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# A Comparative Study of Factors Related to Innovation in Selected Public School Districts of Southern Lower Michigan

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# A COMPARATIVE STUDY OF FACTORS RELATED TO INNOVATION IN SELECTED PUBLIC SCHOOL DISTRICTS OF SOUTHERN LOWER MICHIGAN

by

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## Purpose

The purpose of the study was to determine if there were significant differences in the characteristics of selected innovative and non-innovative public school districts. Five characteristics chosen for study were: (1) annual per-pupil financial expenditures, (2) superintendent status, (3) open-mindedness of administrators, (4) teacher age and preparation level, and (5) goal congruence among teachers, administrators, and board of education members.

## Procedure

Twenty public school systems were studied. Ten districts were nominated as "innovative" by a seventy-member expert panel from the 183 districts of southern lower Michigan in the 2,000 to 10,000 enrollment category, according to specific established criteria. Innovativeness was defined as the existence of specific programs resulting in or from organizational change. A group of

ten "non-innovative" districts, matching the "innovative" in enrollment and taxable wealth per pupil, was selected from those receiving no mention by the panel. Selection and grouping were verified both by use of the 1964 Five Years of Progress survey data and by actual visit of the districts by the investigator.

Data regarding financial expenditures were obtained from the State Department of Education. Superintendent status was measured through interview data regarding salary, education level, size of previous district, and organizational memberships and offices. The Rokeach Dogmatism Scale was used to measure administrator open-mindedness and teacher age and preparation data were obtained from district personnel records. Goal congruence was determined by administering a goal-ordering exercise to a random sample of teachers and all administrators and board of education members.

## Findings

Innovative districts, when compared with Non-Innovative districts, were found to: (1) have made greater per-pupil financial expenditures during the 1968-69 school year ($p = .10$), (2) employ superintendents of greater status ($p = .025$), (3) employ younger teachers ($p = .001$) and also more highly prepared teachers ($p = .15$), (4)

employ more open-minded administrators ($p = .15$), and (5) be little different in the degree of teacher-administrator and teacher-board member goal agreement ($p = .50$) and only slightly higher in administrator-board member goal agreement ($p = .25$).

## Conclusions

There appear to be differences in the characteristics of innovative and non-innovative public school districts: (1) Innovative district residents exhibited a willingness to support the criterion programs and the concomitant high level of financial expenditures, (2) Greater superintendent status appears to be associated with the existence of the criterion programs, (3) More open-minded administrators appear to be associated with high status superintendents and a higher degree of district innovativeness, (4) Innovative systems employ generally younger teachers and also more highly prepared teachers, and (5) A generally high level of goal agreement exists among teachers, administrators, and board members of all districts studied, however, slightly greater administrator-board member agreement appears to be associated with a higher degree of innovativeness.

## ACKNOWLEDGMENTS

I particularly wish to thank Dr. Roland Strolle for his counsel and understanding as Chairman of my Doctoral Committee prior to his leaving the university and Dr. William Coats for his generous contribution of time, support, and guidance as Chairman during the final phases of the program. Appreciation is also extended to Dr. Edward Heinig, Dr. Donald Horning, and Dr. Albert Jackman, the other Committee members, for their many valuable suggestions and support.

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The study would not have been initiated, and certainly not carried to completion, without the patience, understanding, and encouragement of my family. I owe particular gratitude to my wife, Ada, and sons, Steven and Vernon, for their wholehearted support given without reservation.

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# INTRODUCTION TO THE STUDY

## Introduction

It is generally accepted among educators that change in school systems is necessary in order to merely maintain the "status quo" with a rapidly-changing American society. It is recognized by many educational leaders that in addition to gradual changes, more extensive changes in the form of innovations are frequently perceived as desirable in order to remediate a particular problem, utilize pertinent research findings, or perhaps achieve a more effective and efficient school district operation.

Educational leaders frequently meet resistance in attempting to introduce and implement innovations. Authorities and researchers offer varied and sometimes contradictory advice to the educational leader regarding how he might most effectively proceed with innovation and change. It would appear from such various and contradictory bits of advice that the typical school district superintendent might find it difficult to realize anything definite for his guidance and direction. Attempts must be made to lend research support for existing hunches, assumptions, and guesses of experts and the clarification of

contradictory findings of researchers regarding the many facets of the innovation predicament. Determining if school systems in which successful innovation and change take place are characterized by measurable and significant levels of particular factors would tend to add clarity to what seems a confusing state of affairs.

Some writers contend that attempts at innovation and change tend to be more successful in school systems characterized by "organizational health." An innovator is less likely to meet resistance in his attempts to innovate if elements of this "health" such as congruence of goals, youthful and well-prepared teachers, power equalization, prestigious leader, effective communications, etc., obtain for his system.

Characteristics of the "healthy" innovative climate have been researched and discussed at some length. Some characteristics are only assumed to be associated with innovativeness. Other characteristics are accepted as related to innovation in educational organizations on the basis of research done some years ago in non-educational situations. Some characteristics are generally assumed to be related to innovativeness though research data are contradictory. In short, an attempt to clarify the relationships of the characteristics of "organizational health" to the success of innovation attempts

would seem to be needed. It would appear further that the school superintendent might benefit from the insight and direction he might derive from such research in his efforts to achieve a climate conducive to successful innovation. A close look at school systems in which innovation attempts have been successful might provide the necessary data. It was this contention that spurred the design and development of the study discussed here.

The objective of this study was to determine if there were significant differences in the characteristics of selected innovative and non-innovative public school districts within the thirty-four counties of southern lower Michigan. The five characteristics of "organizational health" chosen for study included annual per-pupil financial expenditures, the status of superintendents, the degree of open-mindedness of administrative staff members, the age and level of professional preparation of teaching staffs, and the degree of congruence of goals held by members of boards of education, administrators, and teachers.

