A STUDY OF THE RELATIONSHIP BETWEEN SHORTENED SCHOOL DAY SESSIONS IN MICHIGAN PUBLIC SCHOOLS AND SELECTED FINANCIAL CHARACTERISTICS

By

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Administration and Higher Education
College of Education

1970

ABSTRACT

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Summary

Purposes of the Study

This study was undertaken to determine if school districts on shortened sessions have common financial characteristics which, when compared with the financial characteristics of school districts on full-day sessions, would reveal significant differences.

1. It was expected that the analysis of financial variables would show a relationship between inequality of educational opportunity evidenced by shortened sessions, and inequality of educational opportunity as reflected by school district expenditure and income patterns.

2. It was also expected that a relationship would exist between the outcomes of elections (to increase the operational millage rate and/or to bond for the construction of facilities), and the decision by the local board of education to initiate a shortened school day.

Limitations of the Study

1. Analysis was limited to specific financial variables including: expenditures (average teacher's salary, instruction salary expenditure per student, and total general fund expenditure per student), millage rates (total for all school purposes, operational, and debt retirement), and wealth (state equalized valuation per student).

2. Sources of data restricted the study to Michigan school districts offering kindergarten through twelfth grade programs.

3. The study does not provide findings for all variables for the school year 1969-70, as the data required for analysis were not available.

4. A consistent pattern of findings in each of the years analyzed was established as the criterion to reject or not reject the null hypothesis.

Review of Literature

The general areas of interest in this study were the adequacy of the Michigan State-Aid Formula to equalize educational opportunity, the financial implications of teacher militancy on school district expenditures, and the lack of state assistance in the financing of school facilities.

The review of literature consisted of a discussion of state responsibility for financing public education, studies contributing to the present structure of financing

public education in Michigan, the economic implications of teacher militancy, and studies relating wealth and expenditure to equality of educational opportunity.

Design of the Study

The sample.--Three test samples of school districts on shortened sessions were selected. The samples consisted of 20 school districts in 1967-68, 17 school districts in 1968-69, and 22 in 1969-70.

Procedure.--The financial characteristics of districts on shortened sessions were first compared with a control sample of school districts on full-day sessions, where school district size and geographic location were controlled, and second with the state mean representing all school districts in the state. Matched pair analysis was used to eliminate two variables, size and geographic location, which could influence the validity of the findings.

Instrumentation.--The instrument used was designed to obtain data related to school district elections. The information required was the outcome of elections (to increase the operational millage rate and/or to bond for the construction of facilities), and the influence of the election outcome on the board's decision to shorten the school day.

Analysis.--The following methods were used in the treatment of data:

1. The correlated t test was considered the statistic appropriate to measure the difference in means between matched pairs.

2. The t statistic was used in computations to measure the difference between the mean of each characteristic in the test sample and the state mean used as a population parameter.

3. Independence between categorical characteristics in mutually exhaustive classes was measured by the use of the phi correlation coefficient.

4. Linear relationships between variables were computed using the Pearson product-moment correlation coefficient.

Findings were considered significant on all tests at $P < 0.05$.

Conclusions

The comparison of the means of financial variables in the test sample of school districts on shortened sessions with the means of the control sample on full-day sessions, when school district size and geographic location were controlled, revealed that the mean average teacher's salary in the test sample was significantly lower than that of the control sample in 1967-68. Replication of the analysis using data for 1968-69 did not show significance.

Comparison of the means of six other variables including instruction salary expenditure per student, total general fund expenditure per student, total millage rate, operational millage rate, debt retirement millage rate, and state equalized valuation per student indicated no significant difference.

The distribution of the variables in the control sample approximated that of the test sample.

When the same financial variables in the test sample were compared with state means it was found that the mean instruction salary expenditure per student in the test sample was significantly lower than the state mean in 1968-69, but no significant difference in means was found in 1967-68.

Analysis of data supported the hypotheses that the means of the average teacher's salary, total general fund expenditure per student, total millage rate for all school purposes, and operational millage rate in the test sample are significantly below the state means.

The hypothesis that the mean debt retirement millage rate in the test sample would be found to be significantly higher than the state mean was also verified.

The mean state equalized valuation per student in school districts in the test sample was significantly lower than the state mean in 1968-69. Surprisingly, no support was given this finding in either 1967-68 or 1969-70, when the analysis of data showed no significant difference.

Data collected on school elections supported the hypothesis that a positive dependent relationship exists between election outcomes (operational millage and/or construction bond proposals), and the decision by local school boards to place students on shortened sessions.

It was also observed that there was a weak linear relationship between operational millage rates (local effort) and the total general fund expenditure (educational opportunity provided) in 1967-68. However, the analysis of data in 1968-69 showed the two variables to be independent.

ACKNOWLEDGMENTS

The writer wishes to express gratitude to Dr. Louis Romano, chairman of his Doctoral Committee, for his patience, encouragement, helpfulness, and interest from the beginning of this project to its culmination. Dr. Richard Featherstone, Dr. Lawrence Borosage, and Dr. Philip M. Marcus completed the committee. Their assistance and constructive criticisms are gratefully acknowledge.

A debt of gratitude is due Dr. Andrew C. Porter, Mr. Fredrick R. Wilson, and Mr. John Schweitzer for their assistance in the development of the research design and analysis.

Thanks must also be extended to the Michigan Department of Education for their cooperation in providing data, and particularly to Mrs. Shirley Waldron, who was as helpful to a graduate student as she has been to school administrators through the years.

Words alone can never express the appreciation earned by my family. For cheerfully fulfilling her role as wife, mother, typist, and part-time father, I extend my deepest thanks to my wife, Mickey. And, finally, my thanks to two great teenagers, Jeffrey and Julie, wise beyond their years, for knowing how to handle an often disgruntled and irritable father.

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CHAPTER I

INTRODUCTION

> What the best and wisest parent wants for his own child, that must the community want for all its children. Any other ideal for our schools is narrow and unlovely; acted upon destroys our democracy.[1]
>
> --John Dewey

Statistical data provided by the Michigan Department of Education indicate that during the school year 1967-68 a total of 10,901 students in Michigan public schools were attending school on a shortened school day program. In the following year 1968-69, the total number of students attending shortened sessions had increased to 15,938, which constitutes a 46 per cent increase in one year. This past fall (1969), three of the larger districts in the state announced that several grades in their districts will be attending shortened school days during the 1969-70 school year, which should push the total of students attending shortened sessions to a number in excess of 20,000. Official data to support this estimate will not be available, however, until the fall of 1970, when the school districts of Michigan file their Annual Statistical Reports for the prior year.

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[1]John Dewey, The School and Society (Chicago: University Press, 1900), p. 10.

It does not appear that the 1969-70 school year will be the peak year for shortened sessions, but rather a continuation of a trend. School districts throughout Michigan are notifying teachers by the hundreds that their services will not be contracted for the 1970-71 school year unless additional revenues are found to meet contractual obligations.

School boards in Michigan which have implemented shortened sessions argue that they had no choice, citing a State law that prohibits deficit financing by school districts. Efforts by residents of the Livonia and Waterford school districts to initiate court suits against their local school boards to require full-day schooling for all students were unsuccessful. The Michigan Supreme Court ruled that actions by local boards of education to shorten the school day were not illegal, due to the non-existence of a statutory definition of what a school day should encompass.

Since the Supreme Court ruling, the Michigan State Board of Education at its April, 1970, meeting revised the State School Code to specify what constitutes the length of a school day.[2] However, under the provisions of the

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[2]Michigan Department of Education, State of Michigan General School Laws (Lansing: State Board of Education, 1966), 1970 Supplement to the "Child Accounting Rules" 340.14. Rules approved by the Michigan State Board of Education require a minimum of 900 hours of student instruction, or 990 hours including a maximum of two study halls, spread over a required 180 days. Board action was

code the State Board of Education may approve shorter student instruction days upon finding that an "emergency situation" exists in a school district. An "emergency situation" is defined as the "existence of extreme financial condition or a severe classroom shortage."

The Michigan State Board of Education has ruled that every student in the State of Michigan in the first through twelfth grades is entitled to the educational opportunity of attending a school providing a minimum of five hours of student instruction each day. The State Board recognized, however, that because of the inadequate financial structure supporting public education in Michigan, all children will not receive this minimum program; thus the "emergency situation" clause.

Significance of the Problem

There is common agreement that education is important and the quality of education provided should be the best. Though critics of education may disagree with the present structure, subject content or methodology used in our schools, there is agreement that today's children need a full education of the highest quality. Today's generation of parents is no different than prior generations, in that they seek the "better life" for their children and they view education as the means of obtaining this objective.

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taken after a public hearing on the rules was held February 24, 1970, with more than 300 persons in attendance, and testimony was taken from 54 persons.

The pattern of education in the United States, for more than a century, has been a system of public supported and operated "common schools."

Though the principle of public support and operation of education has been challenged many times, the most compelling argument for maintaining the present system is the imperative of social mobility. Conant[3] writes that there is a "devotion to the ideals of equality of opportunity and equality of status" in this country. An ideal exists that every child should have an equal start in life. In our affluent society, education is becoming the most important determinant of an individual's income and status. Though this ideal of equality has not been totally attained, public education has been the most influential instrument we have toward that goal.

As early as 1906, Cubberley[4] recognized that a wide variation of educational opportunities existed among communities, and devised the "Cubberley Plan" for "the apportionment of school funds," whereby educational opportunity would be equalized by subsidizing local school districts with state funds. Cubberley summarized his views as follows:

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[3]James B. Conant, The American High School Today (New York: McGraw-Hill, 1959), p. 8.

[4]Ellwood P. Cubberley, School Funds and Their Apportionment (New York: Teachers College, Columbia University, 1906).

> Theoretically all the children of the state are equally important and are entitled to have the same advantages; practically this can never be quite true. The duty of the state is to secure for all as high a minimum of good instruction as is possible, but not to reduce all to this minimum; to equalize the advantages to all as nearly as can be done with the resources at hand; to place premium on those local efforts which will enable communities to rise above the legal minimum as far as possible; and to encourage communities to extend their educational energies to new and desirable undertakings.[5]

Cubberley went on to emphasize the importance of the state, in that:

> . . . Any attempt at the equalization of the opportunities for education, much less any attempt at equalizing burdens, is clearly impossible under a system of exclusively local taxation. Some form of general aid is a necessity if anything like common advantages are to be provided for all.[6]

Though Cubberley's efforts opened the way for participation by the state in assisting local districts in financing their schools, his plan was far from equalizing, in that it consisted of a "flat grant." In essence, each district received the same sum of money from the state for each child in attendance, regardless of the ability of the local district to provide its own funds.

In the early 1920's, Strayer and Haig pointed out the deficiencies in the "Cubberley Plan" in a report prepared for the New York State Department of Education by the Educational Finance Inquiry Commission. This report

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[5] Ibid., p. 242.

[6] Ibid., p. 54.

became the conceptual basis of the "Strayer-Haig formula" or "foundation program," which is the most commonly used present-day practice in equalizing educational opportunity. The report stated:

> There exists . . . a movement which has come to be known as the "equalization of educational opportunity" or the "equalization of school support" . . . the interpretation is somewhat as follows: The state should insure equal educational facilities to every child within its borders at a uniform effort throughout the state in terms of the burden of taxation: the tax burden of education should throughout the state be uniform in relation to taxpaying ability, and the provision of the schools should be uniform in relation to the educable population desiring education.

However, this did not preclude any community from providing a particularly costly education program if it so desired. The primary responsibility of the state is to:

> . . . insist that there be an adequate minimum offering everywhere, the expense of which should be considered a prior claim on the state's economic resources.[7]

> . . . The essentials are that there should be uniformity in the rates of school taxation levied to provide the satisfactory minimum offering and that there be such a degree of state control over the expenditure of the proceeds of school taxes as may be necessary to insure that the satisfactory minimum offering shall be made at a reasonable cost.[8]

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[7]George D. Strayer and Robert M. Haig, Financing of Education in the State of New York (New York: The Macmillan Company, 1923), p. 173.

[8]Ibid., p. 175.

Though Mort and his associates[9] made a number of refinements in the "foundation program," such as applying weighted-pupil measures to compensate for the cost difference between educating elementary and secondary students, the following principles from the work of Strayer and Haig are incorporated in most state aid plans. First, the grant may be used to reduce extreme differences among districts in local tax burden; second, it should afford relief from local taxes; and third, it should stimulate local expenditures to insure continuous improvement in education.

The present study supports the premise that the regulation and support of public education is a state function and responsibility. If education is, indeed, a state function and responsibility, where does the State of Michigan stand today in providing educational opportunity? The position is clearly given in a statement presented to the State Board of Education by State Superintendent of Public Instruction, Ira Polley:

> 1. The State of Michigan is committed to the proposition that the young people in all Michigan communities are entitled not only to educational programs equal to the best now provided in the State but second to none in the Nation.

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[9]Paul R. Mort, Walter C. Reusser, and John W. Polley, Public School Finance (3rd. ed.; New York: McGraw-Hill Book Company, 1960), p. 109.

2. The availability of high quality comprehensive programs and services should not--indeed cannot--be dependent upon fortuitous factors and circumstances.
3. Educational programs and services provided by the school districts in Michigan vary tremendously from district to district, not only in the quality of these, but in the degree of comprehensiveness of these program offerings.
4. The variation, from school district to school district, in the quality and comprehensiveness of program offerings is due mainly, although not exclusively, to the variation in all financial resources available to the districts.
5. Financial assistance to school districts from state appropriations is one variable in the total financial resources available to these; thus the amounts and means of providing state financial assistance to school districts must be viewed as an important factor in the provision of high quality comprehensive programs and services in all school districts in Michigan.
6. Since all state financial assistance to the public schools since 1957 has been made by "piece-meal" amendments to Act 312 of the Public Acts of 1957, which is commonly known as the "State School Aid Act," the time has arrived for an objective study of the means, the kinds, and the extent of financial aids provided to public school districts from that source in relationship to all other sources.[10]

On the basis of the preceding introductory data, the problem with which this study is concerned can be stated.

Statement of the Problem

The Michigan Department of Education considers shortened school sessions as substandard and representing inequality of educational opportunity.[11] This study

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[10] Prepared statement of Ira Polley, State Superintendent of Public Instruction, which was presented to the State Board of Education on July 27, 1966.

[11] See Footnote 2, pp. 2-3.

investigates the possibility that school districts on shortened sessions have common financial characteristics which are reflected in selected variables related to expenditures, millage rates, and wealth. When these variables are compared with those in a sample of school districts on full-day sessions, and with all school districts in the State, significant differences will be found. It is the expectation of this study that the analysis of financial data will reveal that there are relationships between inequality of educational opportunity as projected in shortened sessions, and inequality of educational opportunity as reflected in school district expenditure and income patterns. The general areas studied will include the adequacy of the Michigan State-Aid Support Formula to equalize educational opportunity, the implications of teacher militancy on school district expenditures, and the lack of State assistance in the financing of school facilities.

The specific variables to be analyzed include: expenditures (average teacher's salary, instructional salary expenditure per student, and total general fund expenditure per student), millage rates (total for all school purposes, operational, and debt retirement), and wealth (state equalized valuation per student).

Research Questions

The selection of the general areas of investigation was influenced by observations made by Thomas in the Michigan School Finance Study (1968).[12] Though the problems of education in Michigan as they relate to the "inequalities in educational expenditures," "the absence of direct state contribution to the financing of school construction," and "the recent wave of militancy on the part of teachers in regard to salaries" are less well publicized than many other problems, they are among the urgent problems of educational finance which face the State of Michigan.

The following related statements and questions were drafted to direct the design of this research. They represent the focus of inquiry and were used by the researcher as a logical approach to realize the purpose of this study.

Teacher Salaries

Since the passage of Public Act 379, an amendment to the State Labor Law, the Hutchinson Act of 1947, school boards in Michigan are required to negotiate salaries and other conditions of employment through collective bargaining. The demands of teachers for higher salaries

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[12] J. Alan Thomas, School Finance and Educational Opportunity in Michigan: Michigan School Finance Study (Lansing: Michigan Department of Education, 1968), p. 2.

through the collective bargaining process must be considered as to their possible effect upon allocation and expenditure of funds:

1. Is there a significant difference between average teachers' salaries in school districts on shortened sessions when compared with average teachers' salaries in school districts maintaining full-day programs?

2. Is there a significant difference between the instructional salary expenditure per student in school districts on shortened sessions when compared with the instructional salary expenditure per student in school districts maintaining full-day programs?

State Financial Support

State Grants-in-Aid Programs in Michigan and other states are based on the principle of equalization of educational opportunity. The measure, then, of how effective a state's Grants-in-Aid Program is, can be determined by the degree of equalization of educational opportunity it provides. Such questions must be raised in any consideration of state financial support.

1. Is there a significant relationship between the local operational millage rate levied (local effort), and the total general fund expenditure per student (educational opportunity)?

2. Is there a significant difference between the state equalized valuation per student in school districts on shortened sessions when compared with the state equalized valuation per student in school districts maintaining full-day programs?

3. Is there a significant difference between the total general fund expenditure per student (educational opportunity) in school districts on shortened sessions when compared with the total general fund expenditure per student (educational opportunity) in school districts maintaining full-day programs?

Local Financial Support

The accepted criterion for determining the degree of local school district effort is the total millage levied by the school district to support its school system. This total millage rate is normally comprised of an operational millage which provides revenue to maintain the schools, and a debt retirement millage which provides the funds required to meet bonded obligations. Though it would seem that school facilities and the instructional program would be inseparable, in Michigan there is no legislative provision for state financial assistance, recognizing the ability to pay, that would equalize the burden of providing school facilities. Such questions must be raised in any consideration of state financial support.

1. Is there a significant difference between the total millage rates levied in school districts on shortened sessions when compared with the total millage rates levied in school districts maintaining full-day programs?

2. Is there a significant difference between the operational millage rates levied in school districts on shortened sessions when compared with the operational millage rates levied in school districts maintaining full-day programs?

3. Is there a significant difference between the debt retirement millage rates levied in school districts on shortened sessions when compared with the debt retirement millage rates levied in school districts maintaining full-day programs?

4. In school districts on shortened sessions, was the action of the board of education influenced by the outcome of an election which would have increased the operational revenue, or authorized the selling of bonds to construct new facilities?

Definition of Terms

The definitions which follow are provided so that the content of this study can be explicitly understood and accurately interpreted. Some of the terms will be restated in research form in Chapter III to give greater clarity to the statement of the statistical hypotheses.

School district. A legal entity created by the Michigan State Legislature for the purpose of operating and maintaining public education within boundaries established by law.

State equalized valuation. The final appraised value by the Michigan State Commission as to the worth of real property in the State of Michigan. The appraised value, as adjusted, represents 50 per cent of the property's resale value.

State equalized valuation per student. The total state equalized valuation of a school district divided by the number of students in membership on the fourth Friday following the opening of school.

Mill. Equal to one-tenth of a cent. For school tax purposes, one mill represents a one dollar levy on each thousand dollars of state equalized valuation.

Total millage for all school purposes. The combined millage levy spread on the total state equalized valuation of the school district to meet debt retirement obligations and provide funds required to operate the schools.

Debt retirement millage. Only that portion of the total millage levied on state equalized valuation used to retire bonded obligations incurred through borrowing to construct or renovate school facilities.

Operational millage. Only that portion of the total millage levied on state equalized valuation used to maintain and operate the schools.

Contiguous school districts. School districts that share a common boundary.

Shortened sessions. A school day comprising less time than the State minimum requirement of five hours of classroom or laboratory instruction.[13]

Teachers' organization. The legally recognized representatives of the teaching staff selected by petition or elected under the provisions of Public Act 379, 1965.

Public Act 379. An amendment to the Michigan Labor Law, the Hutchinson Act of 1947. This amendment authorizes employees in the public sector to organize into unions and requires employers (school boards) to negotiate wages and other conditions of employment with the union's designated representative.

State Grants-in-Aid (state-aid). Those public funds which are allocated by the state to local school districts to equalize state-wide educational opportunity, to compensate for the highly visible property tax, and to stimulate local educational efforts.[14]

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[13]See footnote 2, pp. 2-3.

[14]Charles S. Benson, The Economics of Public Education (Boston: Houghton Mifflin Company, 1961), p. 223.

Equality of educational opportunity. "Without real measures of quality difference, attention is focused on variations in expenditure level." Equality of educational opportunity assumes "that the expenditure level in no district falls below a certain level, which is described as the minimum satisfactory offering."[15]

Procedures and Limitations

On the basis that this study can only be considered as one point of view in the investigation of the relationships between shortened sessions and selected financial characteristics, the research questions and general research hypotheses are dependent upon the following research assumptions:

1. That the major sources of data were accurate and valid. They include: Michigan Department of Education: Ranking of Public Schools by Selected Financial Data, 1967-68, and 1968-69; Michigan Association of School Administrators: Selected Administrative Information and Millage Levies Relative to Michigan Public School Districts, February, 1970; Michigan Department of Education: Analysis of Michigan Public School Revenues and Expenditures, 1967-68, and 1968-69; and computer printouts of selected data on school districts reporting students on shortened sessions.

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[15] Ibid., p. 241.

2. That the questionnaires designed to gather additional data from school districts in the sample population were completed by the respondents in an accurate and unbiased manner.

3. That this study used only selected financial and enrollment data, and therefore is not comprehensive of all possible statistical analyses.

4. That the findings of this study as to relationships between districts on shortened sessions and selected financial characteristics should be considered as associational rather than causal.

General Research Hypotheses

This research study assumes that relationships exist among school districts on shortened sessions, when measured by selected financial variables. It is further assumed that when these selected financial variables are compared with their counterparts in school districts on full-day sessions, significant differences can be observed. With these generalized assumptions serving as a guide, the following general research hypotheses were developed:

1. Financial characteristics, including average teachers' salaries and average instructional salary expenditure per student, in school districts on shortened sessions will be lower than similar financial characteristics in school districts on full-day sessions, if school district size and geographic location are controlled.

2. Total general fund expenditure per student in school districts on shortened sessions will be lower than the total general fund expenditure per student in school districts on full-day sessions, if school district size and geographic location are controlled.

3. Financial characteristics related to the support of schools, including operational millage, debt retirement millage, and total millage for all school purposes, in school districts on shortened sessions will be higher than similar financial characteristics in school districts on full-day sessions, if school size and geographic location are controlled.

4. The wealth measured in state equalized valuation per student in school districts on shortened sessions will be lower than the wealth in school districts on full-day sessions, if school district size and geographic location are controlled.

5. Financial characteristics, including average teacher salaries and instructional salary expenditure per student, in school districts on shortened sessions will be lower than the State mean.

6. Total general fund expenditure per student in school districts on shortened sessions will be lower than the State mean.

