39	0.1415	186	2.75	<.01	Reject
"This community is composed of people who are predominately Protestant."									
53	T	2.74	3.09	0.35	0.0421	1960	8.31	<.001	Reject
	A	2.37	3.14	0.77	0.1398	186	5.50	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"This community is composed of people who are predominately Catholic."									
54	T	2.04	1.73	0.31	0.0387	1960	8.01	<.001	Reject
	A	2.02	1.57	0.45	0.1238	186	3.63	<.001	Reject
"This community is composed of people who are predominately Jewish."									
55	T	1.30	1.13	0.17	0.0254	1960	6.69	<.001	Reject
	A	1.15	1.06	0.09	0.0585	186	1.54	>.05	Accept
"The population of this community is equally divided between Protestants and Catholics."									
56	T	2.24	1.85	0.39	0.0468	1960	8.33	<.001	Reject
	A	2.30	1.72	0.58	0.1499	186	3.86	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
		"One or two ethnic groups comprise the largest number of residents in the community."							
57	T	2.46	2.45	0.01	0.482	1960	0.21	>.05	Accept
	A	2.28	2.50	0.22	0.1543	186	1.42	>.05	Accept
		Category VI: Administration and Supervision "Professional staff of the school system are involved in in-service education."							
16	T	3.36	2.55	0.81	0.0360	1960	22.2	<.001	Reject
	A	3.45	2.57	0.88	0.120	186	7.33	<.001	Reject
		"School program is accredited by the state and regional accrediting agencies."							
28	T	4.00	3.00	1.00	0.0174	1960	57.47	<.001	Reject
	A	4.00	2.95	1.05	0.0635	186	16.53	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"Lay members of the community are highly involved in the planning of educational goals with the school staff."									
29	T	2.94	2.01	0.93	0.0408	1960	22.6	<.001	Reject
	A	3.09	2.12	0.97	0.1184	186	8.19	<.001	Reject
"Regulations governing student conduct are highly explicit and detailed."									
30	T	2.94	2.77	0.17	0.402	1960	0.422	>.05	Accept
	A	3.04	2.96	0.08	0.1199	186	0.66	>.05	Accept
"Regulations governing personnel policies are highly explicit and detailed."									
33	T	3.21	2.50	0.71	0.0390	1960	18.20	<.001	Reject
	A	3.24	2.61	0.63	0.1258	186	5.00	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
		"Citizens are highly organized to discuss school problems."							
34	T	2.90	1.98	0.92	0.0399	1960	23.05	<.001	Reject
	A	3.14	1.85	1.29	0.108	186	11.95	<.001	Reject
		"Teachers' judgments are almost always used in the determination of educational policies."							
42	T	2.75	2.55	0.20	0.0377	1960	5.30	<.001	Reject
	A	3.10	2.82	0.28	0.1097	186	2.55	<.05	Reject
		Category VII: The Teacher and Teaching Methods "Teachers have intimate knowledge of children."							
7	T	3.26	3.04	0.22	0.0302	1960	7.28	<.001	Reject
	A	3.50	3.30	0.20	0.0868	186	2.30	<.025	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{H}_L$	S.E.	D.F.	T	P	H_o
"Teaching practices reflect concern for individual differences."									
8	T	3.39	3.04	0.35	0.0303	1960	11.55	<.001	Reject
	A	3.43	3.13	0.30	0.0878	186	3.41	<.001	Reject
"Teaching practices reflect a knowledge of individual differences."									
9	T	3.33	3.01	0.32	0.0304	1960	10.52	<.001	Reject
	A	3.39	3.10	0.29	0.0897	186	3.23	<.001	Reject
"Evidence exists of instructional and/or curricular experimentation."									
13	T	3.57	2.56	1.01	0.0349	1960	28.9	<.001	Reject
	A	3.65	2.89	0.76	0.0890	186	8.54	<.001	Reject

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions."									
17	T	3.15	2.65	0.50	0.0348	1960	14.36	<.001	Reject
	A	3.13	2.59	0.54	0.1091	186	4.94	<.001	Reject
"All teachers are certified to teach at the grade level or subject they are now teaching."									
18	T	4.00	3.74	0.26	0.0157	1960	16.56	<.001	Reject
	A	4.00	3.75	0.25	0.0376	186	6.64	<.001	Reject
"Teachers have complete freedom to teach what they consider to be important."									
19	T	3.03	3.41	0.38	0.0356	1960	10.67	<.001	Reject
	A	3.17	3.35	0.18	0.1022	186	1.76	>.05	Accept

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"A great variety of instructional techniques are presently used in the classroom."									
20	T	3.53	2.97	0.56	0.0311	1960	18.00	<.001	Reject
	A	3.56	3.06	0.50	0.0980	186	5.10	<.001	Reject
"Teachers often avail themselves of professional help."									
24	T	3.27	2.59	0.68	0.0352	1960	19.31	<.001	Reject
	A	3.54	2.66	0.88	0.111	186	7.92	<.001	Reject
"Complete freedom is granted to students to investigate any local, state, national, or international issue."									
25	T	3.30	3.12	0.18	0.0346	1960	5.20	<.001	Reject
	A	3.42	3.43	0.01	0.1005	186	0.10	>.05	Accept