7. Financial characteristics related to the support of schools, including operational millage and total millage

for all school purposes, in school districts on shortened sessions will be lower than the State mean.

8. Debt retirement millage in school districts on shortened sessions will be higher than the State mean.

9. The wealth measured in state equalized valuation per student in school districts on shortened sessions will be lower than the State mean.

10. There is a positive relationship between election defeats of proposals to increase operational millage, or to bond for the purpose of constructing new facilities, and the decisions of boards of education to initiate shortened sessions.

11. In school districts on shortened sessions, equal local effort (measured in operational millage rates) does not provide equal educational opportunity (measured in total general fund expenditure per student) under the Michigan (Grants-in-Aid) formula.

The specific research hypotheses can be found in Chapter III, in which the design of this study is treated in detail.

Overview of the Study

It has been the purpose of this first chapter to present the problem. This study investigates the financial characteristics of school districts on shortened sessions as they are reflected in selected variables of expenditure, millage rates, and wealth. Analysis of these

variables is expected to provide grounds for making generalized statements related to inequality of educational opportunity. In addition to developing the problem, research questions have been posed, terms have been defined, procedures and limitations have been described, and the general research hypotheses have been stated.

In Chapter II, studies and related literature are reviewed in three areas related to this study: the functions of state and local financing of public education, the economic implications of teacher militancy, and the principle of equality of educational opportunity.

In Chapter III the specific design of the study is covered. This chapter includes the sources of data, the method of sample selection, instrumentation, the statistical hypotheses, and the techniques of statistical analysis employed.

Chapter IV presents the findings of the study, and discusses the results of this research. Chapter V summarizes the conclusions and implications, as well as recommending possible areas of future research.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This research is confined to a study of districts on shortened school day sessions, and their financial characteristics. Equality of educational opportunity has been researched using many variables, both in and out of school (i.e., class size, geographic location, teacher experience, socio-economic background, etc.). In this study the variables will be restricted to those related to wealth (equalized valuation per student), income (millage rates), and district expenditures, including teacher salaries. Shortened sessions are considered by the Michigan Department of Education as being substandard and representing inequality of educational opportunity.[1] This review of literature will attempt to establish a rationale to relate shortened sessions statistically to inequality of educational opportunity, through analysis of characteristics involving wealth and selected expenditures.

Since the research design involves the relationship between finance and equality of educational opportunity,

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[1]See Chapter I, footnote 2, pp. 2-3.

the review of literature will include a discussion of state responsibility for financing public education, studies contributing to the present structure of financing education in Michigan, the economics of teacher militancy, and studies relating wealth and expenditure to equality of educational opportunity.

Educational Opportunity: A Function of the State

Education in the United States, by tradition, has been a function of the state. The Federal Constitution contains no specific reference to education. As a result of this omission, the Federal Government is prohibited from assuming control of education by the Tenth Amendment,[2] which reads:

> . . . The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.[3]

Though the pattern of education in early American history was left largely to the discretion of the church or local governments, as each state adopted a constitution education was included as a state function. Cubberley asserted that the writers of these constitutions demonstrated foresight, in that the interest of all the people

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[2]Raleigh W. Holmstedt, State Control of Public School Finance, Bulletin of the School of Education, Vol. 16, No. 2 (Bloomington: Indiana University, 1932), p. 12.

[3]Constitution of the United States, 10th Amendment.

can only be served when the state exercises its authority through constitutional provision to control and regulate the schools.

> . . . The fact that schools arose with us largely as community undertakings, at first without state permission and later under the provisions of permissive laws, in no way has altered the fundamental principle that the state, and not the locality is the ultimate source of authority and the unit for legislative action. It is the people of the state as a whole who are supreme, . . . The state thus stands in the matter of education as an expressed will of all the people, and not a part of the people, and in consequence the expressed opinion of all must be superior to the expressed opinion of a part.[4]

Moehlman made reference to this principle of state control by pointing out that individuals and groups have continually challenged the constitutionality of state statutes governing education which have been enacted by the various state legislatures. The courts, however, without exception have held that education is a state function and that state governments have the right under the Federal Constitution to regulate the school programs provided in local school districts.[5]

A report of the Educational Policies Commission considered the regulatory function of education a vested interest of the state and all the people of the state.

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[4]Elwood P. Cubberley, State School Administration (New York: Houghton-Mifflin Company, 1927), pp. 121-122.

[5]Arthur B. Moehlman, School Administration (New York: Houghton-Mifflin Company, 1940), p. 23.

The Commission considered education too important to be left totally to the discretion of local communities.

> It is sound policy which designates education as a function of the state. Since education is a matter of general concern and not one which may be left safely to the complete control of local communities, the state has the right and the obligation to mandate a general program of education. It is even more important to recognize education as a function of the state in order that there may be no doubt with respect to the independence of this function from other governmental arrangements in the area . . . [the state] . . . may never safely overlook the failure to provide adequate education for all children.[6]

Burke noted that control and regulation of public education are not the only functions that have been assumed by the state. He contends that "by constitutional enactment, legislation, and practice" the states have not only assumed control of education; they have assumed the responsibility for education.[7]

Chase and Morphet concurred with Burke's observation in their report to the Council of State Governments, in which they stated:

> State responsibility for education is firmly embedded in the constitutions of the several states and buttressed by tradition and court decisions.
> . . . This responsibility of governments of the several states for education of their citizens is

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[6]Educational Policies Commission, The Structure and Administration of Education in American Democracy (Washington D.C.: Educational Policies Commission, 1938), p. 44.

[7]Arvin J. Burke, Defensible Spending in the Public Schools (New York: Teachers College, Columbia University, 1943), p. 18.

> much more than a theory or a legal convention. An examination of the efforts of the states to strengthen their public school systems indicates that it is a living principle.[8]

The Michigan Constitution, like the constitutions of most states, limits the constitutional provision for public education to a statement charging the legislature with the responsibility for an adequate and uniform system of education. The Michigan constitutional provision for education reads:

> The legislature shall maintain and support a system of free public elementary and secondary schools as defined by law. Every school district shall provide for the education of its pupils without discrimination as to religion, creed, race, color or national origin.[9]

This wording in the Michigan Constitution of 1963 is much stronger than that which was written in the Constitution of 1908. The Constitution now requires the legislature to "maintain and support" the school system rather than to "continue a system," as it was stated before.

Edward, an eminent authority on school law, noted that as long as the state acts within those limits provided by the Federal Constitution, it has wide plenary power to regulate matters of educational policy within the local school district. Edward contended that:

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[8]Council of State Governments, The Forty-Eight State School Systems (Chicago: Council of State Governments, 1949), p. 4.

[9]Michigan Constitution, Article VIII, Sec. 2.

> In the absence of constitutional prohibition the ends to be obtained and the means to be employed . . . [in educational matters] . . . are wholly subject to legislative determination. The legislature may determine the type of schools to be established throughout the state, the means of support, the organs of their administration, the concept of their curricula and the qualifications of their teachers.[10]

According to Hamilton and Mort:

> The most universal element of conceptual design in the American school system is the maxim that education is a concern of all the people. As it is usually stated, education is a state function. As commonly interpreted the federal constitution, by failing to provide specifically for it, left public education either to the states [in this sense, state governments] or to the people, to be handled as they saw fit. The conclusion is that education is a state function, not a federal function. But the state constitutions commonly charge the legislature with the duty of setting up an adequate and uniform system of public education. The conclusion from this is that public education is a function of legislative responsibility.[11]

In Michigan, then, the responsibility for maintaining and supporting education resides in the legislature. This being the case, what can be said for the authority and responsibilities of local school boards?

Hamilton and Mort, in a discussion of the powers of local school districts, emphasized that the courts have been consistent in holding that school districts are

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[10]Newton Edward, The Courts and Public Schools (rev. ed.; Chicago: University of Chicago Press, 1955), pp. 27-28.

[11]Robert R. Hamilton and Paul R. Mort, The Law and Public Education (2nd ed.; Brooklyn, N.Y.: The Foundation Press, 1959), p. 16.

instrumentalities of the state, created by legislative action to carry out the constitutional mandates to provide educational opportunities for the children of the state. School districts are agencies of limited power, having only those powers which have been expressly or by necessary implication conferred on them by the legislature.[12]

Though school districts do not have the inherent power to tax, in that they are instrumentalities created by the state legislature, the financing of public education is considered to be a joint enterprise in every state. The total funds made available to support education consist of local funds, usually derived from a local property tax, and a state subsidy in the form of grants-in-aid.[13] The concept of separation of tax sources to support public education has evolved through practice rather than by law. Technically, that portion of the local property tax collected to support the schools is not a local tax but a state tax.

> The power of a district to levy taxes is not indispensable to the operation of its school system. It is entirely possible for the legislature to levy the taxes and apportion them among the districts of the state in any manner it deems to the best interest of the schools of the state, assuming there are no constitutional limitations on the legislature in this regard. In fact, state

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[12] Ibid., p. 166.

[13] Hawaii is an exception. In Hawaii the schools are financed by a state appropriation with other departments of government. No property taxes are used to support the schools; all money comes from state revenues.

> aid plans are administered in this way. Other plans of financing the schools might be conceived. However, as a matter of general practice in this country, the power to levy taxes is delegated to the districts under legislative and constitutional restrictions.
>
> School taxes are state and not local in nature, even though they are levied by the local district. This result follows logically from the concept that education is a state and not a local function.[14]

Whereas the existing practice of separating tax sources does not offer great hope in solving the problem of local fiscal need, a program of centralized taxing does. Strayer and Haig made the following statement on this point:

> The simplest method of financing the school system to achieve the aims of the principle . . . of equalization . . . would be through uniform statewide taxes based on the ability to pay.[15]

The constitutionality of the centralized collection of taxes which, in effect, levies tax on the wealthy part of the state to provide for school expenditures in poorer sections, has been challenged many times in the courts. The courts have held, however, that legislatures are within their rights to levy taxes "uniformly" and to allocate funds to equalize educational opportunity if they determine it is in the best interest of the state.[16]

Benson saw centralization as a means of readily obtaining equalization in the distribution of tax burden

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[14] Hamilton and Mort, op. cit., p. 167.

[15] Strayer and Haig, op. cit., p. 174.

[16] Benson, op. cit., p. 226.

and equalizing educational opportunity in the schools. He was concerned, however, with the possibility that centralization of the fiscal structure would mean loss of local control.[17]

Commissioner James E. Allen, of the United States Office of Education, emphasized that local control and local finance are not necessarily inextricably tied together. He maintained that local boards should be involved with important decisions related to the hiring of staff and providing a program to meet the local needs. Too many boards are preoccupied with budgets.

> And let's be realistic: For most districts, local control is a myth. It doesn't exist, beyond their having the privilege to try to make the most out of a mediocre situation. Any district with a high school of only 500 students, or with a community that is unwilling or unable to vote necessary operating funds or bond issues, is very limited in what they can do. It may have "local control"--but control over what? Once these restrictions are removed, local control can begin to mean something.[18]

Fowlkes and Watson[19] surveyed the state educational support patterns in 11 midwestern states. Their findings

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[17] Benson, op. cit., p. 226.

[18] Theodore J. Miller, "The Case for Fiscal Reform Now," School Management, Vol. 13, No. 11 (November, 1969), 53-54.

[19] John Guy Fowlkes and George E. Watson, "A Report on State Financial Support and Local Educational Planning," University of Chicago, 1954 (mimeographed).

supported Allen's observation that there is no justification for the assertion that an increase in state support results in an increase in state control.

Bailey et al.,[20] in their study of school districts in the northeast section of the United States, found no relationship between the percentage of the local educational budget supplied by the state and the amount of state control.

Thus far in the review of literature, it has been established that education is a function of the state, and the state has the authority and responsibility for its support and finance. Further, the local boards of education, being instrumentalities of the state, have only those powers specifically designated by the state. Also, it has been established that the state or the state legislature, within constitutional limitations, has the right to centralize the tax structure to equalize educational opportunity for all children if it is deemed in the best interest of the state. The remaining question is, "What shall constitute equality of educational opportunity?"

It is Wise's[21] contention that before equality of education can be defined it is necessary to formulate a

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[20]Stephen K. Bailey, et al., Schoolmen and Politics; A Study of State Aid to Education in the Northeast (Syracuse, N.Y.: Syracuse University Press, 1963).

[21]Arthur E. Wise, Rich Schools Poor Schools (Chicago: The University of Chicago Press, 1968), p. 7.

legal basis for equality. The first consideration must be given to the equal-protection clause of the Fourteenth Amendment to the Constitution of the United States, which states:

> No State shall . . . deny to any person within its jurisdiction the equal protection of the laws.[22]

The second consideration must be given to the United States Supreme Court's specific interpretation of the equal-protection clause in Brown v. Board of Education, in which the opinion stated:

> The opportunity of an education, . . . where the state has undertaken to provide it, is a right which must be made available to all on equal terms.[23]

Wise developed a hypothetical case to be presented before the United States Supreme Court, in which he argued that the civil rights guaranteed to children under the Constitution are being violated if they are being deprived of an equal educational opportunity.

Precedents established by recent United States Supreme Court decisions in cases related to civil rights would indicate that if such a case as proposed by Wise were to come before the court, they would rule that states must provide equal educational opportunity to all children. If states were issued such a mandate, Wise believed:

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[22] Constitution of the United States, 14th Amendment.

[23] Brown v. Board of Education, 347 U.S. 294 (1955), 25-28, 190.

> . . . that the states would choose a basic standard of equal dollars per pupil in order to alleviate the agonizing burden of deciding whether students of lower ability or students of higher ability should receive higher expenditure on their education.[24]

There are those who contend that educational resources should be distributed to students according to ability, so that each student can reach his maximum potential. Anderson and Foster,[25] however, stated that this approach to the allocation of educational resources is based on efficiency and has no relationship to providing equality of educational opportunity. A child's "native ability," they contended, is as inherent as his race, and he has as little chance of changing one as the other. It follows that to allocate educational resources on the basis of a child's ability is as discriminatory as allocating those resources on any other inherent characteristic. Though education may favor students with higher ability, as many studies have shown, it should be recognized for what it is, an investment in the future of society and not equality of educational opportunity.

The concept of equal disbursement of educational resources on a per-pupil basis receives support from many writers. This support is not necessarily a result of

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[24]Wise, op. cit., p. 159.

[25]C. Arnold Anderson and Philip J. Foster, "Discrimination and Inequality in Education," Sociology of Education, XXXVIII (Fall, 1964), 5-6.

educational expenditure being the ideal criterion for evaluating educational opportunity, but rather that educational expenditure is a measurable factor. Keppel stated:

> If "equality of quality" in education is to have meaning, it necessarily applies to the poor as well as the rich, to the Negro as well as the white, to the bright as well as the average. It applies to every student without favor and without regard to the place in which he happens to live. There can be no inequity based on accident of geography.[26]

Benson made an almost identical observation:

> . . . [Equality of educational opportunity] . . . implies that any two children of the same abilities shall receive equivalent forms of assistance in developing those abilities, wherever they live in a given state and whatever their parental circumstances are.[27]

In a review of related studies, which will constitute the last section in this chapter, the investigator will view equality of educational opportunity in the terms expressed by Garvue, recognizing its limitation:

> A bench mark for a state to use in judging whether departures from equality of educational opportunity are sufficiently serious to warrant the state's taking action to correct them is the expenditure per pupil expressed in dollars. An assumption, then, is that those districts spending an equal amount per pupil are essentially offering equal educational opportunities.[28]

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[26]Francis Keppel, The Necessary Revolution in American Education (New York: Harper and Row, 1966), p. 75.

[27]Charles S. Benson, The Cheerful Prospect: A Statement on the Future of Public Education (Boston: Houghton Mifflin Co., 1965), p. 62.

[28]Robert J. Garvue, Modern Public School Finance (Toronto: Collier-MacMillan, Canada, Ltd., 1969), p. 131.

Equalization of Tax and Educational Opportunity in Michigan

Over the years, equality of educational opportunity and equity in tax structure have been major concerns in Michigan. The Report of the Tax Study Commission (1939)[29] is one of the earlier studies focusing on bringing equity to the Michigan tax structure. The Commission reported findings that were revolutionary in that day, but are incorporated in most current day proposals for tax reform.

The Commission reported:

> It is entirely possible, . . . that if the tax on real property were administered throughout . . . [the state] . . . with uniformity and precision at every step, much of the present dissatisfaction with the tax would be eliminated. Present inequities may yet threaten the very existence of the property tax.[30]

> . . . The state has large responsibilities which have been assumed only in small part. They involve not only the interest of the local taxpayers in due execution of tax laws, but information by the State as to alleged need for further centralization of tax administration, or extension of more State grants-in-aid, or perhaps State assumption of local functions.[31]

The Commission went on to state:

> This Commission is of the opinion that a personal income tax would contribute to a more equitable distribution of the tax burden. . . . While consideration of equity is of great importance, there are other circumstances which speak with equal eloquence against a personal income tax. The most significant of these

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[29] The Report of the Tax Study Commission was carried out for the State of Michigan, persuant to Act 195, Public Acts of 1931, under the direction of Lent D. Upson, Director and Chairman, 1939 (Detroit, 1939).

[30] Ibid., p. 4.

[31] Ibid., p. 10.

> is the . . . refusal . . . of the electorate to approve an amendment to the constitution.32

What the Commission called for was complete fiscal reform, whereby the state would provide tax equity by levying a uniform and equitable property tax and/or a uniform state income tax.

These progressive ideas were eclipsed, however, by the recommendations of the Michigan Tax Survey (1952).[33] Michigan, at that time facing a deficit state budget, viewed equity from a different prospect. Though the committee reported that a fair and equitable tax system was necessary, they contended that local units had a substantial reserve of unused taxing power and recommended that state allocations be held in check. The committee report reads:

> The State of Michigan has so widely separated the responsibility for taxation from the power to spend, as to be wasteful of much of the tax money collected from the people of the State.
> The diversion of State tax collection to local government has been carried so far that it often tends to destroy the local sense of responsibility at the same time that it has impaired the State government's capacity to pay its own way.
> It is none too soon to institute a moderate policy for recapturing for State use a reasonable

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[32] Ibid., pp. 42-43. The amendment to which the Commission referred was the 1934 amendment, which provided for an income tax levy at any rate set by the legislature, with all proceeds earmarked for public schools. The proposal would have abolished the property tax, except for debt service.

[33] The Michigan Tax Survey was submitted to Michigan Legislative Interim and Revenue Study Committee by Chairman Allen L. Gornick, Paul E. Curran, and Stark Hickey (Detroit: 1952).

> part of State tax collections which this State has diverted to local government far beyond its need . . . .[34]

The Michigan Tax Study,[35] completed in 1958, is considered a landmark in state financial studies. This study, prepared by a citizens' advisory committee appointed by a special legislative committee of the House of Representatives, recommended a blueprint for total tax reform. The proposals included the adoption of individual and corporate income taxes, and suggested relief in the area of the regressive property tax. As a result of this study Governors Williams, Swainson, and Romney recommended to their legislatures fiscal reform programs containing the basic recommendations of the study report. Though none of the Governors was successful in passing the legislation, state leadership now recognized that fiscal reform was essential.

Fiscal reform gained greater acceptance with the findings of Cline and Taylor, reported in Michigan Tax Reform (1966).[36] Their proposals included relief in the

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[34] Ibid., p. xv.

[35] The Michigan Tax Study was prepared under the direction of Harve E. Blaker, Director of the Research Staff; Rollo G. Cunlin, Chairman, Legislative Committee, House of Representatives; and Frank E. Seidman, Chairman, Citizens' Advisory Committee (Michigan: Speaker-Hines and Thomas Inc., 1959).

[36] Denzel C. Cline and Milton C. Taylor, Michigan Tax Reform (East Lansing: Institute for Community Development and Services, Michigan State University, 1966).

property tax through improvement of assessment practices, and the enactment of a state income tax.[37] This investigation also pointed out the need for reform in education due to the obvious inequities revealed by their research.[38] Education thus became the focal point, as educational expenditures represented the largest single expenditure in the state's budget. Many legislators were also apprehensive as to the impact the recently passed collective bargaining legislation would have on the state's school budget.

In 1966, the Michigan Board of Education requested that the Michigan State Legislature authorize a comprehensive study of school finance. There were two apparent reasons for this request: first, action toward educational and fiscal reforms was receiving greater acceptance by the legislators and the general public; and second, the State Aid Act of 1957, with its extensive amendments, was no longer a desirable vehicle for state aid legislation. The legislature approved the request with the passage of Act. No. 285, Public Acts of 1966.

The Michigan School Finance Study,[39] released in 1968, researched all aspects of educational finance from the kindergarten through grade twelve. In addition, the

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[37] Ibid., pp. 13-15.

[38] Ibid., p. 31.

[39] Thomas, op. cit.

study included the financing of pre-school programs, adult education, and vocation education.

The assumption underlying this study by Thomas et al. was that the quality of educational opportunities and services available to the children of the state should not depend on either the geographic location or the local property tax base of the district in which the child resides.

In evaluating the present state aid program, the analysis of data showed: (1) the program is inadequate, in that poorer districts cannot finance minimum programs even after levying above-average taxes; (2) the equalization formula is inadequate, since it does not equalize educational opportunity; (3) the present formula does not stimulate local effort; in fact, state aid serves as a substitute; and (4) the yearly amendments to the old 1957 act have made it a complex instrument, too complicated to allocate state funds effectively.[40]

The Michigan Association of School Administrators was critical of the report, because it gave alternate recommendations rather than a precise course of action. However, some of the alternatives presented in Thomas' study were to have an impact on the future course of educational finance in Michigan. For example, the report

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[40] Ibid., pp. 193-199.

recommended: (1) a state-wide income tax, or a combination of a state-wide income tax and property tax, could be levied by the state to support a "basic educational program" to insure greater equity in educational offerings; (2) the state should participate in the cost of providing school facilities; (3) consideration should be given to the centralization of finance and services on a state or regional basis; (4) the number of school districts should be drastically reduced, since the unit cost of educational programs is reduced as the result of the economics of scale; (5) financial assistance should be given to non-public schools to relieve the financial pressure of increased cost and inflation; and (6) the state should adopt a regional concept in the operation and administration of special education and vocational programs.[41]

The report of The Governor's Commission on Educational Reform,[42] released in October, 1969, made recommendations that emphasized the effect the Michigan School Finance Study had made on educational thinking. The committee recommended legislative action and a constitutional amendment to implement the following reform measures:

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[41] Ibid., pp. 322-347.

[42] The Governor's Commission on Educational Reform, Robert Jewell, Executive Director; James Phelps, Assistant Director; Governor William G. Milliken, Chairman (1969).