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"Availability to students of materials that reflect all shades of political and sociological points of view."									
26	T	3.12	2.71	0.41	0.0365	1960	11.23	<.001	Reject
	A	3.31	2.97	0.04	0.1134	186	0.35	>.05	Accept
"High degree of teacher participation in social and political activities of the community."									
31	T	2.79	2.53	0.26	0.0367	1960	7.08	<.001	Reject
	A	2.86	2.37	0.49	0.1133	186	4.32	<.001	Reject
"There exists a high level of cooperation among the teachers of the staff."									
38	T	3.52	3.28	0.24	0.0328	1960	7.31	<.001	Reject
	A	3.56	3.40	0.16	0.0986	186	1.62	>.05	Accept

Item	Group	$\bar{X}_H$	$\bar{X}_L$	$\bar{X}_H - \bar{X}_L$	S.E.	D.F.	T	P	H_o
"The community and its residents are used for instructional purposes."									
40	T	2.98	2.18	0.80	0.0381	1960	20.9	<.001	Reject
	A	2.93	2.28	0.65	0.120	186	5.41	<.001	Reject
"A great deal of homework is assigned to students."									
50	T	2.84	2.54	0.30	0.0349	1960	8.59	<.001	Reject
	A	3.08	2.60	0.47	0.1054	186	4.45	<.001	Reject

APPENDIX G

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 Administrators within High Financial Support Quartile and of Teachers and Administrators within Low Financial Support Quartile. High Quartile: Teacher N=871, Administrator N=82; Low Quartile: Teacher N=1091, Administrator N=106.

Groups	$\bar{X}_T$	$\bar{X}_A$	$\bar{X}-\bar{X}$	S.E.	D.F.	T	P	H_o
			Total Score (56 items)					
High	171.54	173.42	1.88	1.96	951	0.95	>.05	Accept
Low	145.09	148.51	3.42	1.92	1195	1.78	>.05	Accept
			Category I Score: Student's Level of Knowledge (6 items)					
High	17.68	18.15	0.47	0.36	951	1.28	>.05	Accept
Low	15.29	15.70	0.51	0.319	1195	1.28	>.05	Accept
			Category II Score: Community Attitudes (11 items)					
High	32.22	31.39	0.83	0.594	951	1.39	>.05	Accept
Low	26.27	26.87	0.60	0.43	1195	1.39	>.05	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher significance levels are indicated.

Groups	$\bar{X}_T$	$\bar{X}_A$	$\bar{X}-\bar{X}$	S.E.	D.F.	T	P	H_o
Category III Score: Curriculum (5 items)								
High	17.52	17.58	0.06	0.245	951	0.244	>.05	Accept
Low	14.25	14.84	0.59	0.312	1195	1.89	>.05	Accept
Category IV Score: Use of Facilities (1 item)								
High	3.36	3.57	0.21	0.069	951	3.04	<.005	Reject
Low	2.43	2.54	0.11	0.105	1195	1.05	>.05	Accept
Category V Score: Socio-cultural Composition of the Community (11 items)								
High	29.43	28.73	0.70	0.409	951	1.71	>.05	Accept
Low	25.95	25.70	0.25	0.361	1195	0.692	>.05	Accept

Groups	$\bar{X}_T$	$\bar{X}_A$	$\bar{X}-\bar{X}$	S.E.	D.F.	T	P	H_o
Category Score VI: Administration and Supervision (7 items)								
High	22.13	23.10	0.97	0.345	951	2.81	$<.005$	Reject
Low	17.39	17.89	0.50	0.344	1195	1.45	$>.05$	Accept
Category VII Score: The Teacher and Teaching Methods (15 items)								
High	49.16	50.59	1.43	0.575	951	2.48	$<.025$	Reject
Low	43.45	44.93	1.48	0.60	1195	2.46	$<.025$	Reject

APPENDIX H

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 Administrators within High Financial Support Quartile and of Teachers and Administrators within Low Financial Support Quartile. High Quartile: Teacher N=871, Administrator N=82; Low Quartile: Teacher N=1091, Administrator N=106.

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
		Category I: Student's Level of Knowledge and Attitudes							
		"Students show a positive attitude toward scholastic work."							
14	High	3.45	3.16	0.29	0.0690	951	4.20	<.001	Reject
	Low	2.89	2.66	0.23	0.0667	1195	3.44	<.001	Reject
		"Students evidence accurate knowledge of self."							
15	High	2.96	2.70	0.26	0.077	951	3.37	<.001	Reject
	Low	2.57	2.34	0.23	0.0674	1195	3.41	<.001	Reject
		"Students are knowledgeable about the educational and and social opportunities available to them."							
22	High	3.35	3.18	0.17	0.0743	951	2.28	<.025	Reject
	Low	2.86	2.71	0.15	0.0683	1195	2.19	<.05	Reject

The null hypotheses are rejected at the 0.05 significance level. Higher significance levels are indicated.