(1) The abolishment of the existing State Board of Education and the position of Superintendent of Public Instruction to be replaced by a Director of Education appointed by the Governor.
(2) The replacement of the present system of intermediate school districts by 10-15 regional districts responsible for budget review and service functions (e.g., transportation, special education, vocational and technical education, business services, etc.).
(3) The state should require a further consolidation of school districts.
(4) The variations in educational opportunity should be reduced by shifting the responsibility for providing educational revenue to the state.
(5) Constitutional amendment is required to provide for the levy of a statewide uniform property tax for school operational purposes.
(6) The development of a budgeting system based on a classroom unit to guarantee that all children will receive fair treatment in the allocation of financial resources.
(7) The initiation of a statewide assessment program to evaluate the needs of the children of the state.
(8) State support should be approved for salaries of certified lay teachers of nonsectarian subjects in the non-public schools.

The committee report stated that it concurred with Bryant, Chairman of the National Advisory Commission of Intergovernmental Relations, who said:

> State assumption of substantially all financing of local schools is the most practical way of coming to grips with local educational disparity while at the same time shielding the local property tax base from crippling pressures. States have the responsibility to eliminate significant variations in educational opportunity that stem from difference in local tax resources. Neither the financing nor the quality of education should be shaped by the accidents of local property tax geography.[43]

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[43] Ibid., p. 9.

The committee stated it further concurred with Thomas, Director of the Michigan School Finance Study, who said:

> The most effective way to guarantee that the educational opportunities of children in Michigan would be equitably distributed would be through a shift toward state responsibility in providing revenues for operating schools.[44]

Commissioner Allen cited Michigan as the state that is most likely to set the pace for major educational reform. Allen made this assumption on the basis that Governor Milliken believes so strongly in the necessity for an overhaul of the school financial structure that he is staking his political future on it. The Commissioner emphasized that:

> . . . [educational opportunity] . . . is the nub of the problem. As long as we have the gross disparities in opportunity that exist in virtually every state today, we have an inequitable and indefensible school system. We know there is a direct correlation between poor educational opportunity and low ability to pay for education. Therefore, whatever we do to develop a more effective, efficient structure for financing education must contribute toward solving this problem of equal educational opportunity--or we have not solved any problem at all.[45]

Teacher Militancy and Its Economic Implications

Within the traditionally complacent ranks of the teaching profession a growing dissatisfaction has become

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[44] Thomas, op. cit., p. 326.

[45] Miller, op. cit., p. 52.

evident, and it has been manifested in strikes, sanctions and other overt forms. This review will include studies and literature related to two aspects of teacher militancy: teacher salaries and teacher professionalism.

In the 40-year period between 1925 and 1965, teachers' salaries in urban centers increased at the rate of 3.2 per cent each year. During the same period, teacher salary increases moved faster than the consumer index and their purchasing power increased by more than 90 per cent.[46] The main source of teacher concern is not that their salaries have not increased nor kept pace with the cost of living, but that compensation for teachers has failed to keep pace with that for other occupational groups. Teachers are sensitive to the relative changes in compensation for other workers and the factors affecting those changes.

Between the years 1939 and 1965 teacher salaries tripled, while the salaries of factory production workers quadrupled. In eight broad occupational fields the average increase was 350 per cent and salary increases of all groups were proportionately higher than the increase in the average salary of teachers.[47]

In the post-war period, the proportional increases in teachers' salaries matched and in some cases exceeded

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[46]Arthur Sackley, "Long-Term Trends in Urban Teachers' Compensation," Monthly Labor Review, LXXXIX (November, 1966), 1223-1229.

[47]Ibid., pp. 1227-1228.

those of industrial workers, only to be left behind again by other occupational groups between 1963 and 1965. The Monthly Labor Review reported:

> The recent slackening of the upward thrust in salaries was accentuated by deterioration in the economic position of teachers relative to many other occupational groups. The advance in teachers' salaries from 1963 to 1965 was outstripped by gains in annual earnings . . . [in other occupations].
> . . . . . .
> Although teachers' work stoppages are still rare, an upsurge in such stoppages, usually centering on pay, accompanied the declining rate of advance in average [teachers'] salaries.[48]

Teachers are indignant, and the result has been displayed in increased militancy in the teaching ranks to improve their economic condition. Teachers' salaries started at a very low base and they had a long way to go. Only a generation ago teachers were paid less than industry workers, whose jobs required only an elementary education.[49]

A recent survey conducted by the National Education Association indicated that the disparity between salaries of teachers and those in other fields is widening. In 1965, the difference in salary for beginning classroom teachers and college graduates entering private industry was $1,867. By 1968 it had climbed to $2,430.[50]

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[48]Arthur Sackley, "Change in Teachers' Salaries, 1963 to 1965," Monthly Labor Review, LXXXVIII (December, 1965), 1460-1464.

[49]Paul Woodring, "On the Cause of Teacher Discontent," Saturday Review, L (October 21, 1967), 61-62.

[50]National Education Association, Economic Status of the Teaching Profession, 1967-68, Research Report 1968-R4 (Washington, D.C.: National Education Association, 1968).

Goergen and Keough[51] researched 40 teacher strikes that occurred in the decade 1955 to 1965. This investigation considered issues and demands of striking teachers and the ultimate outcomes and settlements. It was found by the researchers that all strikes studied could be grouped into six categories, based on the issues involved. Wage demands were the key issue in seven of the districts studied. Eleven of the strikes fell into a pattern of protesting the poor state tax structure to support education. In all but one of these strikes, salary was a primary issue. In eight of the strikes the pattern consisted of a combination of salary increases and collective bargaining. Salaries were not the only issue in these strikes; teachers also demanded that they be permitted to negotiate with the board as equals. Five strikes reported in the study were caused by unpaid back wages, an issue which occurred more frequently in earlier periods of history. Dismissal of personnel in what was considered an arbitrary manner was the cause of the other three strikes. It should be noted that in 75 per cent of the strikes, salaries were a major issue.

The finding of Goergen and Keough, that economic issues are at the root of most militant action, was

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[51]Joseph H. Goergen and John J. Keough, "Issues and Outcomes of Teachers' Strikes, 1955-1965" (unpublished Ph.D. and Ed.D. dissertation, St. Johns' University, Jamaica, New York, 1967).

substantiated by a study conducted by Pikulinski et al.[52] of the 118 cases that came before the Michigan Employment Relations Commission for mediation or fact finding following the passage of Public Act 379, covering a period through 1968. Responses were collected from all fact finders, mediators, employees' groups, and employers. The result of the study showed that fact finders found salaries and related economic issues of first importance in 88 per cent of the cases. The mediators reported that 92 per cent of the cases in which they were involved centered on economic issues, nearly all of which were salary. There was no significant difference in the responses from the parties who were at an impasse, with 84 per cent of the employees and 90 per cent of the employers listing economic issues, including salary, as being of primary importance. The report stated that:

> . . . clearly, the only significant factors cited were salary and general "money" issues. . . . We can logically expect cases going to fact-finding to be revolving around financial issues as the critical factor.[53]

Keeping the financial issue in mind, the researchers made some comparisons among districts where fact finding

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[52]Jerome R. Pikulinski, et al., "Fact-Finding in the Public Employment Sector within the State of Michigan, 1966-1968," A Report of a Joint Study; The Michigan Department of Labor, The Employment Relations Commission, and Michigan State University, 1969 (mimeographed).

[53]Ibid., p. 9.

occurred, against state-wide averages for the one year, 1967-68, covered by the study. The results of their findings are recorded in Table 1.

TABLE 2.1.--Comparison of selected financial factors in districts where fact finding occurred with state-wide averages.

	Average--All Districts in State	Average--Districts where fact-finding occurred
Local Sources per pupil	$271.74	$297.98
General Fund Expenditure per pupil	540.52	315.67
Instructional Salaries per pupil	447.76	266.34
Average Teacher's Salary	7,510.00	4,327.00

Source: The Michigan State Board of Education, Ranking of Michigan Public High School Districts by Selected Financial Data, 1967-68 (Lansing: Michigan Department of Education, 1968).

In a study conducted by Kite,[54] an attempt was made to identify decisive factors in potential strike situations. The study population for this investigation included every strike and averted strike in the United States between 1952

[54]Robert H. Kite, Sr., "A Study to Determine the Degree of Influence Selected Factors Had in Causing Teacher Strikes and to Determine the Degree to Which These Factors Were Present in School Districts in Which Teacher Strikes Were Averted" (unpublished Ph.D. dissertation, University of Mississippi, 1964).

and 1963. Strike votes, published threats, or verbal threats by acknowledged leadership were criteria for identification of potential strikes. Responses from 181 teachers indicated significant differences in organizational structure of local school districts which had strikes and those which averted them, but both groups agreed that economic issues had contributed to the strike or strike situation.

Kite's study further disclosed that two of the major causal factors of overt action were the low economic status of the teacher in the community and the failure of the public to understand the financial needs of teachers.

Knapp agreed with Kite's findings in an article which appeared in the Phi Delta Kappan, in which he supported the conclusion that the biggest problem in teaching is that:

> . . . [The male teacher's] . . . family . . . leads an "upper-lower class" existence in a world which assumes that all teachers represent middle-class values.[55]

Stinnett[56] also agreed that socio-economic factors are at the bottom of teacher-community strife. It was his assessment that teachers are paid better than ever before, and

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[55]Henry Knapp, "A Tribute to the 'Real' Fathers," Phi Delta Kappan, LXIL (June, 1968), 575-577.

[56]T. M. Stinnett, Turmoil in Teaching (New York: MacMillan Company, 1968), p. 34.

are still unable to keep pace with their neighbors in other occupational fields. "Teachers want to keep up with the Joneses," and "they demand the right to share equitably in the fruits of an affluent society." As Woodring[57] sums it up, "What do teachers want? The obvious answer to the . . . question is more money."

A recent study by Kilkenny[58] was directed at establishing teacher priorities in negotiations. The sample consisted of 822 elementary and secondary teachers in overseas dependent schools. Of this number, 514 teachers indicated they were members of a teachers' organization or union. The instrumentation of the study was a list containing 72 items to be rated on a six-point scale. Kilkenny's finding was that regardless of organizational affiliation, the economic aspects of negotiations are of high importance to teachers, in that items relating to salaries received the largest percentage of high priorities. It is interesting to note that the study also revealed that teachers place little priority on organizational strength.

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[57]Woodring, op. cit., p. 61.

[58]Roy O. Kilkenny, "Teacher Priorities for Professional Negotiations" (unpublished Ed.D. dissertation, Colorado State College, 1969).

In a regional research study conducted by Love,[59] an investigation was made to determine the extent to which teachers participate in decision making through the negotiation process. Data were collected by means of questionnaires sent to 170 school districts, extensive interviews with school board members, administrators, and teachers in six districts, as well as the analysis of a number of "master agreements." It was observed that collective negotiations were not only used by teachers as a means of improving salary and working conditions, but also as a means of securing meaningful involvement in decision making. The study pointed out that teachers in districts that engage in collective negotiations participated more in decision making than did those teachers who were employed in districts without collective negotiations. Love concluded that the greatest pressure from teachers for involvement in decision making was in the area of personnel policies. The items listed most often included: salary schedule, leave policies, class size, transfer policy, and teachers' supervisory duties.

Though Conner believed that the improvement of teacher welfare has been long overdue, he warned that he was concerned with the welfare of students. He contended

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[59]Thomas M. Love, "The Impact of Teacher Negotiations on School System Decision-Making" (unpublished Ph.D. dissertation, University of Wisconsin, 1968).

that higher salaries do not necessarily provide a better educational program:

> There has been an upward trend in the compensation of all educational personnel. . . . The decade of the sixties can be characterized by an upsurge of salaries, increased supplemental benefits, and improved conditions of work. Long overdue, these general improvements in economic remuneration can be attributed, . . . to the impact of collective negotiation in education.
>
> It may be tempting . . . to assume that staff members will work harder and produce more as extrinsic rewards are increased. . . . It is not necessarily so, however. These expected outcomes may not occur.[60]

Moscow, in discussing "employee interest" in conflict with "employer interest," emphasized:

> Maximum benefit for the teacher can only be obtained when leadership of his organization is devoted exclusively to his interest.[61]

Lasker[62] was concerned about the possible emphasis of teachers' benefits over student welfare. He questioned, in a situation where money is short, whether salaries would continue to be raised at the expense of adequate services (i.e., programs for the emotionally disturbed, curriculum

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[60]Forrest E. Conner, "Higher Pay-Greater Productivity: Don't Bet on It," Hot Line, Vol. II, No. 11 (November, 1969), 3.

[61]Michael H. Moskow, "Teacher Organizations: An Analysis of the Issues," Teachers College Record (February, 1965), 455.

[62]Morris E. Lasker, "The Influence of Teacher Collective Bargaining on the Quality of Education: Observations of a Board Negotiator," The Changing Employment Relationship in Public Schools (A Publication of the New York School of Industrial and Labor Relations, Cornell University, Ithaca, New York, 1968), p. 32.

development, integration programs, etc.). If, as Moskow stated, the teachers' welfare is the exclusive responsibility of teacher organizations, there is reason for concern as to who is responsible for improvement of education and the equalization of educational opportunity.

Benson pointed out that the ". . . effects of unionism on the distribution of education resources cannot be neatly isolated from . . . [other] . . . programs."

> . . . We must admit that we have no evidence that bargaining units will be predominantly successful in districts where expenditure increases are most urgently needed. Indeed, if just the opposite happens--that is, if teachers are especially effective in exercising bargaining rights in what are already high-expenditure places--disparities of provision could be worsened, not improved, by the spread of collective negotiation.[63]

Perry and Wildman[64] made a comprehensive study to determine the impact of collective negotiations on the schools, especially in the decision-making process. After making case studies on the negotiation process between teachers and boards in 22 communities, they concluded that in many of the districts studied the negotiation process involved compromise by the board to group power. Many

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[63]Charles S. Benson, "Economic Problems of Education Associated with Collective Negotiations," The Changing Employment Relationship in Public Schools (A Publication of the New York School of Industrial and Labor Relations, Cornell University, Ithaca, New York, 1968), pp. 1-2.

[64]Charles R. Perry and Wesley A. Wildman, "The Impact of Teacher Bargaining on the Schools," Collective Action by Public School Teachers, Vol. IV (Washington, D.C.: Government Printing Office, Office of Education, U.S. Department of Health, Education, and Welfare, 1968).

outside observers questioned whether the politically and economically motivated short-run decisions would promote quality education in the long run. Teacher economic demands had placed stress on the local economic resources. It was noted that additional revenues coming into school districts usually went to support increases in teacher salaries. There was also evidence that resources were being shifted within the local school budget to meet salary demands.

The danger cited in the study by Perry and Wildman was also illustrated in a recent study by Steele.[65] The purpose of the study was to determine if collective bargaining by Michigan teachers has contributed to educational improvement in Michigan schools. From data acquired from 30 instructional provision controls in Michigan "master agreements" in 1966-67 to 1967-68, it was found that there were more instructional items negotiated in 1967-68 than in the previous year. However, the study also showed that the instructional supply budgets for all districts, large and small, MFT or MEA, rich or poor, declined significantly the second year of collective bargaining.

While the major concern of teachers in collective negotiations has been directed toward salary improvement

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[65]Marilyn H. Steele, "Has Bargaining Contributed to Instructional Improvement in Michigan Schools" (unpublished Ph.D. dissertation, Michigan State University, 1969).

and working conditions, teachers, whenever possible, have included a wide range of other items. If school officials are to deal effectively with negotiations, they must be cognizant of the fact that teachers expect to have a greater voice in shaping the decisions that affect them.[66]

Dr. Bernard E. Donovan, Superintendent of Schools in New York City, speaking at a symposium on "Collective Bargaining vs. Professional Negotiations," said:

> Negotiation is here to stay. I think in the long run that if the voice of teachers is heard--if the voice of the teacher is admitted to the councils of administration--it will be good for the school system . . . .
>
> It is with difficulty . . . (for school boards and superintendents) . . . to yield a little authority . . . .
>
> . . . As the teachers' organizations mature--and maybe as we mature with them--education as we argue it will be more than salaries and working conditions.[67]

James had this to say to the White House Conference on Education:

> The teaching profession is now engaged in a nation-wide struggle to promote its interests directly with boards of education, . . . My own conclusion is that it is . . . a struggle by professionals to achieve the right, rather generally accepted in western civilization, to be governed by written

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[66]Charles M. Rehmus, "Public Management and Collective Negotiations," in Collective Negotiations and Educational Administration, ed. by Roy B. Allen and John Schmid (Columbus, Ohio: The University Council for Educational Administration, 1966), pp. 61-72.

[67]Bernard E. Donovan, "Speaking for Management," at a symposium on "Collective Bargaining vs. Professional Negotiations," School Management , Vol. VII (November, 1965), 71.

> rules developed with their involvement and consent and not by the caprices of men.[68]

Corwin's study of the professional characteristics of teachers in seven high schools in Michigan and Ohio indicated that teachers are attempting to change their traditional image of "public servant" to an image with "professional" status. Two hundred fifty-six teachers were evaluated on a "professional and employee role conception scale" to determine how they would respond to organizational characteristics (e.g., standardization, centralization, specialization). Corwin concluded that professionalism must be a militant process:

> Professionalization . . . is a drive for status. It represents the efforts of some members of a vocation to control their work. In order to monopolize a type of work, a vocation in the process of professionalization will seek to wrest power from those groups which traditionally have controlled the vocation. Professionalization in this sense apparently must be a militant process.
>
> . . . The weight of evidence supports the thesis that professionalism is a militant process. While it can not be said that militant teachers in the sample are necessarily professionally-oriented, the more professional teachers are militant.[69]

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[68] H. Thomas James, "Can Urban Schools be Managed?" Consultants' Papers, The White House Conference on Education, July 20-21, 1965, p. 156.

[69] Ronald G. Corwin, "Militant Professionalism, Initiative and Compliance in Public Education," Sociology of Education, XXXVIII (Summer, 1965), 313-314.

Related Research

In a review of related studies, this investigator will view equality of educational opportunity in the terms expressed by Keppel,[70] Benson,[71] and Garvue,[72] equating equality to expenditure, and recognizing its limitations.

The relationship between school district expenditures and educational opportunity has been researched for more than half a century. In each of these studies wealth (as measured by the valuation of property and/or expenditure per student) has been related to a select number of educational variables, in most cases including achievement.

Johns and Morphet, after reviewing numerous studies, noted several factors that were related to educational opportunity. Though leadership, class size, and teacher performance were seen to have an impact on the quality of the educational program, they concluded that the level of educational expenditure was the most important variable. Johns and Morphet emphasized:

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[70]Keppel, op. cit., p. 75.

[71]Benson, The Cheerful Prospect, p. 62.

[72]Garvue, op. cit., p. 131.

> The quality of education provided in the school system where expenditures are low is far less satisfactory than that in systems where expenditures are above the national average. Low expenditures tend to mean inadequate leadership, large classes, poor teachers and teaching, and many other features that contribute to low quality.
>
> Even in the higher expenditure level school systems, there seems to be a strong relationship between expenditures and quality of education. The districts which spend more appear generally to contribute more per dollar to individuals and to our national life than those who spend less.[73]

It is obvious from the above statement the degree of importance Johns and Morphet placed on educational expenditures.

Just as there is disagreement in defining "quality," not all authorities agree that educational expenditure is all important in measuring educational quality. Burkhead, after reviewing several studies, made the following statement:

> It would appear that perhaps one-third of the factors affecting the quality of the schools have some relation to expenditure levels; but if all schools in the United States had the same expenditure level, there would still be enormous differences in the quality of education. In fact, there are some reasons to believe that quality differences would be reduced very little even if expenditure levels were equated. We are a very long way from a complete understanding of the causal factors that explain variations in the quality of education.[74]

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[73]Roe L. Johns and E. L. Morphet, Financing the Public Schools (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1960), p. 15.

[74]Jesse Burkhead, Public School Finance--Economics and Politics (Syracuse, N.Y.: Syracuse University Press, 1964), p. 87.

Factors affecting the quality of the schools, other than expenditures, to which Burkhead alluded were: good teachers, administration and supervision, community interest, and the socio-economic level of parents.

Though it might be reasonable to assume that increased expenditures may have little influence on factors such as community interest and the socio-economic level of parents, it would seem that increased expenditures would attract and hold competent staff, which in turn would improve the educational program in the long run. It would also appear that though variance would still exist if expenditure levels were raised in all districts, the variance would be at an over-all higher level.

Ayers, in 1920, made one of the early contributions equating educational returns for money spent. Using an index made up of five items of a financial nature and five other items which were non-financial in character, he computed a correlation coefficient of .78. Ayers commented he found "convincing evidence that there is a real relationship between expenditure and results in education."[75]

In 1926, Norton used five objective measures of educational efficiency, with the major focus of interest

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[75]Leonard P. Ayers, An Index Number for State School Systems (New York: Russell Sage Foundation, 1920), p. 23, as cited by Ross, op. cit., p. 364.

directed toward the holding power of schools. Though the study was not intended to measure the relationship between expenditure and quality, the findings showed that as the per capita expenditure increased in the state, so did the measure of educational efficiency.[76]

Ross reviewed two studies by Mort in the states of New Jersey and Maine, in 1933 and 1934, respectively.[77] In the New Jersey school study Mort classified the school district into three expenditure levels, to compare the efficiency and effectiveness at each level. As expenditure level increased, significant differences were found in the quantity and quality of administrative and supervisory services, service to atypical children, school buildings, instructional staff, classroom procedures, course offerings, and home-school contacts. The high expenditure schools surpassed the schools in the two lower expenditure classifications in all factors studied.

Mort used the same system of classifying schools in his study of the financing of the public schools in Maine. The report of the research indicated that improvement

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[76]John K. Norton, The Ability of States to Support Education (Washington, D.C.: The National Education Association, 1926), as cited in Ross, op. cit., p. 364.

[77]Donald H. Ross, Administration for Adaptability (New York: Metropolitan School Study Council, Institute of Administrative Research, Teachers College, Columbia University, 1958), p. 365.

was noted in all of the educational factors as they were measured at the lowest, the middle, and the highest expenditure levels. As he went up the scale, Mort reported: instruction in the traditional subjects improved, educational opportunities broadened, and there was greater individualization where children could discover and develop their abilities.

Another early study relating expenditure levels to educational efficiency was conducted by Ferrell in 1936.[78] Two groups of schools in Kentucky were used in the study and the findings were conclusive in both. It was found that when educational efficiency was measured in terms of attracting and holding power, training and experience of teachers, pupil-teacher ratio, and length of the school term, the correlation between educational efficiency and expenditure in one group of schools was .92, and .77 in the other.

Wealthy districts have been the focus of several informative studies. In 1942, 28 school districts in the suburban districts in the New York metropolitan area conducted a study of their schools. All the schools that took part in the study were well financed. Not long after the study began, the districts became aware that the Mort-Cornell Guide for Self-Appraisal, the evaluative

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[78] D. T. Ferrell, Relation Between Current Expenditure and Certain Measures of Educational Efficiency in Kentucky County and Graded School Systems (Nashville: George Peabody College for Teachers, 1936), as cited in Ross, op. cit., p. 365.

instrument used in the study, was inadequate to evaluate this select group of schools. Researchers working in the field were therefore instructed to take notes as to practices they observed during their evaluative process. Analysis of the more than 900 notes that were taken revealed that there was a pattern of school-community interaction, high quality personnel, democratic operation, dynamic administration, and a concern for the importance of individuals. The final report of this study of better supported schools emphasized the finding that increased expenditures buy a better education.[79]

In a study by Vincent[80] (1945) of high expenditures in the state of New York, a significant correlation was found between expenditures and Vincent's index of educational factors. The factors were derived from the earlier New York study and were eventually to become the instrument known as The Growing Edge. This particular study consisted of three samples, which included: (1) 52 districts which received personal interviews by field workers, (2) 71 districts that were interviewed by questionnaire, and (3) 216 districts that were analyzed by a review of New York State Department records. The findings of the study indicated there was a 73 per cent

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[79]William S. Vincent, Emerging Patterns of Public School Practices (New York: Bureau of Publications, Teachers College, Columbia University, 1945), pp. 8-9.

[80]Ibid., p. 56.

correlation between expenditure level and the index score in those districts interviewed, a 99 per cent correlation in districts questioned by mail, and a 88 per cent correlation in districts where the data were secured from the New York State Department records.

Ross reviewed a rather unique study conducted by Wollatt (1949), in which 33 extremely high expenditure schools in the New York and New Jersey suburbs were surveyed.[81] Wollatt was exploring the possibility that there may be a point of diminishing returns in educational expenditures, or a point at which more money does not produce measurable improvement in education. Using only the best supported schools in the New York metropolitan area, he could find "no such point for school quality as a whole." Wollatt contended that such a point must exist, but no schools in his study had approached that level of expenditure.

Horton's study of high school districts in Indiana analyzed the relationship between the North Central Association of Colleges and Secondary Schools' evaluations, the school's size, and the educational expenditures.[82] Horton found that school size had a significant effect

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[81] Ross, op. cit., p. 370.

[82] Daniel B. Horton, Jr., "An Analysis of the Relationship of Per Pupil Expenditure Levels and School Size with North Central Evaluations" (unpublished Ed.D. dissertation, Indiana University, 1968).

upon the evaluative criteria of school programs, as did the expenditure level. His data indicated the highest relationship was between expenditure level and the qualifications of school staff and administration. He concluded that the educational program could be improved by increasing the size of the school, increasing the expenditure level, or a combination of both.

A study was conducted by Benson et al., to correlate the educational achievement of students enrolled in 249 of California's unified elementary school districts to 34 school and non-school variables.[83] The study's findings were that the non-school variables, including home environment, educational background of parents, and socio-economic status of the family, were the strongest indicators of school achievement. Benson pointed out, however, that there is a significant relationship between the educational opportunity provided in the school district and the performance of pupils. The group was "led to the conclusion that caliber of teacher is the single most important school related factor."

Coleman's study, Equality of Educational Opportunity, also reported that non-school factors had the strongest

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[83]Charles S. Benson, State and Local Fiscal Relationships in Public Education in California (Sacramento: Senate of the State of California, 1965), pp. 41-42.

correlation to achievement.[84] He concluded that the school brings little to bear on the child's achievement that is independent of his home, neighborhood, and peer environment. Children are faced with inequities resulting from their environment, that are carried through their school years into adult life. The only school factor Coleman noted as influencing achievement was the characteristics of the teacher.[85]

Coleman's study has been criticized on the basis that non-school variables were emphasized, and because of the statistical methodology of his design. When Mayeske et al. used regression analysis on Coleman's data, it was discovered that when socio-economic factors were held constant, there was an overlap in student body and school-related variables.[86] More detailed analysis demonstrated that for given achievement, the student body variables had a high correlation to school personnel and personnel expenditures. Mayeske suggested that these two variables may be the most important factors in promoting educational achievement.

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[84] James S. Coleman, et al., Equality of Educational Opportunity (Washington, D.C.: U.S. Government Printing Office, 1966).

[85] Ibid., p. 325.

[86] George W. Mayeske, et al., "Correlational and Regression Analyses of Differences Between the Achievement Levels of Ninth Grade Schools from the Educational Opportunities Survey" (Washington, D.C.: National Center for Educational Statistics, 1968), pp. 54-55 (mimeographed).

In the spring of 1960, the United States Office of Education funded a massive research undertaking which has been labeled PROJECT TALENT.[87] The investigation was carried out through the research facilities of the University of Pittsburgh. More than 400,000 students from a representative sample of 1,353 of the nation's high schools were administered a battery of comprehensive tests, and exhaustive data were gathered related to the schools the participants attended. One of the purposes of the study was to determine what relationships existed between selected background variables and school outcomes. Following the analysis of data from several subsamples of high schools, Flanagan et al., wrote:

> The Project Talent data indicate that four of the most important treatment factors closely and uniquely associated with school outcomes such as achievement and going to college and staying in school are:
> a. Teacher salaries
> b. Teacher experience
> c. Number of books in the school library
> d. Per-pupil expenditure.
>
> These four factors remain important even after region, rural-urban status, and such socio-economic factors as median family income and quality of housing are held constant. It is possible that teacher salary schedule may be a good general indirect index of teacher quality. A school with a salary schedule above average for its

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[87] John C. Flanagan, et al., A Survey and Follow-up Study of Educational Plans and Decisions in Relation to Aptitude Patterns: Studies of the American High School (Pittsburgh: University of Pittsburgh, 1962).

> teacher recruiting area can have better teachers and hold them easier than a school with lower salaries.[88]

Further analysis of the study's findings reveals the background factors demonstrating the strongest correlation to school outcomes are the starting salaries of both men and women teachers, and average per-pupil expenditure.[89] It is interesting to this researcher that all factors found to be related to school outcomes are directly related to school district expenditures.

Harrison and McLoone conducted a study for the United States Office of Education.[90] The purpose of the study was to survey the inequities of school expenditures throughout the United States. The findings of this study are of particular interest to this researcher, in that a portion of the data relates specifically to the inequalities of educational opportunity observed in Michigan. The data indicate that the ratio of high to low expenditure districts in this state (between the 98th and 2nd percentile) is 3.5. That is, the highest expenditure district in the state is spending three and one-half times as much to educate a student as is the lowest expenditure district. In 1960, when these data were

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[88] Ibid., pp. 10-11.

[89] Ibid.

[90] Forrest W. Harrison and Eugene P. McLoone, Profiles in School Support (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, 1965).

compiled, only one state in the United States, Missouri, had a wider variance in educational expenditures.[91]

Financial data released by the Michigan Department of Education for the 1968-69 school year support Harrison and McLoone's findings.[92] The lowest per-pupil expenditure reported by a high school district during the 1968-69 school year was $255.37, and the highest was $1,178.79. Though these figures are not necessarily between the 98th and 2nd percentile, they represent a ratio of 4.5, which shows a tremendous variance in educational expenditure.

Thomas' study, School Finance and Educational Opportunity in Michigan, referred to previously, used the school and the school district as the primary unit of analysis.[93] Schools were evaluated on the basis of the programs and the services they provided; school districts were examined because it is at that level that resources are obtained and dispersed. In his report, Thomas compared the 10 Michigan districts ranked highest in state equalized valuation per student with the 10 districts ranked lowest in state equalized valuation per student. An analysis of the data indicated that:

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[91] Ibid., pp. 70-71, Tables 6 and 7.

[92] State Board of Education, Lansing, Michigan (1968-69), op. cit.

[93] Thomas, op. cit., p. 19.

> It is easy to document financial inequalities among school districts in Michigan. In general, districts with a relatively high state equalized value per pupil tend to spend more money on the education of each child and to have a lower tax rate.[94]

The data used in Thomas' study were for the school year 1965-66. This researcher replicated the study, using current data for the school year 1968-69, to test, and either support or reject his conclusion. An analysis of the current data parallels Thomas' findings and supports his conclusion. There is no significant difference in the distribution of tax burden or the allocation of educational resources between the data used for the 1965-66 school year and those for the 1968-69 school year (see Tables 2.2 and 2.3).

Summary

This review of literature related to the financial responsibility for public education, and studies conducted in Michigan focusing on equalizing the tax burden and educational opportunity, places the current study in perspective. Literature and research were searched to justify the inclusion of factors related to teachers' salary expenditures as part of this study. Finally, a survey of related studies confirms the validity of using school district wealth and/or expenditures in the analysis of equality of educational opportunity.

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[94] Ibid., p. 19.

TABLE 2.2.--The ten highest and lowest school districts in Michigan, ranked according to state equalized valuation per resident pupil 1965-66.

State Equalized Valuation Per Resident Member	Rank	County	District	Total Per Pupil General Fund Exp.	Millage Rate Total Operation	Debt Retirement Millage
53,156	1	Wayne	River Rouge	741.16	11.00	--
48,391	2	Wayne	Riverview Comm.	835.54	12.90	1.75
41,909	3	Iron	Mastodon	869.89	16.67	--
37,946	4	Huron	Caseville	605.41	11.50	3.99
37,569	5	Alger	Burt Township	764.70	13.86	--
36,686	6	Ontonagon	White Pine S.D.	813.49	17.47	--
35,379	7	Leelanau	Leland Pub. Sch.	653.56	12.00	3.30
34,137	8	Saginaw	Frankenmuth	562.52	9.53	4.00
33,295	9	St. Clair	East China	527.31	11.00	2.40
32,889	10	Wayne	Ecorse	683.85	16.40	--
5,073	524	Clinton	Bath Comm. Sch.	419.13	14.35	8.00
5,015	525	Saginaw	Birch Run	352.78	9.53	8.00
4,946	526	Houghton	Adams Twnshp.	489.90	17.15	4.00
4,829	527	Muskegon	Holton Pub. Sch.	379.27	15.53	7.50
4,810	528	Wayne	Inkster	475.63	24.90	7.00
4,722	529	Alger	Rock River Twn.	466.37	15.06	9.00
4,685	530	Ontonagon	Trout Creek	541.43	23.47	--
3,829	531	St. Clair	Memphis Comm.	497.50	*	*
1,395	532	Chippewa	Rudyard Twnshp.	473.94	8.00	9.00
1,319	533	Marquette	Forsyth	400.07	12.20	3.67

Average Expenditures		Average Millage Rate (Total Operation)	
Ten Highest SEV/REM Districts	$705.75	Ten Highest SEV/REM Districts	$13.23
Ten Lowest SEV/REM Districts	449.60	Ten Lowest SEV/REM Districts	15.58

*Not Available

Source: The Michigan State Board of Education, Ranking of Michigan Public High School Districts by Selected Financial Data, 1967-68 (Lansing: Michigan Department of Education, 1968).

Approval to reprint obtained from the Office of Public Information: Michigan Department of Education, Lansing, Michigan.

TABLE 2.3.--The ten highest and lowest school districts in Michigan ranked according to state equalized valuation per resident pupil 1968-69.

State Equalized Valuation Per Resident Member	Rank	County	District	Total Per Pupil General Fund Exp.	Millage Rate Total Operation	Debt Retirement Millage
57,284	1	Wayne	River Rouge	878.39	14.90	1.71
52,034	2	Leelanau	Leland	795.86	14.00	--
48,039	3	Bay	Essexville Hampton	683.55	13.00	2.75
44,673	4	Huron	Caseville Pub. Sch.	870.68	15.25	1.24
40,838	5	Wayne	Riverview	888.54	18.90	3.00
40,107	6	Wayne	Ecorse	946.40	18.40	--
38,438	7	Wayne	Dearborn City	1079.63	22.90	.75
36,091	8	St. Clair	East China	684.91	12.50	1.40
35,946	9	Otsego	Johanneburg-Central	842.67	15.30	5.00
35,009	10	Roscommon	Gerrish Higgins	684.28	12.39	--
5,988	516	Newago	Hesperia	624.51	18.00	9.00
5,673	517	Delta	Bark River Harris	612.65	12.86	8.20
5,433	518	Muskegon	Holton P/S	542.12	15.35	7.50
5,375	519	Alger	Rock River Township	643.15	15.86	8.00
5,137	520	Muskegon	Fruit Port Comm.	533.58	22.35	7.00
4,912	521	Alger	Mathias Township	611.80	26.86	--
4,751	522	Houghton	Hancock City	650.48	21.05	--
3,879	523	Muskegon	Oakridge	562.73	20.00	10.00
2,442	524	Marquette	Forsyth	696.13	10.00	1.90
1,993	525	Chippewa	Rudyard Township	705.70	10.00	7.77

	Average Expenditures		Average Millage Rate (Total Operation)
Ten Highest SEV/REM Districts	$835.49	Ten Highest SEV/REM Districts	$15.75
Ten Lowest SEV/REM Districts	618.28	Ten Lowest Sev/REM Districts	17.23

Source: The Michigan State Board of Education, Ranking of Michigan Public High School Districts by Selected Financial Data, 1967-68 (Lansing, Michigan: Michigan Department of Education, 1968).

CHAPTER III

PROCEDURE AND METHODOLOGY

Introduction

The major objective of this study was to analyze selected financial characteristics of Michigan school districts on shortened sessions, and to compare these financial characteristics with their counterparts in districts which have maintained full-day sessions. It was anticipated that the analysis of data would reveal differences between districts in state equalized valuation per student, average teacher's salary, total general fund expenditure per student, instructional salary expenditure, operational millage, debt retirement millage, and total millage for school purposes. It was also expected that a relationship would exist between the outcome of elections to raise operational millage or elections to bond the district to construct facilities, and the local board's decision to have students attend shortened sessions. Differences and patterns were tested for, statistically.

This chapter will discuss the sources of data used in the study, the selection of the sample of school districts to be studied, the procedure of selecting control districts, the instrumentation, and the statement of the statistical

hypotheses to be tested. The final section of this chapter will explain the statistical treatment of the data, and the specific statistical technique used to test each of the research hypotheses.

Sources of Data

The initial step in the design of this study was to identify those districts in Michigan which had students on shortened sessions during the three years, 1967 through 1970. The Michigan Department of Education furnished the required data for the school years 1967 through 1969, but only a partial list of schools known to be on shortened sessions was reported for the 1969-1970 school year. Through the assistance of the Wayne County "ASSIST" Center, and the responses to telephone calls to intermediate school district offices covering over 50 per cent of the school population of Michigan, a list of districts on shortened sessions was compiled.

Questionnaires were mailed to all districts in the test sample to secure data concerning the influence of election results on board of education decisions to initiate shortened sessions.

Selected financial data on wealth, expenditures, salaries, and millage rates used in this study were obtained from the following sources: Michigan Department of Education: Ranking of Public Schools by Selected Financial Data, 1967-68, 1968-69; and Michigan Association of School Administrators: Selected Administrative Information and Millage Levies

Relative to Michigan Public School Districts, February, 1970.

Additional data were required to carry out the phase of analysis comparing the financial characteristics of the sample being studied with state-wide means. These data were acquired from the Michigan Department of Education: Analysis of Michigan Public School Revenues and Expenditures, 1967-68, 1968-69.

Test Sample

The Michigan Department of Education was requested to submit a data printout of all school districts in Michigan which reported in their annual fall statistical reports that they had students on less than full-day sessions during the 1967-68, and 1968-69 school years. It was also requested that the department furnish a list of school districts known to be on shortened sessions during the 1969-70 school year.

The Michigan Department of Education furnished the data requested for the 1967-68 and 1968-69 school years, but was unable to provide a complete list of districts for the 1969-70 school year. Using the partial list furnished by the Department of Education, the researcher requested the assistance of the Wayne County "ASSIST" Center in identifying districts not included. Through the cooperation of the "ASSIST" Center and several intermediate school district offices, a list of districts on shortened sessions was compiled. The resulting list for the 1969-70 school year

comprised a larger number of districts on shortened sessions than were officially reported to the Michigan Department of Education in either of the two previous years.

A cursory review of the data indicated that there were more than 150 school districts in Michigan that did not provide full-day programs to all students at one time or another over the three-year period covered by this study. It was also observed that many districts had reported only one or two students on less than full-day programs.

Recognizing that school districts often design programs to meet the individual needs of atypical children (e.g., physically handicapped, mentally handicapped, and emotionally disturbed), it was evident there was a need to delimit the sample.

The focus of this study is to compare the financial characteristics of school districts on shortened sessions with the financial characteristics of districts that have maintained full-day programs; therefore, the following limiting criteria were set:

(1) Districts in the sample must be Michigan school districts which offered kindergarten through twelfth grade programs during the 1967-68, 1968-69, and 1969-70 school years.

(2) The number of students on shortened sessions must constitute seven per cent of the total student membership. This would indicate that at least one

full grade or a portion of several grades was being subjected to a shortened school day.

From the universe including all the kindergarten through twelfth grade districts in Michigan, 20 school districts met the sample criteria during the 1967-68 school year. Seventeen school districts in the school year 1968-69 met the sample criteria, of which five were repeaters, having had students on a shortened school program the previous year. The results of the search for districts on shortened sessions during the 1969-70 school year produced 22 school districts that met the required criteria, 14 of which had not reported students on shortened sessions either of the two preceding years.

The statistical treatment employed in this study requires the independence of variables. Statistical analysis was therefore applied to each year independently to remove the possibility of dependence caused by school districts that were repeaters.

Because school district audits were not completed for the 1969-70 school year, the sample for that year was not included in testing hypotheses related to expenditures and salaries. Data were available, however, to use the 1969-70 sample in tests related to differences in millage rates, and state equalized valuation per student. The 1969-70 sample was also included in the mailing of questionnaires which provided the data to test hypotheses related to election patterns in districts which initiated shortened sessions.

Control Sample

After the test sample of districts on shortened sessions was selected for each of the three years covered by this study, any of the remaining 500-plus districts theoretically would be equally acceptable as control districts with which to make comparisions. However, in an empirical study in which specific characteristics are being compared, in this particular case financial variables, the validity of the study is enhanced if other variables that might influence the findings are controlled.

Though many empirical studies illustrate the relationship which exists between financial characteristics and educational opportunity, other studies demonstrate the relationship between educational opportunity and other characteristics (e.g., school district size, geographic location, and socio-economic status of parents). The design of this study attempted to limit the influence of those factors related to school district size and geographic location through the selection of the control schools on the basis of matched pairs. No specific technique was employed to moderate the effect of socio-economic status of parents, though this may have been accomplished by the random sampling technique employed in the selection of the matched pairs.

The matching of the control districts and the test sample districts to compensate for the variable of geographic location was accomplished by the following method. A master

map was constructed, outlining all of the school districts in Michigan. All school districts that were reported to have students on shortened sessions were located. A list was made of all districts that were contiguous (shared a common boundary), and were maintaining their students on full-day sessions. Some of the school districts in the test sample were matched with as many as eight districts. At this point the number of possible school districts corresponding to each of the school districts in the test sample was reduced to no more than four, by the use of random sample tables.

The school districts in the control group thus far were controlled as to geographic location. The final step in the selection of the control school district to be matched with the test sample district was accomplished by selecting that district on the list whose school enrollment most nearly approximated the school enrollment in the test sample district.

When selection of the control sample was completed, there existed three sets of matched pairs, one for each of the years 1967-68, 1968-69, and 1969-70. Further, in each of these pairs the variables of school size and geographic location were controlled (see Appendix A).

Instrumentation

A questionnaire was developed to secure data not available from any source other than school districts that were actually on shortened sessions. The questions prepared were

of a nonstatistical nature, and it was expected that they could be answered by most school superintendents without the necessity of referring to filed reports or records.

Three questionnaires were prepared, one for each of the three years covered by the study. Information requested pertained to elections held in these districts to raise operational millage and bonding for the construction of facilities. Data required included the outcome of the election and the influence of the election outcome on the board of education's decision to initiate shortened sessions.

A few specific items of data were required which enabled the respondent to complete the questionnaire in a minimum of time. The original draft of the questionnaire was reviewed by staff members from the Michigan State University College of Education and their recommended revisions were included in the instrument.

Appointments were made with three school superintendents who were in the test sample of school districts on shortened sessions. These superintendents were asked to fill in the questionnaire, and to make comments as to any recommended changes that would improve the instrument. No recommendations for change were made. The maximum time required by any of the superintendents to fill out the questionnaire was 15 minutes, and it was noted that no reference was made to reports or records. With minor modification in the introduction, the instrument was considered ready for research use (see Appendix B).

Appropriate questionnaires were mailed to each of the 46 school districts in the test sample. Districts that were repeaters received questionnaires for each of the years they were reported to have had students on shortened sessions. One week from the date the questionnaires were mailed, phone calls were made to those districts which had not yet replied to the questionnaire, requesting their immediate response. Personal visitations were requested by two school districts to discuss problems unique to their districts in filling out the questionnaire. The visitations were made and the problems were resolved.

A cut-off date was set at the end of three weeks, with an 85 per cent response.

Statistical Hypotheses

The following terms are defined to clarify the statements of the statistical hypotheses:

Average teacher's salary. The full-time and prorated portions of regular teachers' salaries for all teaching services provided to pupils. The average salary is computed by dividing the total salaries of regular teachers in elementary, secondary and special education by the related number of teaching positions.

Instruction salaries. The salaries of all employees involved in instructional activities.

General fund. The fund used to record all operating revenues and expenditures of the district pertaining to

education except the purchase of sites, construction of buildings, or the retirement of bonded debt.

Debt retirement millage rate. The tax rate in mills applied to the state equalized valuation of the district to produce revenue to pay the principal and interest on bonds.

Operational millage rate. The tax rate in mills applied to the state equalized valuation of the district to produce revenue for the operation of the schools. It is made up of two parts, a millage rate allocated by the county, and a millage rate voted by the local school district.

State equalized valuation per student. The ratio arrived at by dividing the taxable value of all real estate in the district, (assessed value as finally equalized by the State Tax Commission), by the number of pupils officially enrolled in the school district.

The following are the statistical forms of the hypotheses that were presented in Chapter I. They are stated in both the null and alternate form.

Hypothesis I

There will be no difference between the average teacher's salary in school districts on shortened sessions and the average teacher's salary in school districts not on shortened sessions when school district size and geographic location are controlled.

H_{1a}:--The average teacher's salary in school districts on shortened sessions is less than the average teacher's salary in school districts not on shortened sessions when school district size and geographic location are controlled.