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"Pupils consider an academic grade of at least 'B' to be the norm for academic achievement."									
58	High	2.73	2.85	0.12	0.0934	951	1.28	>.05	Accept
	Low	2.38	2.42	0.04	0.0854	1195	0.46	>.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."									
59	High	2.73	2.79	0.06	0.0999	951	0.60	>.05	Accept
	Low	2.56	2.64	0.08	0.0926	1195	0.86	>.05	Accept
"Parents and patrons in the community consider an academic grade of at least 'B' to be the norm for academic achievement."									
61	High	2.92	2.97	0.05	0.0892	951	0.56	>.05	Accept
	Low	2.78	2.49	0.29	0.0725	1195	4.00	<.001	Reject

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
		Category II: Community Attitudes							
		"Parents and patrons (those residents of a school district without school-age children) are highly knowledgeable about education."							
27	High	2.82	2.79	0.03	0.094	951	0.31	>.05	Accept
	Low	2.12	2.06	0.06	0.0718	1195	0.92	>.05	Accept
		"The perceptions of parents and patrons concerning the purposes of education are consistent and clear."							
35	High	2.59	2.55	0.04	0.0923	951	0.43	>.05	Accept
	Low	2.09	2.02	0.07	0.0798	1195	0.87	>.05	Accept
		"The local newspaper has shown a high interest in local school affairs."							
36	High	3.30	3.41	0.11	0.0433	951	2.54	<.02	Reject
	Low	2.84	2.74	0.10	0.0443	1195	2.25	<.025	Reject

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"There is no lag between the values taught in the school and practiced in the community."									
37	High	2.64	2.68	0.04	0.0966	951	0.41	>.05	Accept
	Low	2.30	2.25	0.05	0.0776	1195	0.64	>.05	Accept
"A high percentage of the electorate in the community vote in school elections."									
43	High	2.30	2.53	0.23	0.0938	951	2.45	<.02	Reject
	Low	2.37	2.30	0.07	0.078	1195	0.89	>.05	Accept
"There are outstanding community leaders in this community who exhibit great interest in school affairs."									
44	High	3.29	3.26	0.03	0.0884	951	0.33	>.05	Accept
	Low	2.50	2.61	0.11	0.0847	1195	1.29	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"The community exhibits a great concern for the development of aesthetic and artistic interests."									
46	High	2.76	3.09	0.33	0.102	951	3.24	<.005	Reject
	Low	1.79	1.78	0.01	0.680	1195	0.01	>.05	Accept
"A two-way communication channel readily exists between the home and school."									
47	High	3.21	3.23	0.02	0.0779	951	0.25	>.05	Accept
	Low	2.66	2.47	0.19	0.0725	1195	2.62	<.01	Reject
"The parents in this community expect their children to perform their share of family chores."									
52	High	2.39	2.59	0.20	0.0962	951	2.07	<.05	Reject
	Low	2.99	2.92	0.07	0.0670	1195	1.04	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"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."									
60	High	3.42	3.32	0.10	0.0917	951	1.09	>.05	Accept
	Low	2.78	2.49	0.29	0.0730	1195	3.97	<.001	Reject
"Parents condone or encourage early dating for their children."									
62	High	2.60	2.74	0.14	0.103	951	1.36	>.05	Accept
	Low	2.38	2.58	0.20	0.0801	1195	2.49	<.02	Reject
Category III: Curriculum "Teachers perceive a coherent and coordinated structure to the educational program."									
10	High	3.26	3.29	0.03	0.0739	951	0.40	>.05	Accept
	Low	2.82	2.83	0.01	0.0658	1195	0.15	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
		"Consensus exists among the staff concerning the goals of the educational program."							
11	High	3.23	3.22	0.01	0.0805	951	0.12	>.05	Accept
	Low	2.99	2.86	0.13	0.0750	1195	1.73	>.05	Accept
		"A structure has been developed that permits continual curriculum development."							
12	High	3.67	3.53	0.14	0.0739	951	1.89	>.05	Accept
	Low	2.84	2.76	0.08	0.0952	1195	0.84	>.05	Accept
		"A great variety of instructional materials are presently used in the classroom."							
21	High	3.75	3.58	0.17	0.0543	951	3.13	<.005	Reject
	Low	2.89	2.75	0.14	0.0820	1195	1.70	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"A complete comprehensive testing program including intelligence and achievement testing is available in the schools."									
23	High	3.94	3.89	0.05	0.029	951	1.72	>.05	Accept
	Low	3.28	3.07	0.21	0.0914	1195	2.29	<.025	Reject
Category IV: Use of Facilities "The physical facilities of the school system (buildings and equipment) are completely adequate."									
39	High	3.57	3.36	0.21	0.0696	951	3.01	<.005	Reject
	Low	2.54	2.43	0.11	0.102	1195	1.08	>.05	Accept
Category V: Socio-cultural Composition of the Community "The social status of teachers is very high in this community."									
32	High	2.93	2.80	0.13	0.0897	951	1.44	>.05	Accept
	Low	2.53	2.65	0.12	0.0825	1195	1.45	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"Cultural experiences are readily available in the community."									
41	High	3.53	3.59	0.06	0.0833	951	0.72	>.05	Accept
	Low	1.80	1.77	0.03	0.0868	1195	0.34	>.05	Accept
"This is a highly stable community which does not have too many people leaving."									
45	High	2.85	2.76	0.09	0.102	951	0.88	>.05	Accept
	Low	2.87	2.82	0.05	0.0940	1195	0.53	>.05	Accept
"A high percentage of high school students own personal cars."									
48	High	2.96	2.90	0.06	0.0865	951	0.69	>.05	Accept
	Low	1.95	2.01	0.07	0.0822	1195	0.85	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
		"A high percentage of homes own television sets."							
49	High	3.91	3.90	0.01	0.0328	951	0.30	>.05	Accept
	Low	3.76	3.68	0.08	0.0468	1195	1.70	>.05	Accept
		"A high degree of ethnic, racial, and religious homogeneity exists among the local population."							
51	High	2.37	2.65	0.28	0.0492	951	5.69	<.001	Reject
	Low	2.76	2.71	0.05	0.0934	1195	0.53	>.05	Accept
		"This community is composed of people who are predominantly Protestant."							
53	High	2.37	2.74	0.37	0.112	951	3.33	<.001	Reject
	Low	3.14	3.09	0.05	0.0945	1195	0.52	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"This community is composed of people who are predominantly Catholic."									
54	High	2.02	2.04	0.02	0.107	951	0.186	$>.05$	Accept
	Low	1.57	1.73	0.16	0.078	1195	2.05	$<.05$	Reject
"This community is composed of people who are predominantly Jewish."									
55	High	1.15	1.30	0.15	0.0575	951	2.60	$<.01$	Reject
	Low	1.06	1.13	0.07	0.0339	1195	2.06	$<.05$	Reject
"The population of this community is equally divided between Protestants and Catholics."									
56	High	2.30	2.24	0.06	0.110	951	0.54	$>.05$	Accept
	Low	1.72	1.85	0.13	0.0442	1195	2.94	$<.005$	Reject

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
		"One or two ethnic groups comprise the largest number of residents in the community."							
57	High	2.28	2.46	0.18	0.0508	951	3.54	<.001	Reject
	Low	2.50	2.45	0.05	0.110	1195	0.45	>.05	Accept
		Category VI: Administration and Supervision "Professional staff of the school system are involved in in-service education."							
16	High	3.45	3.36	0.09	0.0832	951	1.08	>.05	Accept
	Low	2.57	2.55	0.02	0.0939	1195	0.21	>.05	Accept
		"Lay members of the community are highly involved in the planning of educational goals with the school staff."							
29	High	3.09	2.94	0.15	0.0980	951	1.53	>.05	Accept
	Low	2.12	2.01	0.11	0.080	1195	1.37	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"Regulations governing student policies are highly explicit and detailed."									
30	High	3.04	2.94	0.10	0.0947	951	1.05	>.05	Accept
	Low	2.96	2.77	0.19	0.0838	1195	2.26	<.025	Reject
"Regulations governing personnel policies are highly explicit and detailed."									
33	High	3.24	3.21	0.03	0.0983	951	0.30	>.05	Accept
	Low	2.61	2.50	0.11	0.0877	1195	1.25	>.05	Accept
"Citizens are highly organized to discuss school problems."									
34	High	3.14	2.90	0.24	0.0971	951	2.47	<.02	Reject
	Low	1.85	1.98	0.13	0.0629	1195	2.06	<.05	Reject

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
		"Teachers' judgments are almost always used in the determination of educational policies."							
42	High	3.10	2.75	0.35	0.0842	951	4.15	<.001	Reject
	Low	2.82	2.55	0.27	0.0786	1195	3.43	<.001	Reject
		Category VII: The Teacher and Teaching Methods "Teachers have intimate knowledge of children."							
7	High	3.50	3.26	0.24	0.0697	951	3.44	<.001	Reject
	Low	3.30	3.04	0.26	0.0606	1195	4.29	<.001	Reject
		"Teaching practices reflect concern for individual differences."							
8	High	3.43	3.39	0.04	0.0686	951	0.58	>.05	Accept
	Low	3.13	3.04	0.09	0.0624	1195	1.44	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"Teaching practices reflect a knowledge of individual differences."									
9	High	3.39	3.33	0.06	0.0679	951	0.88	>.05	Accept
	Low	3.10	3.01	0.09	0.0653	1195	1.37	>.05	Accept
"Evidence exists of instructional and/or curricular experimentation."									
13	High	3.65	3.57	0.08	0.0643	951	1.24	>.05	Accept
	Low	2.89	2.56	0.33	0.0686	1195	4.81	<.001	Reject
"Teachers thoroughly understand the information gathered on students and use this information to make sound educational decisions."									
17	High	3.13	3.15	0.02	0.0729	951	0.27	>.05	Accept
	Low	2.59	2.65	0.06	0.0759	1195	0.79	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
		"Teachers have complete freedom to teach what they consider to be important."							
19	High	3.17	3.03	0.14	0.0874	951	1.60	>.05	Accept
	Low	3.35	3.41	0.06	0.0670	1195	0.895	>.05	Accept
		"A great variety of instructional techniques are presently used in classroom."							
20	High	3.56	3.53	0.03	0.0684	951	0.43	>.05	Accept
	Low	3.06	2.97	0.09	0.0738	1195	1.21	>.05	Accept
		"Teachers often avail themselves of professional help."							
24	High	3.54	3.27	0.27	0.0778	951	3.47	<.001	Reject
	Low	2.66	2.59	0.07	0.0832	1195	0.84	>.05	Accept

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
		"Complete freedom is granted to students to investigate any local, state, national, or international issue."							
25	High	3.42	3.30	0.12	0.0814	951	1.47	>.05	Accept
	Low	3.43	3.12	0.31	0.0689	1195	4.49	<.001	Reject
		"Availability to students of materials that reflect all shades of political and sociological points of view."							
26	High	3.31	3.12	0.19	0.0777	951	2.44	<.02	Reject
	Low	2.97	2.71	0.26	0.0861	1195	3.01	<.005	Reject
		"High degree of teacher participation in social and political activities of the community."							
31	High	2.86	2.79	0.07	0.0936	951	0.74	>.05	Accept
	Low	2.37	2.53	0.16	0.0759	1195	2.10	<.05	Reject