Hypothesis II

There will be no difference between the average instruction salary expenditure per student in school districts on shortened sessions and the average instruction salary expenditure per student in school districts not on shortened sessions when school district size and geographic location are controlled.

H_{2a}:--The average instruction salary expenditure per student in school districts on shortened sessions is less than the average instruction salary expenditure per student in school districts not on shortened sessions when school district size and geographic location are controlled.

Hypothesis III

There will be no difference between the average total general fund expenditure per student in school districts on shortened sessions and the average total general fund expenditure per student in school districts not on shortened sessions when school district size and geographic location are controlled.

H_{3a}:--The average total general fund expenditure per student in school districts on shortened sessions is less than the average total general fund expenditure per student in school districts not on shortened sessions when school district size and geographic location are controlled.

Hypothesis IV

There will be no difference between the average total millage rate for all school purposes in school districts on shortened sessions and the average total millage rate for all school purposes in school districts not on

shortened sessions when school district size and geographic location are controlled.

H_{4a}:--The average total millage rate for all school purposes in school districts on shortened sessions is greater than the average total millage rate for all school purposes in school districts not on shortened sessions when school district size and geographic location are controlled.

Hypothesis V

There will be no difference between the average operational millage rate in school districts on shortened sessions and the average operational millage rate in school districts not on shortened sessions when school district size and geographic location are controlled.

H_{5a}:--The average operational millage rate in school districts on shortened sessions is greater than the average operational millage rate in school districts not on shortened sessions when school district size and geographic location are controlled.

Hypothesis VI

There will be no difference between the average debt retirement millage rate in school districts on shortened sessions and the average debt retirement millage rate in school districts not on shortened sessions when school district size and geographic location are controlled.

H_{6a}:--The average debt retirement millage rate in school districts on shortened sessions is greater than the average debt retirement millage rate in school districts not on shortened sessions when school district size and geographic location are controlled.

Hypothesis VII

There will be no difference between the average state equalized valuation per student in school districts on shortened sessions and the average state equalized valuation per student in school districts not on shortened sessions when school district size and geographic location are controlled.

H_{7a}:--The average state equalized valuation per student in school districts on shortened sessions is less than the average state equalized valuation per student in school districts not on shortened sessions when school district size and geographic location are controlled.

Hypothesis VIII

There will be no difference between the average teacher's salary in school districts on shortened sessions and the average teacher's salary in the state.

H_{8a}:--The average teacher's salary in school districts on shortened sessions is less than the average teacher's salary in the state.

Hypothesis IX

There will be no difference between the average instruction salary expenditure per student in school districts on shortened sessions and the average instruction salary expenditure per student in the state.

H_{9a}:--The average instruction salary expenditure per student in school districts on shortened sessions is less than the average instruction salary expenditure per student in the state.

Hypothesis X

There will be no difference between the average total general fund expenditure per student in school districts on shortened sessions and general fund expenditure per student in the state.

H_{10a}:--The average total general fund expenditure per student in school districts on shortened sessions is less than the average total general fund expenditure per student in the state.

Hypothesis XI

There will be no difference between the average total millage rate for all school purposes in school districts on shortened sessions and the average total millage rate for all school purposes in the state.

H_{11a}:--The average total millage rate for all school purposes in school districts on shortened sessions is less than the average total millage rate for all school purposes in the state.

Hypothesis XII

There will be no difference between the average operational millage rate in school districts on shortened sessions and average operational millage rate in the state.

H_{12a}:--The average operational millage rate in school districts on shortened sessions is less than the average operational millage rate in the state.

Hypothesis XIII

There will be no difference between the average debt retirement millage rate in school districts on shortened sessions and the average debt retirement millage rate in the state.

H_{13a}:--The average debt retirement millage rate in school districts on shortened sessions is greater than the average debt retirement millage rate in the state.

Hypothesis XIV

There will be no difference between the average state equalized valuation per student in districts on shortened sessions and the average state equalized valuation per student in the state.

H_{14a}:--The average state equalized valuation per student in districts on shortened sessions is less than the average state equalized valuation per student in the state.

Hypothesis XV

The decision by local school boards to place students on shortened sessions is independent of the outcome of elections (operational millage and/or construction bond proposals).

H_{15a}:--The decision by local school boards to place students on shortened sessions is dependent upon the outcome of elections (operational millage and/or construction bond proposals).

Hypothesis XVI

There is a positive linear relationship between operational millage rates (local effort) and the total general fund expenditures per student (educational opportunity provided).

H_{16a}:--There is no linear relationship between operational millage rates (local effort) and the total general fund expenditures per student (educational opportunity provided).

Analysis Procedure

In order to analyze the statistical hypotheses presented in the previous section, several statistical techniques were required. To avoid confusion the statistics used are presented in the same sequence as the statistical hypotheses were stated.

Correlated t Statistic

The design of this research requires the study of differences between selected financial characteristics in school districts on shortened sessions and school districts on full-day sessions. To improve the validity of the findings, known variables were compensated for by sampling the school districts in pairs. According to Hays:

> This matching of pairs is one form of experimental control, since each member of each experimental group must be identical (or nearly so) to his pair-mate in the other group with respect to the matching factor or factors, and thus the factor or factors used to match pairs cannot be responsible for any observed differences in the group.[1]

Though each school district is experimentally different in one respect (nominally, the independent financial variables) from its matched pair-mate, the observations are not independent, in that each has the distinct dependency of school district size and geographic location.

The appropriate statistical technique employed in testing Hypotheses 1 through 7, which involves the

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[1]William L. Hays, Statistics (New York: Holt, Rinehart and Winston, 1963), p. 334.

measurement of differences in means between matched pairs, was the correlated t statistic.[2] An alpha level of 0.05 was adopted as the criterion for significant results.

t Statistic

Hypotheses 8 through 14 called for the analysis of differences between selected financial characteristics in school districts on shortened sessions, and the characteristics of the population of all kindergarten through twelfth grade school districts in the state. The t statistic was selected as the most powerful, appropriate model because it allowed state mean values to be used as population parameters. It was assumed that the variable of financial characteristics in the population from which the sample of school districts on shortened sessions was selected followed a normal distribution.[3] Results were considered significant at an alpha level of 0.05.

Phi Correlation Coefficient

Hypothesis 15 required a determination as to the extent of independence (or lack of statistical association) between categorical characteristics: the passage or failure of selected elections, and their influence upon board of education action to initiate shortened sessions. The interest in this hypothesis was focused on the measure of the degree of

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[2] Ibid., pp. 333-335.

[3] Ibid., p. 311.

relationship; therefore, a phi correlation coefficient ø was calculated as a convenient index of strength of association in population.[4] The calculation of the phi correlation coefficient requires the use of the chi-square X^2 statistic, which according to Hays, required inferences as to the independence between mutually exclusive and exhaustive classes.[5] In this analysis the classes were: elections passed or failed, and their influence or non-influence on board of education action for shortened sessions. An alpha level of 0.05 was adopted as the criterion for significant results.

Pearson Product-Moment Correlation Coefficient

The statistical analysis of Hypothesis 16 must determine the extent of linear relationship between the variables of local school district effort (total operational millage), and financial ability to provide local educational programs (total general fund expenditure per student). The Pearson product-moment correlation coefficient was selected as the test statistic because of its ability to measure linear relationships.[6]

Limitation on Data

Data were available, and statistical analysis were made on all variables for the school years 1967-68 and

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[4] Ibid., pp. 604-605.

[5] Ibid., pp. 589-592.

[6] Ibid., pp. 496-499.

1968-69. It was impossible, however, to secure data on all variables for the school year 1969-70, as school district audits, which are the source of the data, were not completed. Data were available for the year 1969-70 on total millage rates, operational millage rates, debt retirement millage rates, and state equalized valuation per student, and in those cases where data were available appropriate analyses were made.

Generalized Conclusions

The purpose of this study was to identify financial characteristics of the test sample which are significantly different from the control sample, and the total population of all school districts in the state. Hays points out that "if the situation in which the researcher finds himself is so vague that he has no conception of the risk of loss through error, then how does he know that deciding among the hypotheses is better than suspending judgment?" The researcher is not required to

> decide against the hypothesis simply because some conventional level of significance was met. Other options, such as suspending judgment, may actually be better actions under the circumstances regardless of the result of the conventional significance test.[7]

Rejection of the null hypothesis in all years tested has, therefore, been set as the criterion for general acceptance of the alternate hypothesis.

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[7] Ibid., p. 265.

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

Introduction

This chapter analyzes the statistical hypotheses, using the procedures described in Chapter III. Each of the 16 hypotheses is analyzed separately, though grouped according to the statistical treatment used.

Analysis of Results

A table will accompany the presentation of findings for each of the hypotheses tested. The symbol NS used in the table will indicate that the findings were not significant. In those cases where significance is found, the probability level of significance will be stated. The table will also indicate whether data were available for the school year 1969-70.

A complete tabulation of all variables used in performing the required calculations for significance of the (t) and (r_{xy}) statistical treatments is found in Appendix C. Data required to test the significance of (Ø) in Hypothesis 15 can be found in the contingency table accompanying the presentation of results.

A five per cent level of significance was chosen as the criterion for rejection of each of the null hypotheses presented in this study. Inasmuch as all relationships were hypothesized to be directional, a one-tail test of significance was used.

> Hypothesis I.--There will be no difference between the average teacher's salary in school districts on shortened sessions and the average teacher's salary in school districts not on shortened sessions when school district size and geographic location are controlled.

In Hypotheses I through VII, selected financial characteristics in school districts on shortened sessions were compared statistically with corresponding financial characteristics in school districts maintaining full-day programs. Each school district on a shortened session was paired with a school district of comparable size and geographic location on a full-day session. The correlated t statistic was used to analyze the difference in means between pairs.

The correlated t values are presented in Table 4.1. Null Hypothesis I was not rejected in the school year 1967-68, but was rejected at $P<0.05$ in the school year 1968-69. Data were not available for the school year 1969-70. Though the mean differences in 1967-68 were in the same direction as hypothesized, findings in the two years were data which, where available, conflicted. In 1967-68 the average teacher's salary in the test sample was not significantly different than the average teacher's salary in school districts on full-day sessions. This was not the case in 1968-69, however,

TABLE 4.1.--Average teacher's salary: a comparison of test sample and matched-pair means.

		1967-68	1968-69	1969-70
Actual Mean[a] Difference	M_D	-25.25	-281.35	Data not available
Expected Mean Difference	$E(M_D)$	.0	.0	
Unbiased Estimator	est. σ_{M_D}	264.14	141.36	
	t	-.097	-1.987	
	df	19	16	
	P	NS	-.05	

[a]Difference in mean average teacher's salary in dollars.

when average teacher's salary in the test sample was found to be significantly lower than the control sample. On the basis of mixed findings, no generalized conclusion has been drawn.

> Hypothesis II.--There will be no difference between the average instruction salary expenditure per student in school districts on shortened sessions and the average instruction salary expenditure per student in school districts not on shortened sessions when school district size and geographic location are controlled.

The correlated t values are presented in Table 4.2. Null Hypothesis II was not rejected at $P<0.05$ in either the school year 1967-68 or 1968-69. Data were not available for the school year 1969-70. Though computations indicate that the mean differences were in the same direction as hypothesized in both years, the differences were not significant between the instructional salary expenditure per student in school districts on shortened sessions and similar expenditures in the control group on full-day sessions.

> Hypothesis III.--There will be no difference between the average total general fund expenditure per student in school districts on shortened sessions and the average total general fund expenditure per student in school districts not on shortened sessions when school district size and geographic location are controlled.

The correlated t values are presented in Table 4.3. Null Hypothesis III was not rejected at $P<0.05$ in either the school year 1967-68, or 1968-69. Data for the school year 1969-70 were not available. The mean differences were in the same direction as hypothesized, but findings were insignificant. No significant difference was found between the general fund expenditure per student in school districts on

TABLE 4.2.--Instructional salary expenditure per student: a comparison of test sample and matched-pair means.

		1967-68	1968-69	1969-70
Actual Mean[a] Difference	M_D	-5.02	-16.72	Data not available
Expected Mean Difference	(M_D)	.0	.0	
Unbiased est. Estimator	σ_{M_D}	12.83	17.01	
	t	-.416	-.977	
	df	19	16	
	P	NS	NS	

[a]Difference in mean instructional salary expenditure per student in dollars.

TABLE 4.3.--Total general fund expenditure per student: a comparison of test sample and matched-pair means.

		1967-68	1968-69	1969-70
Actual Mean[a] Difference	M_D	-6.06	-32.80	Data not available
Expected Mean Difference	$E(M_D)$	.0	.0	
Unbiased est. Estimator	σ_{M_D}	17.89	31.54	
	t	-.338	-1.039	
	df	19	16	
	P	NS	NS	

[a]Difference in mean total general fund expenditure per student in dollars.

shortened sessions and the general fund expenditure per student in school districts on full-day sessions.

> Hypothesis IV.--There will be no difference between the average total millage rate for all school purposes in school districts on shortened sessions and the average total millage rate for all school purposes in school districts not on shortened sessions when school district size and geographic location are controlled.

The correlated t values are presented in Table 4.4. Null Hypothesis IV was not rejected at $P<0.05$ in any of the school years 1967-68, 1968-69, or 1969-70. The calculated t values in all cases were in the same direction as hypothesized, but no significance was found. There was no significant difference between total millage rates in school districts on shortened sessions and those in school districts on full-day sessions.

TABLE 4.4.--Total millage rates: a comparison of test sample and matched-pair means.

		1967-68	1968-69	1969-70
Actual Mean Difference[a]	M_D	.871	.391	.385
Expected Mean Difference	$E(M_D)$	.0	.0	.0
Unbiased est. Estimator	σ_{M_D}	1.01	1.65	1.91
	t	.863	.237	.323
	df	19	16	21
	P	NS	NS	NS

[a]Difference in mean total millage rate in mills.

> Hypothesis V.--There will be no difference between the average operational millage rate in school districts on shortened sessions and the average operational millage rate in school districts not on shortened sessions when school district size and geographic location are controlled.

The correlated t values are presented in Table 4.5. Null Hypothesis V was not rejected at $P<0.05$ in any of the school years 1967-68, 1968-69, or 1969-70. Findings were mixed in direction, with no indication of significance. There was no significant difference between the operational millage rates in school districts on shortened sessions and comparable millage levies in school districts on full-day sessions.

> Hypothesis VI.--There will be no difference between the average debt retirement millage rate in school districts on shortened sessions and the average debt retirement millage rate in school districts not on shortened sessions when school district size and geographic location are controlled.

The correlated t values are presented in Table 4.6. Null Hypothesis VI was not rejected at $P<0.05$ in any of the years 1967-68, 1968-69, or 1969-70. Again the findings were in the same directions as hypothesized for all of the three years studied, but lacked the required level of significance. The debt retirement millage rates levied in school districts on shortened sessions were not significantly different than the debt retirement millage rates levied in school districts on full-day sessions.

> Hypothesis VII.--There will be no difference between the average state equalized valuation per student in school districts on shortened sessions and the average state equalized valuation per student in school

TABLE 4.5.--Operational millage rates: a comparison of test sample and matched-pair means.

		1967-68	1968-69	1969-70
Actual Mean[a] Difference	M_D	.433	1.101	-.686
Expected Mean Difference	$E(M_D)$	.0	.0	.0
Unbiased est. Estimator	σ_{M_D}	1.07	1.42	1.07
	t	.405	.775	-.638
	df	19	16	21
	P	NS	NS	NS

[a]Differences in mean operational millage rate in mills.

TABLE 4.6.--Debt retirement millage rates: a comparison of test sample and matched-pair means.

		1967-68	1968-69	1969-70
Actual Mean[a] Difference	M_D	.464	.906	.852
Expected Mean Difference	$E(M_D)$	.0	.0	.0
Unbiased est. Estimator	σ_{M_D}	.515	.726	.567
	t	.901	1.248	1.502
	df	19	16	21
	P	NS	NS	NS

[a]Difference in mean debt retirement millage rate in mills.

districts not on shortened sessions when school district size and geographic location are controlled.

The correlated t values are presented in Table 4.7. Null Hypothesis VII was not rejected at $P<0.05$ in any of the three school years included in the study. The calculated t values were directional as predicted in 1967-68, 1968-69, and 1969-70, though none was at the level stipulated as the minimum limit for significance. No significant difference was observed between the state equalized valuation per student in school districts on shortened sessions, and the state equalized valuation in school districts on full-day sessions.

TABLE 4.7.--State equalized valuation per student: a comparison of test sample and matched-pair means.

			1967-68	1968-69	1969-70
Actual Mean Difference[a]		M_D	992.05	-2,209.63	-250.18
Expected Mean Difference		$E(M_D)$	.0	.0	.0
Unbiased Estimator	est.	σ_{M_D}	1,211.16	2,270.62	1,441.25
		t	.810	-1.19	-.17
		df	19	16	21
		P	NS	NS	NS

[a]Difference in mean state equalized valuation per student in dollars.

The first seven hypotheses attempted to find financial characteristics that school districts on shortened sessions have in common, which are different from their counterparts in school districts on full-day sessions. The school districts between which the comparisons were made were controlled as to size and geographic location. Of the seven hypotheses tested, none was found to be potent in a predictive sense. The financial characteristics of the two samples were found to be similar.

There was, however, another observation worth noting. It was mentioned in the presentation and analysis of data, that the findings were in the direction hypothesized, though not significant. The alternate hypotheses predicted that those financial characteristics related to expenditure and wealth would be lower in the test sample than in the control sample, and those characteristics related to millage rates would be higher. Tables 4.1 through 4.7 explain why this emphasis was made. Of the 18 t statistic calculations performed, 16 resulted in values that were in the direction hypothesized. To test the significance of the number of differences going in the hypothesized direction, the sign test was used, where $p(X_a<X_b) = p(X_a>X_b) = 1/2$. The null hypothesis was rejected at the alpha level 0.05. The acceptance of the alternate hypothesis implies that though the magnitude of the differences was not large enough to be significant, the number of cases in which the differences were in the hypothesized direction was significant.

Hypothesis VIII.--There will be no difference between the average teacher's salary in school districts on shortened sessions and the average teacher's salary in the state.

Hypotheses VIII through XIV compared differences in means of financial characteristics in school districts on shortened sessions and the corresponding means for the characteristics in the state used as population parameters. The t statistic was selected as the appropriate test in finding the difference between the mean of the characteristic in the test sample and the state mean.

The t values calculated in testing Hypothesis VIII are presented in Table 4.8. Null Hypothesis VIII was rejected at $P<0.05$ in both school years 1967-68 and 1968-69. Data were not available for the school year 1969-70. Findings were significant at $P<0.001$ in 1967-68, and at $P<0.005$ in 1968-69. Therefore, null Hypothesis VIII was rejected and the following hypothesis accepted:

H_{8a}: The average teacher's salary in school districts on shortened sessions is less than the average teacher's salary in the state.

Hypothesis IX.--There will be no difference between the average instruction salary expenditure per student in school districts on shortened sessions and the average instruction salary expenditure per student in the state.

The t values are presented in Table 4.9. Null Hypothesis IX was not rejected at $P<0.05$ in the school year 1967-68, but was rejected at $P<0.05$ in the school year 1968-69. Data were not available for the school year 1969-70. Though findings were not significant in 1967-68, the t value calculated for 1968-69 was significant at $P<0.001$. Data on repeating

TABLE 4.8.--Average teacher's salary: a comparison of test sample and state means.

		1967-68	1968-69	1969-70
Sample Mean	$\bar{X}$	7,287	8,438	Data not available
State Mean[a]	μ	8,238	9,134	
Difference[b] in Means	$(\bar{X} - \mu)$	-951	-696	
Unbiased Estimator	$\hat{S}$	1,121.9	956.3	
	t	-3.79	-2.91	
	df	19	16	
	P	.001	.005	

[a]Michigan Department of Education: Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69.

[b]Difference in mean average teacher's salary in dollars.

TABLE 4.9.--Instructional salary expenditure per student: a comparison of test sample and state means.

		1967-68	1968-69	1969-70
Sample Mean	$\bar{X}$	438.37	395.98	Data not available
State Mean[a]	μ	423.63	473.04	
Difference[b] in Means	$(\bar{X} - \mu)$	14.74	-77.06	
Unbiased Estimator	$\hat{S}$	62.55	53.96	
	t	1.052	-5.89	
	df	19	16	
	P	NS	.001	

[a]Michigan Department of Education: Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69.

[b]Difference in mean instructional salary expenditure per student in dollars.

districts, those that had students on shortened sessions both years, revealed that some school districts expended less for instructional salaries in 1968-69 than they expended the previous year. This would suggest cuts in instructional staff resulting from tightened budgets, or lack of school facilities. In 1967-68 the instructional salary expenditure per student was not significantly different than the mean instructional salary expenditure in the state. However, in 1968-69 the instruction salary expenditure per student was found to be significantly lower than the state mean. On the basis of the criterion established in the study design, no generalized conclusion has been drawn.

> Hypothesis X.--There will be no difference between the average total general fund expenditure per student in school districts on shortened sessions and general fund expenditure per student in the state.

The t values are presented in Table 4.10. Null Hypothesis X was rejected at $P<0.05$ in both school years 1967-68, and 1968-69. Data were not available for the school year 1969-70. Findings were significant at $P<0.005$ in 1967-68, and at $P<0.001$ in 1968-69. Null Hypothesis X was rejected and the alternate hypothesis accepted.

> H_{10a}: The average total general fund expenditure per student in school districts on shortened sessions is less than the average total general fund expenditure per student in the state.

> Hypothesis XI.--There will be no difference between the average total millage rate for all school purposes in school districts on shortened sessions and the average total millage rate for all school purposes in the state.

TABLE 4.10.--Total general fund expenditure per student: a comparison of test sample and state means.

		1967-68	1968-69	1969-70
Sample Mean	$\bar{X}$	574.87	671.51	Data not available
State Mean[a]	μ	624.77	707.21	
Difference[b] in Means	$(\bar{X} - \mu)$	-49.90	-89.70	
Unbiased Estimator	$\hat{S}$	74.64	64.95	
	t	-2.99	-5.74	
	df	19	16	
	P	.005	.001	

[a]Michigan Department of Education: Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69.

[b]Difference in mean total general fund expenditure per student in dollars.

The t values are presented in Table 4.11. Null Hypothesis XI was rejected at $P<0.05$ in both the school years 1967-68 and 1968-69. Data were not available for the school year 1969-70. Significance was established at the level of $P<0.025$ in 1967-68, and at $P<0.01$ in 1968-69. Null Hypothesis XI was rejected and the alternate hypothesis accepted.

H_{11a}: The average total millage rate for all school purposes in school districts on shortened sessions is less than the average total millage rate for all school purposes in the state.

Hypothesis XII.--There will be no difference between the average operational millage rate in school districts on shortened sessions and the average operational millage rate in the state.

TABLE 4.11.--Total millage rates: a comparison of test sample and state means.

		1967-68	1968-69	1969-70
Sample Mean	$\bar{X}$	23.34	25.28	Data not available
State Mean[a]	μ	26.21	29.11	
Difference[b] in Means	$(\bar{X} - \mu)$	-2.82	-3.83	
Unbiased Estimator	$\hat{S}$	38.68	5.68	
	t	-2.03	-2.77	
	df	19	16	
	P	.025	.01	

[a]Michigan Department of Education: Ranking of Public Schools by Selected Financial Data for 1967-68, 1968-69; Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69.

[b]Difference in mean total millage rate in mills.

The t values are presented in Table 4.12. Null Hypothesis XII was rejected at $P<0.05$ in both the school years 1967-68 and 1968-69. Data were not available for the school year 1969-70. Findings were significant at $P<0.001$ and $P<0.005$. Therefore, null Hypothesis XII was rejected and the following hypothesis accepted:

> H_{12a}: The average operational millage rate in school districts on shortened sessions is less than the average operational millage rate in the state.

> Hypothesis XIII.--There will be no difference between the average debt retirement millage rate in school districts on shortened sessions and the average debt retirement millage rate in the state.

TABLE 4.12.--Operational millage rates: a comparison of test sample and state means.

		1967-68	1968-69	1969-70
Sample Mean	$\bar{X}$	17.89	20.87	Data not available
State Mean[a]	μ	22.66	25.38	
Difference[b] in Means	$(\bar{X} - \mu)$	-4.97	-4.51	
Unbiased Estimator	$\hat{S}$	4.35	5.35	
	t	-5.11	-3.48	
	df	19	16	
	P	.001	.005	

[a]Michigan Department of Education: Ranking of Public Schools by Selected Financial Data for 1967-68, 1968-69; Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69.

[b]Difference in mean operational millage rate in mills.

The t values are presented in Table 4.13. Null Hypothesis XIII was rejected at $P<0.05$ in both the school years 1967-68 and 1968-69. Data were not available for the school year 1969-70. The t value computations established significance at $P<0.005$ in 1967-68, and $P<0.025$ in 1968-69. Findings resulted in the rejection of null Hypothesis XIII. The alternate hypothesis was accepted.

> H_{13a}: The average debt retirement millage rate in school districts on shortened sessions is greater than the average debt retirement millage rate in the state.

Hypothesis XIV.--There will be no difference between the average state equalized valuation per student in districts on shortened sessions and the average state equalized valuation per student in the state.

TABLE 4.13.--Debt retirement millage rates: a comparison of test sample and state means.

		1967-68	1968-69	1969-70
Sample Mean	$\bar{X}$	5.43	4.99	Data not available
State Mean[a]	μ	3.56	3.72	
Difference[b] in Means	$(\bar{X} - \mu)$	1.87	1.27	
Unbiased Estimator	$\hat{S}$	2.52	2.42	
	t	3.33	2.38	
	df	19	16	
	P	.005	.025	

[a]Michigan Department of Education: Ranking of Public Schools by Selected Financial Data for 1967-68, 1968-69; Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69.

[b]Difference in mean debt retirement millage rates in mills.

The t values are presented in Table 4.14. Null Hypothesis XIV was rejected at $P<0.05$ in 1968-69, but was not rejected in either 1967-68, or 1969-70. Though the level of rejection was at $P<0.01$ in 1968-69, the analysis of data for 1967-68 and 1969-70 did not provide significant findings. In 1968-69 the state equalized valuation per student in the test sample was significantly lower than in school districts on full-day sessions. This was not the case, however, the the year preceding or following, when no significance was found. Findings were found to be mixed and unstable, making it impossible to state a generalized conclusion.

TABLE 4.14.--State equalized valuation per student: a comparison of test sample and state means.

		1967-68	1968-69	1969-70
Sample Mean	$\bar{X}$	12,707	12,987	15,101
State Mean[a]	μ	14,459	15,198	16,218
Difference[b] in Means	$(\bar{X} - \mu)$	-1752	-2211	-1.017
Unbiased Estimator	$\hat{S}$	5,421.84	3,519.58	4,105.41
	t	-1.45	-2.59	-1.14
	df	19	16	21
	P	NS	.01	NS

[a]Michigan Department of Education: Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69. Mean for 1969-70 secured from the Michigan Department of Education.

[b]Difference in mean state equalized valuation per student in dollars.

Hypothesis XV.--The decision by local school boards to place students on shortened sessions is independent of the outcome of elections (operational millage and/or construction bond proposals).

Hypothesis XV sought a relationship between election outcomes and their influence on decisions by boards of education to initiate shortened sessions. Data were treated with the chi-square statistic (X^2) which was converted to a phi correlation coefficient ϕ to measure the strength of dependence.

Questionnaires were mailed to 46 school districts comprising the test sample of school districts on shortened sessions. There were 39 responses, 36 of which reported elections were held in their district either to increase

operational millage or to bond for the construction of facilities. The respondents provided the required data as to the election outcome (passed or failed), and the influence of the election outcome on the board to shorten the school day (yes or no). The calculated values of chi-square, and the phi-correlation coefficient are presented in Table 4.15. A contingency table is also presented, containing the distribution of responses. The computed phi correlation coefficient rejected the null hypothesis at $P<0.05$, indicating significant dependence between election outcomes and board decisions to initiate shortened sessions. The phi-correlation coefficient, calculated at .680, reflects the degree to which there is dependence between categories.

Null Hypothesis XV was rejected and the alternate hypothesis was accepted.

> H_{15a}: The decision by local school boards to place students on shortened sessions is dependent upon the outcome of elections (operational millage and/or construction bond proposals).

> Hypothesis XVI.--There is a positive linear relationship between operational millage rates (local effort) and the total general fund expenditure per student (educational opportunity provided).

The test of Hypothesis XVI required the analysis of the linear relationship between local school effort (total operational millage), and financial ability to provide local educational programs (total general fund expenditure per student). The strength of linear relationship was arrived at by applying the Pearson product-moment correlation coefficient r_{xy}.

TABLE 4.15.--Selected election outcomes and their influence on Board of Education decisions to shorten sessions.

Election Outcome	Did the results of the election influence the board of education decision to place students on shortened sessions? Yes	No	Total
Failed	23	4	27
Passed	1	8	9
	24	12	36

X^2 - 16.66

df - 1

ø - .680

P - .01

The calculated values of the Pearson product-moment correlation coefficient r_{xy}, and the t value are found in Figure 1 for the school year 1967-68, and in Figure 2 for the year 1968-69. The tables also include a scatter diagram of the points used in the analysis. The Pearson product-moment correlation coefficient calculated for the school year 1967-68 was .407 ($t = 1.93$, $df = 18$, $P<0.05$), indicating a statistically significant though weak relationship between operational millage rates and total general fund expenditure. The Pearson product-moment correlation coefficient calculated for the school year 1968-69 was .314 ($t = 1.279$, $df = 15$, $P<0.05$), indicating a statistical relationship too weak to be statistically significant. Thus, though in 1967-68 a slight indication was found for the existence of a relationship between operational millage rates and total general fund expenditure per student, in 1968-69 it was found these variables were independent. Operational millage rates levied in a school district on shortened sessions were found to be invalid pre .ctors of the total general fund expenditure per student.

Summary

In this chapter the hypotheses stated in Chapter III were stated in their null form and analyzed. Those which were rejected in the null form were restated as directional, or alternate hypotheses. A summary of the results follows:

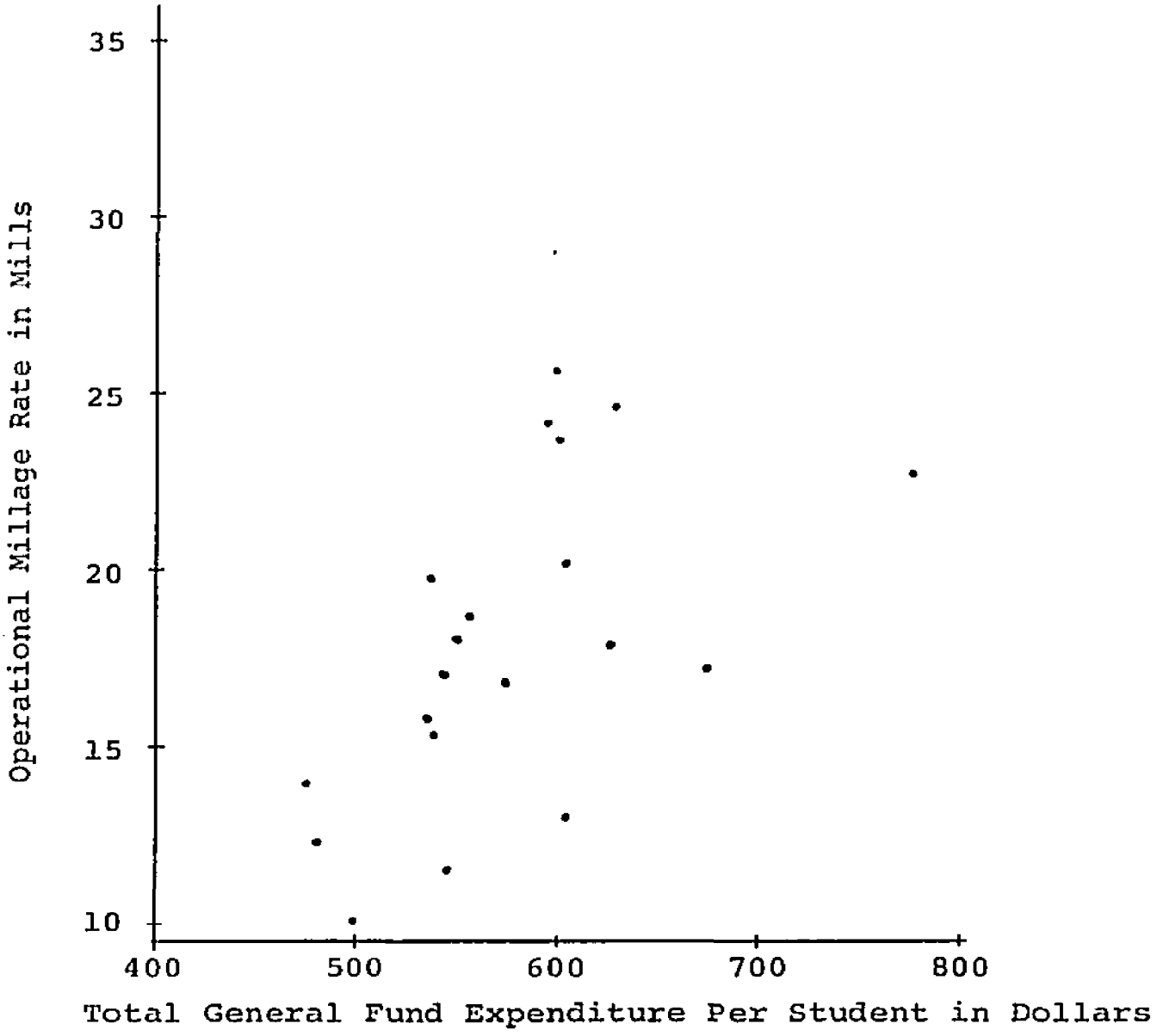

Figure 1.--Relationship of Operational Millage Rates to Total General Fund Expenditure Per Student (1967-1968).

df	18
xy	.407
t	1.893
p	.05

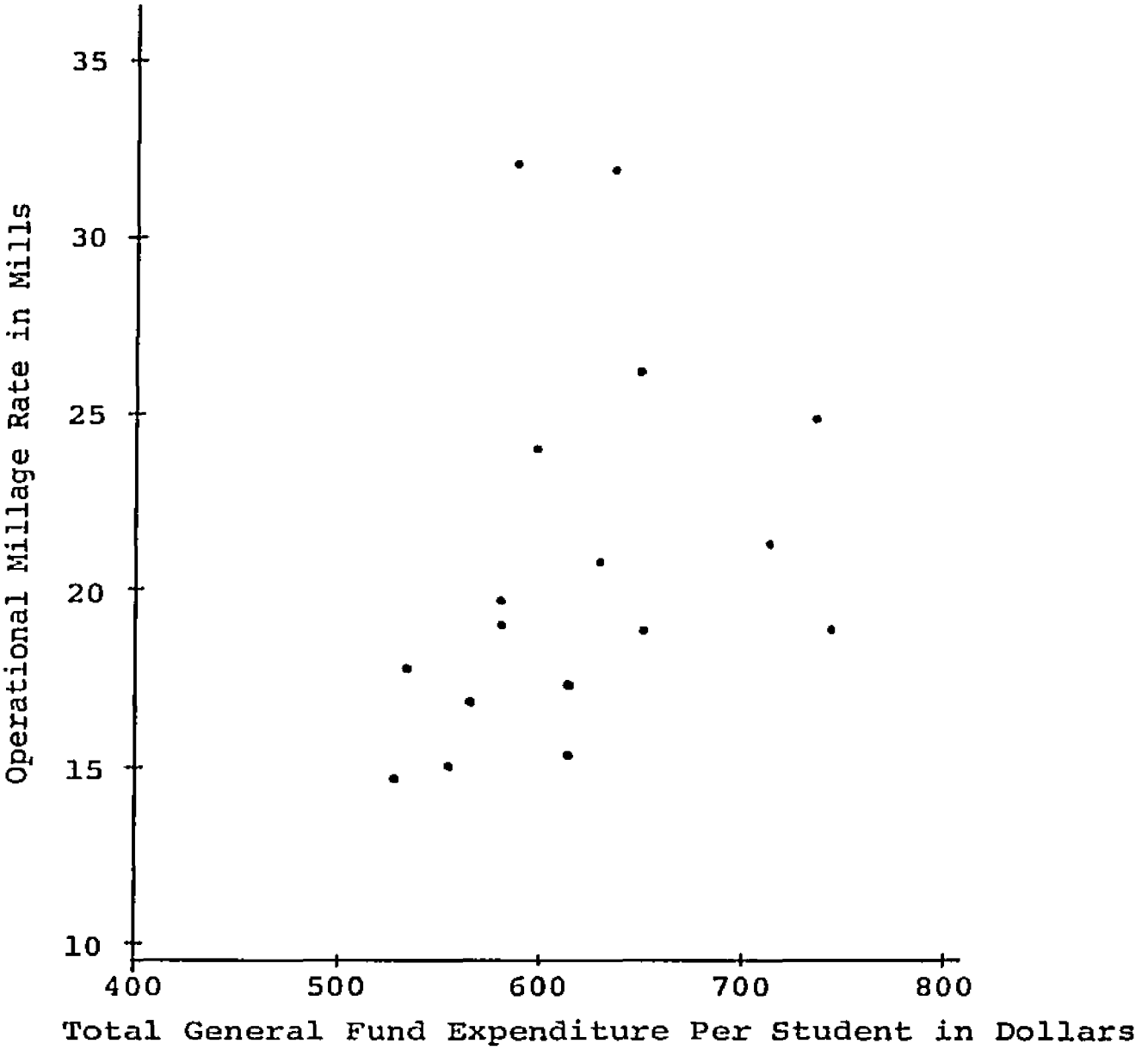

Figure 2.--Relationship of Operational Millage Rates to Total General Fund Expenditure Per Student (1968-1969).

df	15
xy	.314
t	1.279
P	NS

Hypothesis I.--There will be no difference between the average teacher's salary in school districts on shortened sessions and the average teacher's salary in school districts not on shortened sessions when school district size and geographic location are controlled.

The difference in means was not significant in the school year 1967-68, but was significant at $P<0.05$ in the school year 1968-69. Data were not available, resulting in no findings, for the school year 1969-70. Findings were inconclusive and judgment as to a generalized conclusion has been withheld.

Hypothesis II.--There will be no difference between the average instruction salary expenditure per student in school districts on shortened sessions and the average instruction salary expenditure per student in school districts not on shortened sessions when school district size and geographic location are controlled.

The observed difference in means was not significant at $P<0.05$ in either the school year 1967-68 or 1968-69. Data were not available to test the hypothesis for the school year 1969-70. The null hypothesis was not rejected.

Hypothesis III.--There will be no difference between the average total general fund expenditure per student in school districts on shortened sessions and the average total general fund expenditure per student in school districts not on shortened sessions when school district size and geographic location are controlled.

The difference in means was not significant at $P<0.05$ in either the school year 1967-68 or 1968-69. No test of the hypothesis was made in 1969-70, as data were not available. The null hypothesis was not rejected.

Hypothesis IV.--There will be no difference between the average total millage rate for all school purposes in school districts on shortened sessions and the average total millage rate for all school purposes in

school districts not on shortened sessions when school district size and geographic location are controlled.

The difference in means was not significant at $P<0.05$ in any of the school years 1967-68, 1968-69, or 1969-70. Null Hypothesis IV could not be rejected.

Hypothesis V.--There will be no difference between the average operational millage rate in school districts on shortened sessions and the average operational millage rate in school districts not on shortened sessions when school district size and geographic location are controlled.

The analysis of data resulted in finding no significant difference in means at $P<0.05$ in any of the school years 1967-68, 1968-69, or 1969-70. The null hypothesis was not rejected.

Hypothesis VI.--There will be no difference between the average debt retirement millage rate in school districts on shortened sessions and the average debt retirement millage rate in school districts not on shortened sessions when school district size and geographic location are controlled.

The analysis of data resulted in finding no significant difference in means at $P<0.05$ in any of the school years 1967-68, 1968-69, or 1969-70. The null hypothesis was not rejected.

Hypothesis VII.--There will be no difference between the average state equalized valuation per student in school districts on shortened sessions and the average state equalized valuation per student in school districts not on shortened sessions when school district size and geographic location are controlled.

The analysis of the difference in means in the school years 1967-68, 1968-69, and 1969-70 resulted in no significant findings at $P<0.05$. Null hypothesis VII could not be rejected.

Hypothesis VIII.--There will be no difference between the average teacher's salary in school districts on shortened sessions and the average teacher's salary in the state.

The observed difference in means was significant at $P<0.05$ in both the school years 1967-68 and 1968-69. No test of significance was made in 1969-70 because data were not available. Null Hypothesis VIII was rejected, and the following alternate hypothesis was accepted:

H_{8a}: The average teacher's salary in school districts on shortened sessions is less than the average teacher's salary in the state.

Hypothesis IX.--There will be no difference between the average instruction salary expenditure per student in school districts on shortened sessions and the average instruction salary expenditure per student in the state.

Analysis of data revealed that the difference in means was not significant in the school year 1967-68, but was significant at $P<0.05$ in the school year 1968-69. Data were not available for the school year 1969-70. Findings were inconclusive, and under the criterion of the design, judgment has been withheld as to a generalized conclusion.

Hypothesis X.--There will be no difference between the average total millage rate for all school purposes in school districts on shortened sessions and the average total millage rate for all school purposes in the state.

The analysis of the difference of means in the school years 1967-68 and 1968-69 resulted in significant findings at $P<0.05$. The data required to make calculations for the school year 1969-70 were not available. Null Hypothesis X was rejected and the following alternate hypothesis accepted:

H_{10a}: The average total general fund expenditure per student in school districts on shortened sessions is less than the average total general fund expenditure per student in the state.

Hypothesis XI.--There will be no difference between the average total millage rate for all school purposes in school districts on shortened sessions and the average total millage rate for all school purposes in the state.

Findings were consistently significant at $P<0.05$ in each of the school years 1967-68 and 1968-69. No calculations were made for the school year 1969-70, as data were not available. Null Hypothesis XI was rejected and the alternate hypothesis was accepted.

H_{11a}: The average total millage rate for all school purposes in school districts on shortened sessions is less than the average total millage rate for all school purposes in the state.

Hypothesis XII.--There will be no difference between the average operational millage rate in school districts on shortened sessions and average operational millage rate in the state.

The difference in means was significant at $P<0.05$ in both the school years 1967-68 and 1968-69. Data were not available for the school year 1969-70. Null Hypothesis XII was rejected and the following alternate hypothesis accepted:

H_{12a}: The average operational millage rate in school districts on shortened sessions is less than the average operational millage rate in the state.

Hypothesis XIII.--There will be no difference between the average debt retirement millage rate in school districts on shortened sessions and the average debt retirement millage rate in the state.

The observed difference in means was significant at $P<0.05$ in the school years 1967-68 and 1968-69. No analysis

was made for the school year 1969-70, as data were not available. The null hypothesis was rejected and the alternate hypothesis was accepted.

> H_{13a}: The average debt retirement millage rate in school districts on shortened sessions is greater than the average debt retirement millage rate in the state.

> Hypothesis XIV.--There will be no difference between the average state equalized valuation per student in districts on shortened sessions and the average state equalized valuation per student in the state.

The difference in means in the school year 1968-69 was significant at $P<0.05$. However, analysis of data for the school years 1967-68 and 1969-70 provided no significant findings. Findings were inconclusive and a generalized conclusion has been withheld.

> Hypothesis XV.--The decision by local school boards to place students on shortened sessions is independent of the outcome of elections (operational millage and/or construction bond proposals).

The phi correlation coefficient calculated at .680 was significant at $P<0.05$, showing dependence between election outcomes and board decisions to initiate shortened sessions. Null Hypothesis XV was rejected and the alternate hypothesis accepted.

> H_{15a}: The decision by local school boards to place students on shortened sessions is dependent upon the outcome of elections (operational millage and/or construction bond proposals).

> Hypothesis XVI.--There is a positive linear relationship between operational millage rates (local effort) and the total general fund expenditure per student (educational opportunity provided).

The Pearson product-moment correlated coefficient calculated for the school year 1967-68 was .407, a weak though significant correlation at $P<0.05$. Replication of the experiment for the school year 1968-69 showed an insignificant correlation of .314. Though significance was not found in 1968-69, findings strongly question the linear relationship between operational millage rate and the total general fund expenditure per student.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Summary

Purposes of the Study

This study was undertaken to determine if school districts on shortened sessions have common financial characteristics which, when compared with the financial characteristics of school districts on full-day sessions, would reveal significant differences.

1. It was expected that the analysis of financial variables would show a relationship between inequality of educational opportunity evidenced by shortened sessions, and inequality of educational opportunity as reflected by school district expenditure and income patterns.

2. It was also expected that a relationship would exist between the outcomes of elections (to increase the operational millage rate and/or to bond for the construction of facilities), and the local board's decision to initiate a shortened school day.