Item	Group	$\bar{X}_A$	$\bar{X}_T$	$\bar{X} - \bar{X}$	S.E.	D.F.	T	P	H_o
"There exists a high level of cooperation among the teachers of the staff."									
38	High	3.56	3.52	0.04	0.0772	951	0.51	>.05	Accept
	Low	3.40	3.28	0.12	0.0695	1195	1.72	>.05	Accept
"The community and its residents are used for instructional purposes."									
40	High	2.93	2.98	0.05	0.0994	951	0.50	>.05	Accept
	Low	2.28	2.18	0.10	0.0794	1195	1.25	>.05	Accept
"A great deal of homework is assigned to students."									
50	High	3.08	2.84	0.24	0.0932	951	2.57	<.001	Reject
	Low	2.61	2.54	0.07	0.0655	1195	1.06	>.05	Accept

APPENDIX I

DIFFERENCES BETWEEN TOTAL MEAN SCORES AND BETWEEN CATEGORY MEAN SCORES OF TEACHERS AND ADMINISTRATORS WITHIN DISTRICTS NO. 1, NO. 10, AND NO. 37

Differences between Total Mean Scores and between Category Mean Scores of Teachers and Administrators within Districts No. 1, No. 10, and No. 37. No. 1: Teacher N=405, Administrator N=61; No. 10: Teacher N=28, Administrator N=3; No. 37: Teacher N=10, Administrator N=3.

District	$\bar{X}_T$	$\bar{X}_A$	$\bar{X}-\bar{X}$	S.E.	D.F.	T	P	H_o
			Total Score (56 items)					
No. 1	167.34	172.18	4.84	2.406	464	2.01	$<.05$	Reject
No. 10	146.25	146.33	0.08	11.95	29	0.006	$>.05$	Accept
No. 37	146.80	152.33	5.53	12.76	11	0.43	$>.05$	Accept
			Category I Score: Student's Level of Knowledge (6 items)					
No. 1	16.92	17.91	0.99	4.38	464	0.22	$>.05$	Accept
No. 10	14.28	13.66	0.62	1.89	29	0.32	$>.05$	Accept
No. 37	15.60	16.33	0.73	1.89	11	0.38	$>.05$	Accept
			Category II Scores: Community Attitudes (11 items)					
No. 1	30.02	30.34	0.32	0.681	464	0.469	$>.05$	Accept
No. 10	26.60	29.66	3.06	2.88	29	1.06	$>.05$	Accept
No. 37	25.50	27.33	1.83	3.54	11	0.51	$>.05$	Accept

The null hypotheses are rejected at the 0.05 significance level. Higher significance levels are indicated.

District	$\bar{X}_T$	$\bar{X}_A$	$\bar{X}-\bar{X}$	S.E.	D.F.	T	P	H_o
Category III Score: Curriculum (5 items)								
No. 1	17.15	17.75	0.60	0.999	464	0.60	$>.05$	Accept
No. 10	14.32	12.00	2.32	2.14	29	1.08	$>.05$	Accept
No. 37	15.40	16.00	0.60	1.59	11	0.377	$>.05$	Accept
Category IV Score: Use of Facilities (1 item)								
No. 1	3.43	3.60	0.17	0.096	464	1.77	$>.05$	Accept
No. 10	2.64	3.00	0.36	0.629	29	0.572	$>.05$	Accept
No. 37	3.10	4.00	0.90	0.521	11	1.92	$>.05$	Accept
Category V Score: Socio-cultural Composition of the Community (11 items)								
No. 1	29.26	28.68	0.58	0.510	464	1.13	$>.05$	Accept
No. 10	26.35	27.33	0.98	1.71	29	0.573	$>.05$	Accept
No. 37	24.50	23.00	1.50	1.64	11	0.91	$>.05$	Accept

District	$\bar{X}_T$	$\bar{X}_A$	$\bar{X}-\bar{X}$	S.E.	D.F.	T	P	H_o
Category VI Score: Administration and Supervision								
No. 1	22.33	23.50	1.17	0.404	464	2.89	<.005	Reject
No. 10	18.35	18.66	0.31	2.09	29	0.14	>.05	Accept
No. 37	18.10	17.33	0.77	2.17	11	0.35	>.05	Accept
Category VII Score: The Teacher and Teaching Methods (15 items)								
No. 1	48.20	50.36	2.16	0.723	464	2.98	<.005	Reject
No. 10	43.67	41.66	2.01	3.59	29	0.55	>.05	Accept
No. 37	44.60	48.30	3.70	4.08	11	0.90	>.05	Accept

APPENDIX J

ANALYSIS OF VARIANCE RELIABILITY TESTS FOR TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN HIGH AND IN LOW FINANCIAL SUPPORT QUARTILES

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in High Financial Support Quartile.

Teachers (N=871)

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers	870	4514.01	5.1885	0.90	10.1	<.01	3.02	0.002
Items	55	11058.61	201.0656					
Error	47850	24452.68	0.5110					

Administrators (N=82)

Admin.	81	406.96	5.02	0.90	10.8	<.01	3.12	0.001
Items	55	1305.34	23.73					
Error	4455	2068.58	0.46					

See pp. 171-173 for explanation of r_{tt}, F, and V.

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.

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers	870	1491	1.71	0.77	4.38	<.01	1.83	0.06
Items	5	169	33.80					
Error	4350	1721	0.39					

Administrators

Admin.	81	103.49	1.277	0.71	3.52	<.01	1.58	0.11
Items	5	36.96	7.39					
Error	405	148.21	0.365					

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and of Administrators in High Financial Support Quartile

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	870	2076	2.38	0.80	5.06	<.01	2.01	0.04
Items	10	1004	100.4					
Error	8700	4153	0.47					

Administrators

Admin.	81	184.50	2.27	0.76	4.28	<.01	1.80	0.07
Items	10	127.15	12.71					
Error	810	431.04	0.53					

Analysis of Variance Reliability Tests for Category III Scores (Curriculum) of Teachers and of Administrators in High Financial Support Quartile.

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	870	805	0.92	0.67	3.06	<.01	1.43	0.15
Items	4	242	60.50					
Error	3480	1044	0.30					

Administrators

Admin.	81	56.31	0.69	0.69	3.3	<.01	1.51	0.13
Items	4	31.68	7.92					
Error	324	68.32	0.21					

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

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	870	1003	1.15	0.39	1.64	<.01	0.80	0.42
Items	10	4286	428.6					
Error	8700	6136	0.70					

Administrators

Admin.	81	96.74	1.19	0.46	1.85	<.01	0.92	0.35
Items	10	460.20	46.02					
Error	810	521.26	0.64					

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and of Administrators in High Financial Support Quartile.

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	870	1115.32	1.28	0.61	2.61	<.01	1.26	0.20
Items	6	934.17	155.69					
Error	5220	2590.41	0.49					

Administrators

Admin.	81	100.57	1.24	0.65	2.88	<.01	1.36	0.17
Items	6	49.15	8.19					
Error	486	210.14	0.43					

Analysis of Variance Reliability Tests for Category VII Scores (The Teacher and Teaching Methods) of Teachers and of Administrators in High Financial Support Quartile

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	870	1439.17	1.65	0.75	4.02	$<.01$	1.73	0.08
Items	14	1155.62	82.54					
Error	12180	5104.32	0.41					

Administrators

Admin.	81	133.98	1.65	0.79	4.85	$<.01$	1.96	0.05
Items	14	100.80	7.20					
Error	1134	394.94	0.34					

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in Low Financial Support Quartile

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Squares	r_{tt}	F	P	V	P
Teachers	1090	7760.68	7.1198	0.95	24.5	<.01	4.85	0.000001
Items	55	30019.77	545.8140					
Error	59950	17480.15	0.2915					

Administrators

Admin.	105	502.55	4.78	0.89	9.19	<.01	2.86	0.004
Items	55	1620.97	29.47					
Error	5775	3006.12	0.52					

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

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	1090	1831.38	1.6801	0.75	4.05	<.01	1.74	0.08
Items	5	125.04	25.00					
Error	5450	2258.73	0.4144					

Administrators

Admin.	105	138.98	1.3237	0.70	3.30	<.01	1.50	0.13
Items	5	25.33	5.0069					
Error	525	211.83	0.4034					

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and of Administrators in Low Financial Support Quartile

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	1090	2589.55	2.3757	0.78	4.62	$<.01$	1.90	0.05
Items	10	1257.87	125.787					
Error	10900	5605.77	0.514					

Administrators

Admin.	105	163.40	1.55	0.68	2.21	$<.01$	1.46	0.14
Items	10	138.96	13.89					
Error	1050	517.41	0.49					

Analysis of Variance Reliability Tests for Category III Scores (Curriculum) of Teachers and of Administrators in Low Financial Support Quartile

Teachers

Source or Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	1090	2095.81	1.9227	0.74	3.90	<.01	1.70	0.09
Items	4	132.05	33.0125					
Error	4360	2150.75	0.4931					

Administrators

Admin.	105	164.32	1.564	0.74	3.75	<.01	1.65	0.09
Items	4	8.98	2.245					
Error	420	175.22	0.417					

Analysis of Variance Reliability Tests for Category V Scores (Socio-cultural Composition of the Community) of Teachers and of Administrators in Low Financial Support Quartile

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	1090	1288.04	1.1816	0.43	1.77	<.01	0.88	0.37
Items	10	5822.02	582.202					
Error	10900	7262.35	0.6662					

Administrators

Admin.	105	84.35	0.8033	0.14	1.15	>.01 NS	0.39	0.70
Items	10	660.09	66.00					
Error	1050	728.10	0.6934					

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and of Administrators in Low Financial Support Quartile

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	1090	1827.09	1.6762	0.68	3.13	<.01	1.45	0.14
Items	6	911.06	151.8438					
Error	6540	3501.22	0.5353					

Administrators

Admin.	105	131.41	1.25	0.61	2.60	<.01	1.26	0.20
Items	6	118.60	19.76					
Error	630	302.13	0.48					

Analysis of Variance Reliability Tests for Category VII Scores (The Teacher and Teaching Methods) of Teachers and of Administrators in Low Financial Support Quartile

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	1090	2584.04	2.3706	0.80	5.04	<.01	2.01	0.04
Items	14	2584.99	184.6424					
Error	15260	7192.47	0.4713					

Administrators

Admin.	105	191.37	1.82	0.78	3.55	<.01	1.59	0.10
Items	14	252.69	18.04					
Error	1470	593.91	0.40					

APPENDIX K

ANALYSIS OF VARIANCE RELIABILITY TESTS FOR TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN DISTRICT NO. 1 (HIGH FINANCIAL SUPPORT QUARTILE)

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in District No. 1 (High Financial Support Quartile)

Teachers (N=405)

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	404	2231.33	5.5230	0.90	10.56	<.01	3.08	0.001
Items	55	5582.26	101.4956					
Error	22220	11641.30	0.5239					

Administrators (N=61)

Admin.	60	313.20	5.2200	0.91	11.94	<.01	3.31	0.0009
Items	55	1020.03	18.5460					
Error	3300	1442.74	0.4371					

See pp. 171-173 for explanation of r_{tt}, F, and V.