Limitations of the Study

1. Analysis was limited to specific financial variables including: expenditures (average teacher's salary, instruction

salary expenditure per student, and average total general fund expenditure per student), millage rates (total for all school purposes, operational, and debt retirement), and wealth (state equalized valuation per student).

2. Sources of data restricted the study to Michigan school districts offering kindergarten through twelfth grade programs.

3. The study does not provide findings for all variables for the school year 1969-70, as the data required for analysis were not available.

4. A consistent pattern of findings in each of the years analyzed was established as the criterion to reject or not reject the null hypothesis.

Review of Literature

The general areas of interest in this study were the adequacy of the Michigan State-Aid Formula to equalize educational opportunity, the financial implications of teacher militancy on school district expenditures, and the lack of state assistance in the financing of school facilities.

The review of literature consisted of a discussion of state responsibility for financing public education, studies contributing to the present structure of financing public education in Michigan, the economic implications of teacher militancy, and studies relating wealth and expenditure to equality of educational opportunity.

Sources of Data

Selected financial data used in this study were obtained from the following sources: Michigan Department of Education: Ranking of Public Schools by Selected Financial Data for 1967-68, 1968-69; Michigan Association of School Administrators: Selected Administrative Information and Millage Levies Relative to Michigan Public School Districts, February, 1970; Michigan Department of Education: Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69. Also data related to the influence of selected election results on board of education decisions to initiate shortened sessions were acquired through questionnaires.

Design of the Study

The sample.--Three test samples of school districts on shortened sessions were selected, one for each of the three years covered by the study. The samples consisted of 20 school districts in 1967-68, 17 school districts in 1968-69, and 22 in 1969-70.

Procedure.--The statistical design of this study called for two sets of comparisons to be made. The financial characteristics of districts on shortened sessions were first compared with a control sample of school districts on full-day sessions, when school district size and geographic location were controlled, and second with the state mean representing all school districts in the state. The use of

matched-pair analysis was desirable, in that it eliminated two variables, size and geographic location, which could influence the validity of the findings.

Instrumentation.--The instrument used was designed to obtain data related to school district elections. The information required was the outcome of elections (to increase the operational millage rate and/or to bond for the construction of facilities), and the influence of the election outcome on the board's decision to shorten the school day.

Analysis.--The following methods were used in the treatment of data:

1. Hypotheses I through VII required the use of a statistic appropriate to measure the difference in means between matched pairs. The statistic used was the correlated t test, with the level of significance set at $P<0.05$.

2. In Hypotheses VIII through XIV the t statistic was used in computations to measure the difference between the mean of each characteristic in the test sample and the state mean used as a population parameter. Significance was considered at $P<0.05$.

3. Hypothesis XV tested the independence between categorical characteristics in mutually exhaustive classes. Independence was measured by the phi correlation coefficient with the significance level at $P<0.05$.

4. Hypothesis XVI required a statistical test that would measure the linear relationship between variables.

Computations were made using the Pearson product-moment correlation coefficient, with findings considered significant at $P<0.05$.

Conclusions

From the findings of this study the following conclusions are drawn:

1. The mean average teacher's salary in school districts on shortened sessions was significantly lower than the mean of the control sample on full-day sessions in 1967-68. Replication of the analysis using data for 1968-69 did not show significance.

2. The mean instruction salary expenditure per student in school districts on shortened sessions was not significantly different than the mean of the control sample on full-day sessions.

3. The mean total general fund expenditure per student in school districts on shortened sessions was not significantly different than the mean of the control sample on full-day sessions.

4. The mean total millage rate for all school purposes in school districts on shortened sessions was not significantly different than the mean of the control sample on full-day sessions.

5. The mean operational millage rate in school districts on shortened sessions was not significantly different than the mean of the control sample on full-day sessions.

6. The mean debt retirement millage rate in school districts on shortened sessions was not significantly different than the mean of the control sample on full-day sessions.

7. The mean state equalized valuation per student in school districts on shortened sessions was not significantly different than the mean of the control sample on full-day sessions.

8. The mean average teacher's salary in school districts on shortened sessions was significantly lower than the state mean.

9. The mean instruction salary expenditure per student in school districts on shortened sessions was significantly lower than the state mean in 1968-69, but no significant difference in means was found in 1967-68.

10. The mean total general fund expenditure per student in school districts on shortened sessions was significantly lower than the state mean.

11. The mean total millage rate for all school purposes in school districts on shortened sessions was significantly lower than the state mean.

12. The mean operational millage rate in school districts on shortened sessions was significantly lower than the state mean.

13. The mean debt retirement millage rate in school districts on shortened sessions was significantly higher than the state mean.

14. The mean state equalized valuation per student in school districts on shortened sessions was significantly lower than the state mean in 1968-69. No support was given this finding in either 1967-68 or 1969-70, when the analysis of data showed no significant difference in means.

15. There was a positive dependent relationship between outcomes of elections (operational millage and/or construction bond proposals), and the decision by local school boards to place students on shortened sessions.

16. There was a weak linear relationship between operational millage rates (local effort) and the total general fund expenditure (educational opportunity provided) in 1967-68. However, the analysis of data in 1968-69 showed the two variables to be independent.

Implications

School districts on shortened sessions are considered by the Michigan Department of Education as providing inequality of educational opportunity, in that they are not meeting the criterion for length of school day established in the State of Michigan General School Laws, Rule 340.14. It was because of this recognition by the state, that these districts were selected as the focal point of this study. This study attempted to identify financial characteristics in these districts that are different from school districts on full-day programs.

1. Possibly the most impressive finding in this study was the lack of significance that was found between school districts on shortened sessions when they were compared with the control sample. The control sample was selected from school districts of similar size and geographic location. Somewhere in the selection process financial characteristics were also controlled. Literally no significant differences were found in the analysis of data that differentiated school districts on shortened sessions from their matched pair. Variables in the test sample approximated the distribution of variables in the control sample in every way. This finding provides fertile ground for future study.

The significant differences that were found when the test sample was compared with state means suggests that though both the test sample and the control sample were drawn from the school districts of the state where variables were distributed normally, their financial characteristics were not representative of that normal distribution.

2. When the data related to average teacher's salary were analyzed, findings revealed that the mean average teacher's salary in the test sample was significantly lower than the state mean. It was also observed that the total general fund expenditure per student was significantly lower than the state mean. These findings strongly supported the relationship between school districts on shortened sessions, and educational opportunity, expressed in the terms of

Keppel,[1] Benson,[2] and Garvue,[3] that the most dependable measure of educational opportunity is reflected in the total general fund expenditure.

Findings were equally supportive of conclusions in studies by Mayeske, et al.,[4] and Flanagan,[5] that two of the most impressive indicators of educational opportunity are teacher's salary and per-pupil expenditure. Though Coleman[6] did not find expenditures to be as marked an indicator of equality in his study of Equality of Educational Opportunity, his findings did show the teacher to be the most important school-related factor in educational opportunity. It seems reasonable to assume, to the extent that we live in a supply and demand economy, higher salaries will draw more prospective teachers, improving the field of selection.

The analysis of instruction salary expenditure produced mixed findings. No significant difference was found in 1967-68, but significant findings were found in 1968-69. A possible explanation for these mixed findings was revealed by the fact that some of the districts which were on shortened

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[1]Keppel, op. cit., p. 75.

[2]Benson, The Cheerful Prospect, op. cit., p. 62.

[3]Garvue, op. cit., p. 131.

[4]Mayeske, op. cit., p. 55.

[5]Flanagan, op. cit., pp. 10-11.

[6]Coleman, op. cit., p. 325.

sessions both years spent less for instructional salaries in 1968-69 than they did the previous year. It is possible that boards of education held expenditure up to the state mean until they eventually faced a deficit situation, and then increased class size or cut back on instructional services (e.g., art, music, physical education, and special education). Though only speculation, if this is what did happen, it would be another example of inequality of educational opportunity.

Many writers have expressed concern as to the impact of teacher militancy on the allocation of educational resources. This study, however, emphasized the observation by Benson, " . . . that we have no evidence that bargaining units will be predominantly successful in school districts where expenditure increases are most urgently needed."[7] With the mean average teacher's salary in school districts on shortened sessions standing significantly lower than the state mean, it is questionable that teacher militancy had any influence on the shortened school day.

3. The fact that the analysis of data revealed that the mean total millage rates for all school purposes, and the mean operational millage rates in school districts on shortened sessions were significantly lower than the state mean was not unexpected. These findings would imply that one of the major, if not the major reason for school districts resorting to shortened sessions in their schools is lack of

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[7]Benson, op. cit., pp. 1-2.

local financial support.[8] Whatever the reason for this reluctance to support education, it was also characteristic of the control sample on full-day sessions.

With the additional finding that the mean debt retirement millage rate in the test sample was higher than the state mean, it is highly probably that the above average debt retirement millage rate compounds the already critical financial problem of these districts. With the total millage rate in the test sample already below the state mean, the districts are required to use a larger proportion of the total millage for debt purposes than are districts throughout the state as a whole. Thomas[9] observed in his study, that the absence of state contributions to the financing of school construction was a failure on the part of the state to equalize educational opportunity.

4. The wealth of the school district, measured in state equalized valuation per student, proved to be the least productive financial characteristic as a predictor of the level of educational opportunity. Though the state equalized valuation per student in the test sample was found to be significantly lower than the state mean in 1968-69, its real significance is questioned with the observation of no significance

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[8]Lack of local financial support may reflect community apathy, dissatisfaction, or resistance to increased taxes.

[9]Thomas, op. cit., p. 2.

in either the year 1967-68 or 1969-70. The findings of this study do not agree with the findings of Vincent[10] or Wollatt[11] in their study of extremely wealthy school districts. Their findings placed considerable emphasis upon the correlation of wealth to educational opportunity. The difference in findings can possibly be attributed to geographic location. The two studies cited were conducted in specific suburban areas, whereas this study encompassed the entire State of Michigan.

Findings suggest that wealthy school districts do not generally tax their wealth to provide excellence in education, but rather take advantage of their favorable tax position. The Michigan School Finance Study[12] brought into focus the inequities in the sharing of tax burden for public education throughout the State of Michigan. Recommendations for the correction of these inequities through the centralization of educational financing were proposed by the Governor's Commission on Educational Reform.[13]

5. This researcher was interested in what part school elections played in school districts initiating shortened sessions. In 64 per cent of the elections reported, the failure of the election was influential in the board's decision to

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[10]Vincent, op. cit., pp. 8-9.

[11]Ross, op. cit., p. 370.

[12]Thomas, op. cit., pp. 19-20.

[13]The Governor's Commission on Educational Reform, op. cit., p. 9.

place students on shortened days. The degree of dependence is reflected in a phi correlation coefficient of .680.

Inequality of educational opportunity is not the result of school district wealth, as this financial characteristic was found to be insignificant. In general, students were on shortened sessions because local school districts were unwilling to levy a school tax rate comparable to the mean tax rate in the state. These findings give support to the observation reported above, that the lack of educational opportunity found in school districts of shortened sessions is largely due to lack of local financial support.

6. Theoretically, a state-aid formula should equate reward and effort by what is known as the stimulation principle. The scatter diagrams in Figure 1 and Figure 2 visually present the linear relationship between operational millage rates and the total general fund expenditure per student in the test sample. Ideally, the points should lie in a straight line, but this is not the case. An extreme situation can be observed in Figure 2, where one district is providing a $742. educational program at an operational millage rate of 18.9, while another is providing a $588. educational program at an operational millage rate of 32.0 mills.

In school districts on shortened sessions, local school district effort was found to be an unreliable predictor of the level of educational opportunity provided.

Recommendations

This study focused on a test sample of school districts on shortened sessions. It sought relationships between inequality of educational opportunity as it is reflected in shortened sessions, and as it is observed in school district financial characteristics. Though this study revealed relationships, many questions remain unanswered.

1. What common characteristics, other than financial, do school districts on shortened sessions have, that set them apart from other school districts in the state?
2. What reasons are at the root of the apparent lack of school support observed in the test sample? Are school communities apathetic to the needs of education? Does lack of local support reflect dissatisfaction with the school system, administration, school board, teachers, or curriculum? How much importance can be attributed to "taxpayer" revolt?
3. Is lack of educational opportunity in the test sample evidenced by low scores by students on the state administered assessment program?
4. Is the low average teacher's salary found in the test sample reflected in the qualifications of the teaching staff?

The conclusions reached in the exploratory study require expansion and verification by replication in a number of ways:

1. Using data available in future years.

2. Using characteristics other than financial ones in making comparisons.

3. Employing a modified design capable of measuring differences between characteristics through multivariate analysis.

4. Using a longitudinal study spanning several years to test for trends.

Reflections

Study after study has revealed the gross inequities in opportunity that exist in public education. These inequities are found at the national, state, and local levels. Considering the wealth of evidence, there is reason for concern that steps have not been taken sooner to provide every boy and girl in this state with the opportunity to develop his capacities to their full potential.

In Michigan, as in all states, it is well established that the responsibility for the support of education rests in the state legislature. Though public education is a state function, the financing of education is considered a cooperative venture between the state and the local school district. School districts throughout the state must depend upon voted property taxes, one of the most regressive forms of taxation, to provide their share of the financial burden. Because of this antiquated support structure, each year thousands of students are deprived of the opportunity to

share in the amenities that come through education. The people in their communities have simply said "no."

The people of this state should also take a closer look at what is referred to as local control. With school boards spending most of their time working on budgets or planning millage and school bond campaigns, there is a serious question as to what they control.

It is incumbent upon the legislators and the public they represent, that they pick up the tools that are already at their disposal, and make the changes that are necessary. It is the author's opinion that the time has come to centralize the financing of public education at the state level, so that all children will have equal access to an equal educational opportunity, and boards of education can start planning and staffing educational programs to meet the needs of their local communities, which should be their primary concern.

APPENDIX

APPENDIX A

Districts reported on shortened sessions and their matched pairs, 1967-68.

Test Sample				Control Sample			
No.	School Districts	County	Membership	No.	School Districts	County	Membership
1.	Elk Rapids	Antrim	911	1.	Kalkaska	Kalkaska	1,077
2.	Harper Creek	Calhoun	3,140	2.	Springfield	Calhoun	1,767
3.	Marcellus	Cass	980	3.	Lawton	VanBuren	854
4.	Mackinaw City	Cheboygan	268	4.	Pelston	Emmet	615
5.	Iron Mountain	Dickinson	1,097	5.	Kingsford	Dickinson	2,223
6.	North Adams	Hillsdale	779	6.	Pittsford	Hillsdale	874
7.	Lake Linden	Houghton	552	7.	Chassell	Houghton	303
8.	Whittemore-Prescott	Iosco	977	8.	Arenac Eastern	Arenac	623
9.	Adrian	Lenawee	5,952	9.	Tecumseh	Lenawee	3,381
10.	Frazer	Macomb	6,246	10.	Warren Woods	Macomb	7,962
11.	Utica	Macomb	16,696	11.	Warren	Macomb	24,779
12.	Bedford	Monroe	6,123	12.	Monroe	Monroe	8,641
13.	Hesperia	Newago	992	13.	White Cloud	Newago	1,139
14.	Troy	Oakland	5,041	14.	Lamphere	Oakland	5,610
15.	Huron Valley	Oakland	6,201	15.	Walled Lake	Oakland	9,696
16.	Hart	Oceana	1,223	16.	Shelby	Oceana	1,383
17.	Mio-Ausable	Oscoda	595	17.	Hale	Iosco	519
18.	Marlette	Sanilac	1,789	18.	Case City	Tuscola	1,832
19.	Vassar	Tuscola	2,078	19.	Millington	Tuscola	1,928
20.	Chippewa Valley	Macomb	2,337	20.	Clintondale	Macomb	4,493

Districts reported on shortened sessions and their matched pairs, 1968-69.

Test Sample				Control Sample			
No.	School District	County	Membership	No.	School District	County	Membership
1.	Cassopolis	Cass	1,925	1.	Edwardsburgh	Cass	2,150
2.	Lake Linden	Houghton	562	2.	Osceola Twp.	Houghton	344
3.	Lapeer	Lapeer	5,703	3.	Oxford	Oakland	2,626
4.	Frazer	Macomb	6,713	4.	Warren Woods	Macomb	8,561
5.	Utica	Macomb	18,431	5.	Warren	Macomb	27,661
6.	Ludington	Mason	3,486	6.	Mason Co. Central	Mason	1,589
7.	Monroe	Monroe	8,903	7.	Jefferson Cons.	Monroe	2,660
8.	Airport	Monroe	2,977	8.	Jefferson Cons.	Monroe	2,660
9.	Bedford	Monroe	6,049	9.	Mason Cons.	Monroe	2,103
10.	Mio-Ausable	Oscoda	658	10.	Hale	Iosco	550
11.	Hemlock	Saginaw	1,564	11.	Freeland	Saginaw	1,603
12.	Capac	St. Clair	1,424	12.	Armada	Macomb	1,442
13.	Memphis	St. Clair	1,052	13.	Armada	Macomb	1,442
14.	Centerville	St. Joseph	829	14.	White Pigeon	St. Joseph	1,325
15.	Lawton	VanBuren	904	15.	Schoolcraft	Kalamazoo	771
16.	Taylor	Wayne	19,331	16.	Dearborn	Wayne	21,952
17.	VanBuren	Wayne	6,911	17.	Allen Park	Wayne	6,735

Districts reported on shortened sessions and their matched pairs, 1969-70.

Test Sample				Control Sample			
No.	School District	County	Membership	No.	School District	County	Membership
1.	Cassopolis	Cass	1,984	1.	Buchanan	Berrien	2,512
2.	Harrison	Clare	1,520	2.	Farwell	Clare	1,308
3.	Tawas (East)	Iosco	1,964	3.	Oscoda Area	Iosco	4,366
4.	Whittemore-Prescott	Iosco	1,070	4.	Standish-Sterling	Arenac	2,094
5.	Lapeer	Lapeer	6,142	5.	Divison	Genesee	5,403
6.	Hartland	Livingston	1,816	6.	Linden	Genesee	2,096
7.	Howell	Livingston	4,856	7.	Brighton	Livingston	3,402
8.	Ludington	Mason	3,429	8.	Mason Co. Central	Mason	1,701
9.	Monroe	Monroe	9,296	9.	Airport	Monroe	2,962
10.	West. Bloomfield	Oakland	4,779	10.	Bloomfield Hills	Oakland	9,443
11.	Waterford	Oakland	18,503	11.	Pontiac	Oakland	24,872
12.	Memphis	St. Clair	1,102	12.	Yale	St. Clair	1,811
13.	Centerville	St. Joseph	834	13.	Mendon	St. Joseph	850
14.	Highland Park	Wayne	8,233	14.	South Redford	Wayne	7,904
15.	Livonia	Wayne	38,134	15.	Wayne Comm.	Wayne	22,911
16.	Plymouth	Wayne	9,549	16.	VanBuren	Wayne	7,085
17.	Redford Union	Wayne	9,710	17.	South Redford	Wayne	7,904
18.	Taylor	Wayne	20,108	18.	Allen Park	Wayne	6,581
19.	Crestwood	Wayne	5,291	19.	North Dearborn	Wayne	2,741
20.	Westwood	Wayne	5,125	20.	Dearborn Heights	Wayne	5,630
21.	Heintzen	Wayne	4,141	21.	Southgate	Wayne	5,214
22.	Lincoln Park	Wayne	12,240	22.	Wyandotte	Wayne	8,472

APPENDIX B

APPENDIX B

1. Letter sent to districts on shortened sessions requesting their participation in the study.
2. Questionnaire sent to school districts with students on shortened sessions in 1967-68.
3. Questionnaire sent to school districts with students on shortened sessions in 1968-69.
4. Questionnaire sent to school districts with students on shortened sessions in 1969-70.

Heintzen Public School District

THOMAS J. VAUGHAN
SUPERINTENDENT

15100 NORTHLINE
SOUTHGATE, MICHIGAN 48192
TELEPHONE 283-0550

ROBERT L. STIPE
ASSISTANT SUPERINTENDENT

Mr. Phillip E. Runkel, Supt.
Utica Community Schools
52188 Van Dyke
Utica, Michigan 48087

Dear Mr. Runkel:

This letter is written to request your assistance in a study I am conducting on the financial factors which lead to half-day or shortened school day sessions. Specifically the study will focus on school district wealth and expenditures in an attempt to find characteristics the sample districts have in common.

Each school has been carefully paired with a control school using the factors of school size and geographic location. Only forty-six districts in the State of Michigan meet the criterion of this research and your school district is a member of this sample. Due to the limited number of schools in the study sample, it is important that I receive responses from all districts to give validity to the study.

Recognizing that school district central offices are busy in the summer as well as when school is in session, I have pulled data from all other available sources before preparing this questionnaire. I hope that you can fill in the answers to the questionnaire from your own knowledge in five or ten minutes without referrring to school records.

This research is to be used in a PhD. dissertation in Educational Administration. It is, therefore, most necessary that some response be indicated by a return of the questionnaire form.

If you have your Doctorate, congratulations; if not, maybe I can do the same for you sometime.

Sincerely,

QUESTIONNAIRE: SHORTENED SCHOOL DAY SESSIONS

SUPPLEMENTARY INFORMATION FORM

Thomas J. Vaughan
Michigan State University

The Annual Statistical Report of the Utica School District to the Michigan Department of Education indicates your district had 2,363 students on a shortened school day during the 1967-68 school year.

A. Was the reason for putting students on a shortened day the result of:

1. lack of school facilities? yes____ no____
2. lack of operational funds? yes____ no____
3. lack of both funds and facilities? yes____ no____
4. other reasons not listed? yes____ *no____

* If students in your school district were placed on a shortened school day for reasons other than lack of operational funds or lack of facilities please comment:_____

_____

_____

_____(write on back if necessary)_____

B. Did your board of education submit either an operational millage proposal or construction bond proposal to the voters of the district during the Spring or Summer preceding the 1967-68 school year?

yes____ no____

If the same proposals were presented to the voters of the district more than once, just give the results of the last election

in "C" and "D" below.

C. Was the election called for:

1. an operational millage? yes____ no____. If yes, did it pass or fail? passed____ failed____
2. a construction bond proposal? yes____ no____

If yes, did it pass or fail? passed____ failed____

D. Did the results of the election influence the board of education's decision to place students on a shortened school day? yes____ no____

E. What was/or is the approximate length of the school day for students on shortened sessions?

Elementary, hours_____ minutes_____

Secondary, hours_____ minutes_____

F. Were students on shortened sessions returned to full day sessions during the 1968-69 school year?

yes____ no____

G. Did the board of education's decision to return students to full day come as a result of the passage of:

1. an operational millage? yes____ no____
2. a construction bond proposal? yes____ no____
3. other conditions? yes____ *no____

*If students were returned to full day sessions for reasons other than the passage of an operational millage or a construction bond proposal please comment:_____

_____

_____

(write on back if necessary)

Additional comments:_____

_____

Would you be interested in receiving a summary of the findings? yes____ no____

Important: Return this questionnaire in the enclosed self addressed envelope. Do not return to the Heintzen Public School District as I am on leave of absence for the summer.

Thomas J. Vaughan
2400 Trumwood Ave.
Trenton, Michigan 48183

QUESTIONNAIRE: SHORTENED SCHOOL DAY SESSIONS

SUPPLEMENTARY INFORMATION FORM

Thomas J. Vaughan
Michigan State University

The Annual Statistical Report of the Memphis Community School District to the Michigan Department of Education indicates your district had 705 students on a shortened school day during the 1968-69 school year.

A. Was the reason for putting students on a shortened day the result of:

1. lack of school facilities? yes____ no____
2. lack of operational funds? yes____ no____
3. lack of both funds and facilities? yes____ no____
4. other reasons not listed? yes____ *no____

* If students in your school district were placed on a shortened school day for reasons other than lack of operational funds or lack of facilities please comment:_____

_____

_____

_____ (write on back if necessary)

B. Did your board of education submit either an operational millage proposal or construction bond proposal to the voters of the district during the Spring or Summer preceding the 1968-69 school year?

yes____ no____

If the same proposals were presented to the voters of the district

more than once, just give the results of the last election in "C" and "D" below.

C. Was the election called for:

1. an operational millage? yes____ no____. If yes, did it pass or fail? passed____ failed____
2. a construction bond proposal? yes____ no____

If yes, did it pass or fail? passed____ failed____

D. Did the results of the election influence the board of education's decision to place students on a shortened school day? yes____ no____

E. What was/or is the approximate length of the school day for students on shortened sessions?

Elementary, hours_____ minutes_____

Secondary, hours_____ minutes_____

F. Were students on shortened sessions returned to full day sessions during the 1969-70 school year?

yes____ no____

G. Did the board of education's decision to return students to full day come as a result of the passage of:

1. an operational millage? yes____ no____
2. a construction bond proposal? yes____ no____
3. other conditions? yes____ *no____

* If students were returned to full day sessions for reasons other than the passage of an operational millage or a construction bond proposal please comment:_____

_____

_____

(write on back if necessary)

Additional comments:_____

_____

_____

_____

_____

Would you be interested in receiving a summary of the findings?

yes____ no____

Important: Return this questionnaire in the enclosed self addressed envelope. Do not return to the Heintzen Public School District as I am on leave of absence for the summer.

Thomas J. Vaughan
2400 Truwood Ave.
Trenton, Michigan 48183

QUESTIONNAIRE: SHORTENED SCHOOL DAY SESSIONS

SUPPLEMENTARY INFORMATION FORM

Thomas J. Vaughan
Michigan State University

I have received information from either your County Intermediate School District or the Michigan Department of Education that a segment of your school district's student body were on a shortened school day during the past school year.

A. Was the reason for putting students on a shortened day the result of:

1. lack of school facilities? yes____ no____
2. lack of operational funds? yes____ no____
3. lack of both funds and facilities? yes____ no____
4. other reasons not listed? yes____ *no____

* If the students in your school district were placed on a shortened school day for reasons other than lack of operational funds or lack of facilities please comment:_____

_____

_____

_____ (write on back if necessary) _____

B. Did your board of education submit either an operational millage proposal or construction bond proposal to the voters of the district during the spring or summer preceding the 1969-70 school year?

yes____ no____

If the same proposals were presented to the voters

of the district more than once, just give the results of the last election in "C" and "D" below.

C. Was the election called for:

1. an operational millage? yes____ no____. If yes, did it pass or fail? passed____ failed____

2. a construction bond proposal? yes____ no____

If yes, did it pass or fail? passed____ failed____

D. Did the results of the election influence the board of education's decision to place students on a shortened school day? yes____ no____

E. What was/or is the approximate length of the school day for students on shortened sessions:

Elementary, hours_____ minutes_____

Secondary, hours _____ minutes_____

F. Will students on shortened sessions be returned to full day sessions during the 1970-71 school year?

yes____ no____

G. Did the board of education's decision to return students to full day come as a result of the passage of:

1. an operational millage? yes____ no____

2. a construction bond proposal? yes____ no____

3. other conditions? yes____ *no____

*If students were returned to full day sessions for reasons other than the passage of an operational millage or a construction bond proposal please comment:_____

_____

_____

_____

_____ (write on back if necessary)

Additional comments: _____

_____

_____

_____

_____

Would you be interested in receiving a summary of the findings? yes____ no____

Important: Return this questionnaire in the enclosed self addressed envelope. Do not return to the Heintzen Public School District as I am on leave of absence for the summer.

Thomas J. Vaughan
2400 Truwood Ave.
Trenton, Michigan 48183

APPENDIX C

SCHOOL YEAR 1967-68

School District	Av. Teacher's Salary[a] T-Sample[h]	C-Sample[i]	Inst. Salary/Student[b] T-Sample	C-Sample	Total Gen'l Fund Exp./St.[c] T-Sample	C-Sample
1	3,898.00	7,475.00	343.59	426.89	479.96	572.28
2	8,790.00	8,072.00	432.60	581.45	518.16	774.83
3	7,064.00	7,447.00	463.93	420.02	671.50	652.12
4	6,941.00	7,594.00	464.01	406.50	601.60	652.12
5	8,136.00	8,311.00	438.71	449.01	555.70	602.94
6	6,684.00	7,315.00	421.89	413.42	534.42	567.83
7	5,408.00	3,060.00	383.77	417.55	538.76	540.90
8	7,544.00	6,929.00	410.99	355.96	542.76	494.03
9	7,363.00	7,484.00	970.91	446.65	604.12	576.35
10	7,858.00	8,049.00	476.01	484.40	597.38	596.47
11	7,852.00	7,870.00	477.10	524.59	598.67	690.34
12	7,646.00	8,540.00	462.11	528.08	573.79	634.10
13	6,592.00	7,272.00	367.03	380.26	548.75	521.67
14	8,544.00	8,083.00	616.53	606.68	761.77	746.22
15	7,464.00	8,125.00	487.38	495.13	600.16	614.03
16	8,093.00	6,743.00	370.64	340.84	498.86	482.81
17	6,363.00	6,281.00	472.53	355.08	625.71	543.81
18	8,011.00	7,193.00	384.29	370.00	542.07	509.11
19	7,800.00	6,460.00	356.28	357.68	474.50	499.11
20	7,661.00	7,939.00	467.12	517.30	628.21	654.55

SCHOOL YEAR 1968-69

1	7,693.00	7,652.00	379.31	363.11	649.83	581.87
2	6,925.00	6,964.00	354.27	321.51	613.41	564.15
3	9,168.00	9,277.00	360.81	403.10	578.88	581.71
4	8,396.00	9,056.00	415.19	446.20	597.98	606.55
5	8,977.00	9,016.00	435.95	495.79	647.77	741.88
6	9,118.00	8,382.00	429.66	374.83	611.34	600.04
7	9,591.00	8,981.00	504.16	419.89	711.09	626.52
8	8,214.00	8,981.00	306.84	419.89	527.85	626.52
9	8,086.00	8,242.00	399.30	436.42	587.52	681.18
10	6,729.00	7,163.00	430.03	326.27	742.44	576.88
11	8,406.00	8,400.00	351.22	371.71	553.61	565.77
12	9,007.00	9,837.00	364.06	388.37	565.51	640.64
13	8,933.00	9,837.00	310.77	388.37	532.99	640.64
14	7,359.00	9,007.00	378.28	405.51	628.90	648.15
15	7,601.00	7,385.00	387.96	399.12	580.22	614.67
16	10,531.00	11,035.00	456.95	671.48	634.82	1,079.63
17	8,715.00	9,017.00	466.89	484.47	733.74	678.45

SCHOOL YEAR 1969-70

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Variables - [a]Average teacher's salary.

[b]Instructional salary expenditure per student.

[c]Total general fund expenditure per student.

[d]Total millage rate.

[e]Operational millage rate.

[f]Debt retirement millage rate.

[g]State equalized valuation per student.

[h]T-Sample, Test Sample of schools on shortened sessions.

[i]C-Sample, Control Sample of school districts on full-day sessions with school district size and geographic location controlled.

SCHOOL YEAR 1967-68

Total Millage[d]		Operational Millage[e]		Debt Retirement Millage[f]		State Eq. Val./Student[g]	
T-Sample	C-Sample	T-Sample	C-Sample	T-Sample	C-Sample	T-Sample	C-Sample
13.83	16.53	12.23	11.93	1.60	4.60	232.27	167.55
28.60	33.69	19.80	29.70	8.80	3.99	75.11	138.54
23.00	19.63	17.15	15.68	5.12	3.95	101.43	148.56
15.50	18.00	13.00	18.00	2.50	.00	277.67	140.00
22.90	23.50	18.60	19.10	3.69	4.40	133.17	104.78
20.82	22.32	15.82	18.32	5.00	4.00	76.86	76.18
15.30	16.05	15.30	16.05	.00	.00	151.98	94.19
14.50	11.50	11.50	11.50	3.00	.00	116.81	91.28
25.20	21.62	20.20	16.50	5.00	5.12	131.56	137.28
31.69	27.10	24.09	17.61	7.60	9.50	98.77	90.42
32.61	26.61	25.61	18.61	7.00	8.00	131.52	167.13
21.52	20.84	16.84	17.84	4.68	3.00	76.64	171.03
27.80	21.00	18.00	13.00	9.80	8.00	63.65	86.37
29.60	39.60	22.60	32.60	7.00	7.00	182.07	91.82
30.60	27.20	23.60	20.20	7.00	7.00	108.84	125.65
17.20	19.10	10.00	13.00	7.20	6.10	94.74	71.91
24.85	14.50	17.85	12.50	7.00	2.00	169.91	196.53
20.00	19.80	17.00	14.00	3.00	5.80	104.72	110.19
20.60	19.82	14.00	10.00	6.60	9.82	105.40	66.44
31.61	32.00	24.61	25.00	7.00	7.00	108.13	76.72

SCHOOL YEAR 1968-69

25.30	23.00	18.80	18.00	6.50	5.00	131.04	88.10
15.30	18.30	15.30	18.30	.00	.00	181.55	97.04
26.02	30.11	19.02	22.11	7.00	8.00	100.49	108.99
31.64	27.88	24.04	17.61	7.60	10.28	103.06	95.57
33.27	33.61	26.27	25.61	7.00	8.00	137.16	168.96
20.75	22.50	17.75	19.00	3.00	3.50	164.40	98.75
30.30	29.80	21.30	16.80	9.00	4.18	174.22	168.36
16.30	29.80	14.60	16.80	1.50	4.18	108.66	168.36
36.73	20.50	32.05	16.80	4.68	3.50	80.66	183.59
25.85	13.08	18.85	12.00	7.00	1.00	162.02	295.21
21.05	24.05	15.05	17.05	6.00	7.00	146.91	100.92
21.25	22.26	16.75	21.61	4.50	.65	105.52	144.53
24.75	22.26	17.75	21.61	7.00	.65	81.58	144.53
23.30	20.33	20.80	16.00	2.50	4.33	123.60	172.72
23.57	28.30	19.68	22.00	3.89	6.30	142.49	120.66
25.70	23.60	21.90	22.90	3.80	.75	84.66	384.38
28.75	34.00	24.90	31.90	3.85	2.10	185.90	117.00

SCHOOL YEAR 1969-70

25.30	29.25	18.60	25.25	6.50	4.00	141.84	156.31
17.00	27.00	16.00	24.50	1.00	2.50	212.54	234.73
14.54	13.25	13.50	12.00	1.04	1.25	215.70	113.40
15.50	17.25	12.50	17.25	3.00	.00	167.62	112.83
26.21	26.21	19.21	16.53	7.00	9.68	118.51	91.82
27.75	29.98	23.75	22.28	4.00	7.70	148.07	109.22
27.95	28.25	21.25	21.25	6.69	7.00	140.88	134.64
23.88	23.39	20.88	19.89	3.00	3.50	173.64	100.53
24.66	17.80	21.41	17.80	3.25	.00	177.88	114.89
36.43	39.66	26.23	31.63	10.20	8.03	159.49	236.83
32.63	27.09	24.63	24.63	8.00	2.46	114.41	248.72
35.74	24.22	28.74	19.22	7.00	5.00	82.63	111.42
29.06	25.40	26.56	22.10	2.50	3.30	133.20	128.00
27.05	29.20	21.60	26.40	5.45	2.80	228.88	265.52
35.97	43.30	28.90	36.30	7.07	7.00	167.45	117.29
35.05	27.25	24.15	23.90	10.90	3.85	219.47	195.51
40.90	29.20	35.90	26.40	5.00	2.80	114.36	265.52
35.58	34.00	31.88	31.90	3.70	2.10	96.03	144.66
37.40	37.90	30.40	30.90	7.00	7.00	134.86	146.49
29.95	36.75	24.95	27.90	5.00	8.25	136.36	75.46
32.45	35.90	25.90	28.90	6.55	7.00	112.40	131.57
27.67	28.26	23.90	25.40	3.77	2.86	126.00	197.33

BIBLIOGRAPHY

BIBLIOGRAPHY

Anderson, C. Arnold., and Foster, Philip J. "Discrimination and Inequality in Education." Sociology of Education. XXVIII. Fall, 1964.

Ayers, Leonard P. An Index Number for State School Systems. New York: Russell Sage Foundation, 1920.

Bailey, Stephen K., et al. Schoolmen and Politics; A Study of State Aid to Education in the Northeast. Syracuse, N. Y.: Syracuse University Press, 1963.

Benson, Charles S. The Economics of Public Education. Boston: Houghton Mifflin Company, 1961.

_____. The Cheerful Prospect: A Statement on the Future of Public Education. Boston: Houghton Mifflin Company, 1965.

_____. State and Local Fiscal Relationships in Public Education in California. Sacramento: Senate of the State of California, 1965.

_____. "Economic Problems of Education Associated with Collective Negotiations." The Changing Employment Relationship in Public Schools. Ithaca, N. Y.: New York School of Industrial and Labor Relations, Cornell University, 1968.

Blaker, Harve., Director of the Research Staff, et al. Citizens' Advisory Committee. Michigan Tax Study. Lansing, Michigan: Speaker-Hines and Thomas, Inc., 1959.

Brown v. Board of Education, 347 U. S. 294, 1955.

Burke, Arvin J. Defensible Spending in the Public Schools. New York: Teachers College, Columbia University, 1943.

Burkhead, Jesse. Public School Finance--Economics and Politics. Syracuse, N. Y.: Syracuse University Press, 1964.

Cline, Denzel C., and Taylor, Milton C. Michigan Tax Reform. East Lansing: Institute for Community Development and Services, Michigan State University, 1966.

Coleman, James S., et al. Equality of Educational Opportunity. Washington, D.C.: U. S. Government Printing Office, 1966.

Conant, James B. The American High School Today. New York: McGraw-Hill, 1959.

Conner, Forrest E. "Higher Pay-Greater Productivity: Don't Bet on It." Hot Line, II, No. 11 (November, 1969), 3.

Constitution of the United States, 10th Amendment.

Constitution of the United States, 14th Amendment.

Cornick, Chairman, et al. Michigan Tax Survey. Detroit: 1952.

Corwin, Ronald G. "Militant Professionalism, Initiative and Compliance in Public Education." Sociology of Education, XXVIII (Summer, 1965), 313-314.

Council of State Governments. The Forty-Eight State School Systems. Chicago: Council of State Governments, 1949.

Cubberley, Ellwood P. School Funds and Their Apportionment. New York: Teachers College, Columbia University, 1906.

_____. State School Administration. New York: Houghton-Mifflin Company, 1927.

Dewey, John. The School and Society. Chicago: University Press, 1900.

Donovan, Bernard E. "Speaking for Management." Symposium on Collective Bargaining vs. Professional Negotiations." School Management, VII (November, 1965).

Educational Policies Commission. The Structure and Administration of Education in American Democracy. Washington, D.C.: Educational Policies Commission, 1938.

Edward, Newton. The Courts and Public Schools. Rev. Ed. Chicago: University of Chicago Press, 1955.

Ferrell, D. T. Relation Between Current Expenditure and Certain Measures of Educational Efficiency in Kentucky County and Graded School Systems. Nashville: George Peabody College for Teachers, 1936.

Flanagan, John C., et al. A Survey and Follow-up Study of Educational Plans and Decisions in Relation to Aptitude

Patterns: Studies of the American High School. Pittsburgh: University of Pittsburgh, 1962.

Fowlkes, John Guy., and Watson, George E. "A Report on State Financial Support and Local Educational Planning." University of Chicago, 1954. (Mimeographed.)

Garvue, Robert J. Modern Public School Finance. Toronto: Collier-MacMillan, Canada, Ltd., 1969.

Goergen, Joseph H., and Keough, John J. "Issues and Outcomes of Teachers' Strikes, 1955-65." Unpublished Ph.D. and Ed.D. dissertation, St. Johns' University, Jamaica, New York, 1967.

Hamilton, Robert R., and Mort, Paul R. The Law and Public Education. 2nd ed. Brooklyn, N. Y.: The Foundation Press, 1959.

Harrison, Forrest W., and McLoone, Eugene P. Profiles in School Support. Washington, D.C.: U. S. Department of Health, Education, and Welfare, Office of Education, 1965.

Hays, William L. Statistics. New York: Holt, Rinehart and Winston, 1963.

Holmstedt, Raleigh W. State Control of Public School Finance. Bulletin of the School of Education. Vol. 16. Bloomington: Indiana University, 1932.

Horton, Daniel B., Jr. "An Analysis of the Relationship of Per Pupil Expenditure Levels and School Size with North Central Evaluations." Unpublished Ed.D. dissertation, Indiana University, 1968.

James, H. Thomas. Can Urban Schools be Managed? Consultants' Papers, The White House Converence on Education, July 20-21, 1965.

Johns, Roe L., and Morphet, E. L. Financing the Public Schools. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1960.

Keppel, Francis. The Necessary Revolution in American Education. New York: Harper and Row, 1966.

Kilkenny, Roy O. "Teacher Priorities for Professional Negotiations." Unpublished Ed.D. dissertation, Colorado State College, 1969.

Kite, Robert H., Jr. "A Study to Determine the Degree of Influence Selected Factors Had in Causing Teacher Strikes and to Determine the Degree to Which These Factors Were Present in School Districts in Which Teacher Strikes Were Averted." Unpublished Ph.D. dissertation, University of Mississippi, 1964.

Knapp, Henry. "A Tribute to the 'Real' Fathers." Phi Delta Kappan, LXIL (June, 1968), 575-577.

Lasker, Morris E. "The Influence of Teacher Collective Bargaining on the Quality of Education: Observations of a Board Negotiator." The Changing Employment Relationship in Public Schools. Ithaca, N. Y.: New York School of Industrial and Labor Relations, Cornell University, 1968.

Love, Thomas M. "The Impact of Teacher Negotiations on School System Decision-Making." Unpublished Ph.D. dissertation, University of Wisconsin, 1968.

Mayeske, George W., et al. "Correlational and Regression Analyses of Differences Between the Achievement Levels of Ninth Grade Schools from the Educational Opportunities Survey." Washington, D.C.: National Center for Educational Statistics, 1968. (Mimeographed.)

Michigan Constitution. Article VIII, Sec. 2.

Michigan Department of Education. State of Michigan General School Laws. Lansing: State Board of Education, 1966. 1970 Supplement to the "Child Accounting Rules" 340.14.

_____. Analysis of Michigan Public School Revenues and Expenditures for 1967-68, 1968-69. Lansing: Michigan Department of Education, 1969.

_____. Ranking of Michigan Public High School Districts by Selected Financial Data, 1967-68. Lansing: Michigan Department of Education, 1968.

Moehlman, Arthur B. School Administration. New York: Houghton-Mifflin Company, 1940.

Mort, Paul R.; Reusser, Walter C.; and Polley, John W. Public School Finance. 3rd ed. New York: McGraw-Hill Book Company, 1960.

Moskow, Michael H. "Teacher Organizations: An Analysis of the Issues." Teachers College Record, (February, 1965), 455.

National Education Association. Economic Status of the Teaching Profession, 1967-68. Research Report 1968-R4. Washington, D.C.: National Education Association, 1968.

Norton, John K. The Ability of States to Support Education. Washington, D.C.: The National Education Association, 1926.

Perry, Charles R., and Wildman, Wesley A. "The Impact of Teacher Bargaining on the Schools." Collective Action by Public School Teachers, IV. Washington, D.C.: Government Printing Office, Office of Education, U. S. Department of Health, Education, and Welfare, 1968.

Pikulinski, Jerome R., et al. "Fact-Finding in the Public Employment Sector within the State of Michigan, 1966-1968." Report of a joint study; The Michigan Department of Labor, The Employment Relations Commission, and Michigan State University, 1969. (Mimeographed.)

Polley, Ira. State Superintendent of Public Instruction. Statement presented to the State Board of Education, July 27, 1966.

Rehmus, Charles M. "Public Management and Collective Negotiations." Collective Negotiations and Educational Administration. Columbus, Ohio: The University Council for Educational Administration, 1966.

Report of the Tax Study Commission. Lent D. Upson, Director and Chairman. Detroit, Michigan: 1939.

Ross, Donald H. Administration for Adaptability. New York: Metropolitan School Study Council, Institute of Administrative Research, Teachers College, Columbia University, 1958.

Sackley, Arthur. "Change in Teachers' Salaries, 1963 to 1965." Monthly Labor Review. LXXXVIII, December, 1965.

_____. "Long-Term Trends in Urban Teachers' Compensation." Monthly Labor Review. LXXXIX, November, 1966.

Steele, Marilyn H. "Has Bargaining Contributed to Instructional Improvement in Michigan Schools." Unpublished Ph.D. dissertation, Michigan State University, 1969.

Stinnett, T. M. Turmoil in Teaching. New York: MacMillan Company, 1968.

Strayer, George D., and Haig, Robert M. Financing of Education in the State of New York. New York: The Macmillan Company, 1923.

The Governor's Commission on Educational Reform. Governor William G. Milliken, chairman, et al. 1969.

Thomas, J. Alan. School Finance and Educational Opportunity in Michigan: Michigan School Finance Study. Lansing: Michigan Department of Education, 1968.

Vincent, William S. Emerging Patterns of Public School Practices. New York: Bureau of Publications, Teachers College, Columbia University, 1945.

Wise, Arthur E. Rich Schools Poor Schools. Chicago: The University of Chicago Press, 1968.

Woodring, Paul. "On the Cause of Teacher Discontent." Saturday Review, L (October, 1967), 61-62.