Analysis of Variance Reliability Tests for Category I Scores (Student's Level of Knowledge and Attitudes) of Teachers and of Administrators in District No. 1 (High Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	404	707.25	1.7506	0.81	3.34	<.01	2.09	0.03
Items	5	115.63	23.1260					
Error	2020	654.54	0.3240					

Administrators

Admin.	60	80.44	1.3406	0.73	3.82	<.01	1.67	0.09
Items	5	27.26	5.4500					
Error	300	105.24	0.3508					

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and of Administrators in District No. 1 (High Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	404	916.80	2.2693	0.76	4.25	<.01	1.80	0.07
Items	10	417.95	41.7950					
Error	4040	2156.78	0.5338					

Administrators

Admin.	60	121.07	2.0178	0.69	3.23	<.01	1.49	0.13
Items	10	103.64	10.3640					
Error	600	374.18	0.6236					

Analysis of Variance Reliability Tests for Category III Scores (Curriculum) of Teachers and of Administrators in District No. 1 (High Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	404	445.18	1.1019	0.69	3.30	<.01	1.51	0.13
Items	4	158.45	39.6125					
Error	1616	539.15	0.3336					

Administrators

Admin.	60	41.07	0.6845	0.68	3.13	<.01	1.45	0.14
Items	4	28.02	7.0050					
Error	240	52.38	0.2182					

Analysis of Variance Reliability Tests for Category V Scores (Socio-cultural Composition of the Community) of Teachers and of Administrators in District No. 1 (High Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	404	509.11	1.2601	0.44	1.81	<.01	0.90	0.36
Items	10	1999.32	199.9320					
Error	4040	2807.05	0.6948					

Administrators

Admin.	60	73.63	1.2283	0.50	2.01	<.01	1.00	0.31
Items	10	369.95	36.9950					
Error	600	366.24	0.6104					

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and of Administrators in District No. 1 (High Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	404	504.24	1.2481	0.59	2.43	<.01	1.19	0.23
Items	6	452.10	75.3500					
Error	2424	1240.19	0.5116					

Administrators

Admin.	60	70.18	1.1696	0.69	3.29	<.01	1.51	0.13
Items	6	34.27	5.7116					
Error	360	127.73	0.3548					

Analysis of Variance Reliability Tests for Category VII Scores (The Teacher and Teaching Methods) of Teachers and of Administrators in District No. 1 (High Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	404	750.10	1.8566	0.78	4.66	<.01	1.91	0.05
Items	14	705.50	70.5500					
Error	5656	2251.50	0.3980					

Administrators

Admin.	60	106.94	1.7823	0.83	6.06	<.01	2.24	0.02
Items	14	74.43	5.3164					
Error	840	246.77	0.2937					

APPENDIX L

ANALYSIS OF VARIANCE RELIABILITY TESTS FOR TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN DISTRICT NO. 10 (LOW FINANCIAL SUPPORT QUARTILE)

Analysis of Variance Reliability Tests for Total Scores of Teachers and of Administrators in District No. 10 (Low Financial Support Quartile)

Teachers (N=28)

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	27	198.77	7.3618	0.93	14.93	<.01	3.73	0.0003
Items	55	393.72	7.1585					
Error	1485	731.98	0.4929					

Administrators (N=3)

Admin.	2	1.77	0.8850	0.21	1.25	>.01 NS	0.507	0.61
Items	55	40.52	0.736					
Error	110	77.57	0.7051					

See pp. 171-173 for explanation of r_{tt}, F, and V.

Analysis of Variance Reliability Tests for Category I Scores (Student's Level of Knowledge and Attitudes) of Teachers and Administrators in District No. 10 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	27	40.95	1.5166	0.85	6.76	<.01	2.40	0.016
Items	5	6.40	1.28					
Error	135	30.27	0.2242					

Administrators

Admin.	2	5.78	2.89	0.73	3.82	>.01 NS	1.68	0.09
Items	5	2.28	0.456					
Error	10	7.56	0.756					

Analysis of Variance Reliability Tests for Category II Scores (Community Attitudes) of Teachers and Administrators in District No. 10 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	27	53.70	1.9178	0.57	2.35	<.01	1.16	0.25
Items	10	25.15	2.5150					
Error	270	220.13	0.8152					

Administrators

Admin.	2	5.87	2.9350	0.85	6.19	<.01	2.29	0.02
Items	10	3.63	0.363					
Error	20	9.47	0.4735					

Analysis of Variance Reliability Tests for Category III Scores (Curriculum) of Teachers and Administrators in District No. 10 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	27	64.03	2.3714	0.51	2.04	<.01	1.02	0.31
Items	4	2.60	0.6500					
Error	108	58.80	1.1613					

Administrators

Admin.	2	80.14	40.07	Negative	-	-	-	-
Items	4	84.00	21.00					
Error	8	Negative	-					

Analysis of Variance Reliability Tests for Category V (Socio-cultural Composition of the Community) of Teachers and Administrators in District No. 10 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	27	20.58	0.7622	0.34	1.53	$>.01$ NS	0.72	0.47
Items	10	186.32	18.6320					
Error	270	134.78	0.4991					

Administrators

Admin.	2	0.25	0.125	negative				
Items	10	16.91	1.691					
Error	20	11.09	0.5545					

Analysis of Variance Reliability Tests for Category VI Scores (Administration and Supervision) of Teachers and Administrators in District No. 10 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	27	47.49	1.7588	0.70	3.33	$<.01$	1.52	0.12
Items	6	9.21	1.53					
Error	162	85.37	0.5269					

Administrators

Admin.	2	1.52	0.76	0.21	1.27	$>.01$ NS	0.52	0.60
Items	6	4.00	0.666					
Error	12	7.15	0.5958					

Analysis of Variance Reliability Tests for Category VII Scores (The Teacher and Teaching Methods) of Teachers and Administrators in District No. 10 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	27	66.28	2.4548	0.81	4.36	<.01	2.08	0.03
Items	14	82.50	5.88					
Error	378	172.97	0.4575					

Administrators

Admin.	2	1.38	0.690	0.37	1.53	>.01 NS	0.73	0.46
Items	14	13.78	0.9842					
Error	28	12.62	0.4507					

APPENDIX M

ANALYSIS OF VARIANCE RELIABILITY TESTS FOR TOTAL SCORES AND CATEGORY SCORES OF TEACHERS AND OF ADMINISTRATORS IN DISTRICT NO. 37 (LOW FINANCIAL SUPPORT QUARTILE)

Analysis of Variance Reliability Tests of Total Scores of Teachers and Administrators in District No. 37 (Low Financial Support Quartile)

Teachers (N=10)

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	9	69.82	7.7577	0.93	15.86	$<.01$	3.85	0.0001
Items	55	272.55	4.9554					
Error	495	236.38	0.4775					

Administrators (N=3)

Admin.	2	4.52	2.260	0.50	1.98	$>.01$ NS	0.705	0.47
Items	55	138.19	2.5125					
Error	110	125.25	1.1386					

See pp. 171-173 for explanation of r_{tt}, F, and V.

Analysis of Variance Reliability Tests of Category I Scores (Student's Level of Knowledge and Attitudes) of Teachers and of Administrators in District No. 37 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	9	13.73	1.5255	0.17	1.21	>.01 NS	0.45	0.65
Items	5	9.00	1.80					
Error	45	56.57	1.2593					

Administrators

Admin.	2	1.45	0.7250	negative	-	-	-	-
Items	5	5.28	1.0560					
Error	10	27.89	2.789					

Analysis of Variance Reliability Tests of Category II Scores (Community Attitudes) of Teachers and of Administrators in District No. 37 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	9	28.87	3.2077	0.81	5.36	$<.01$	2.08	0.03
Items	10	13.17	1.3170					
Error	90	53.83	0.5981					

Administrators

Admin.	2	0.06	0.03	negative	-	-	-	-
Items	10	14.25	1.4250					
Error	20	41.94	2.0970					

Analysis of Variance Reliability Tests of Category III Scores (Curriculum) of Teachers and Administrators in District No. 37 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	9	12.88	1.4311	0.82	5.30	<.01	2.08	0.03
Items	4	3.08	0.770					
Error	36	9.72	0.270					

Administrators

Admin.	2	00.00	-	negative	-	-	-	-
Items	4	00.00	-					
Error	8	negative	-					

Analysis of Variance Reliability Tests of Category V Scores (Socio-cultural Composition of the Community) of Teachers and Administrators in District No. 37 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	9	4.95	0.5500	0.14	1.16	>.01 NS	0.41	0.68
Items	10	102.02	10.2020					
Error	90	42.35	0.4705					

Administrators

Admin.	2	1.27	0.6350	nega-tive	-	-	-	-
Items	10	21.73	2.1730					
Error	20	42.73	2.1365					

Analysis of Variance Reliability Tests of Category VI Scores (Administration and Supervision) of Teachers and Administrators in District No. 37 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	9	9.84	1.0933	0.79	4.67	$<.01$	1.9	0.05
Items	6	22.49	3.7483					
Error	54	12.66	0.2344					

Administrators

Admin.	2	7.24	3.6200	0.51	2.04	$>.01$ NS	1.02	0.30
Items	6	5.24	0.8733					
Error	12	8.76	1.7700					

Analysis of Variance Reliability Tests of Category VII Scores (The Teacher and Teaching Methods) of Teachers and Administrators in District No. 37 (Low Financial Support Quartile)

Teachers

Source of Variation	D.F.	Sum of Squares	Mean Square	r_{tt}	F	P	V	P
Teachers	9	28.03	3.1144	0.95	29.9	<.01	4.2	0.00004
Items	14	19.30	1.378					
Error	126	70.57	0.1425					

Administrators

Admin.	2	0.18	0.090	negative	-	-	-	-
Items	14	23.78	1.6985					
Error	28	7.82	0.2792