It seems widely accepted that extensive innovation and change cannot occur unless subject school districts are in the more wealthy category. It is held that only minor alterations happen unless large amounts of financial support are available. This study sought to

determine if district wealth was related to the extent of change.

Some writers in the field contend that other characteristics are of less importance in the consideration of change efforts than the status of the chief administrator. If the superintendent of a given district is young, highly educated, well-paid, cosmopolitan in his orientation, rather than provincial, and moves into his position from a relatively large school district, then he possesses the status necessary to sway the thinking of his subordinates and facilitate change. The status of the chief administrator was investigated as a key characteristic related to organizational change and innovation.

Previous research has resulted in the conclusion that innovation and change in individual schools and school systems would not happen if building administrators were not receptive to new ideas and change. Therefore, it would follow that those districts in which extensive and fundamental organizational changes had taken place would employ building and other administrators more open-minded and receptive.

Similar reasoning regarding adaptability has been applied by various authors to the teaching staffs of innovative districts. This study sought to determine

if these writers were supported in their assumptions that organizational change takes place more readily in those school districts in which the members of the teaching staffs are predominantly young and particularly well-prepared professionally.

Finally, leadership has been variously defined as resulting in organizational change and the mutual acceptance of goals. If to be innovative is accepted as resulting in fundamental organizational change, then it was thought that in such innovative public school districts an investigation would reveal greater agreement among board of education members, administrators, and teachers concerning the relative importance of the more common goals of American education.

## Hypotheses

Relative to the reasoning outlined above, the following research hypotheses were formed:

$H_1$ Innovative school districts are characterized by significantly greater annual per-pupil financial expenditures than non-innovative districts.

$H_{1a}$ Innovative school districts are characterized by significantly higher operational millage rates than are non-innovative districts.

$H_{1b}$ Innovative school districts are characterized by a history of financial support by their communities significantly more

consistent than non-innovative districts.

$H_2$ Innovative school districts are characterized by superintendents of significantly greater status than are non-innovative districts.

$H_{2a}$ Innovative school districts are characterized by significantly younger superintendents than are non-innovative districts.

$H_{2b}$ Innovative school districts are characterized by superintendents with significantly shorter tenure in their positions than are non-innovative districts.

$H_3$ Innovative school districts are characterized by significantly more open-minded (less dogmatic) administrative staff members than are non-innovative districts.

$H_{4a}$ Innovative school districts are characterized by significantly younger teaching staffs than are non-innovative districts.

$H_{4b}$ Innovative school districts are characterized by teaching staffs with significantly higher levels of professional preparation than non-innovative districts.

$H_5$ Innovative school districts are characterized by a significantly greater degree of congruence of goals among members of boards of education, administrators, and teachers than are non-innovative districts.

## Definition of Terms

Terms of key importance in forming research hypotheses or those which have been used in a particular limited sense in the study are defined below:

1. "School Districts:" All public school districts within the lower thirty-four counties of southern lower

Michigan (See Appendix, Exhibits #1 and #2) which enrolled more than 2,000 but less than 10,000 pupils during the 1968-69 school year.[1]

2. "Innovative School Districts:" Public school districts from the population described above, most frequently nominated as innovative by a panel of experts, according to criteria provided by the investigator, and found to meet the same criteria during a visit by the investigator.

3. "Non-Innovative School Districts:" Public school districts not nominated as innovative by the panel of experts, according to criteria provided by the investigator, and found not to meet the same criteria during a visit by the investigator.

4. "Current Expense of Education Per Pupil:" The total per-pupil expenditure of budget categories 1100 (Elementary Education), 1200 (Secondary Education), 1300 (Special Education), 1400 (Summer School), 1500 (Adult Education), 1600 (Community College), 1900 (Unclassified Instructional), 2100 (Administration), 2200 (Attendance), 2300 (Health Services), 2400 (Pupil Transportation), 2500 (Operation), 2600 (Maintenance), and 2700 (Fixed Charges) as determined from the Annual Financial Report, Form B,

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1 _____, Michigan Public School District Data, 1968-1969. Lansing: Michigan Education Association, 1969. pp. xvii - 67.

filed by legal necessity by all public school districts of the State of Michigan with their respective intermediate district superintendents each year.

5. "Administrative Staff Members:" Those employees of the public school districts who occupied principalships or assistant principalships of buildings or other administrators, excluding superintendents, in whose positions line authority and responsibility were vested.

6. "Superintendent Status:" A single numerical factor, or rating, representing the weighted elements of salary, professional preparation, enrollment of district of previous employment, professional organization memberships, nonprofessional organization memberships, professional organization offices held, and nonprofessional organization offices held.

7. "Dogmatism or Open-Mindedness:" A hypothetical construct designating the extent to which a person's belief system is open or closed, as measured by the Rokeach Dogmatism Scale, Form E. Rokeach provides a detailed discussion of the concept.[1]

8. "Teacher:" Full-time employees of the public school districts devoting half or more of their time to classroom teaching of any subjects commonly found in

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[1]Rokeach, Milton, The Open and Closed Mind. New York: Basic Books, Inc., 1960. pp. xvi - 362.

public education, including special education.

9. "Age of Teachers:" The number of years elapsing between the year of the teachers' births and the year 1969.

10. "Level of Professional Preparation:" The college degree possessed by the individual subject teacher, plus the number of semester hours beyond it earned from an accredited institution of higher learning.

11. "Goals:" The objectives of American education as outlined by the 1956 White House Conference on Education.[1]

12. "Panel of Experts:" Seventy persons representing the Michigan Department of Public Instruction, Intermediate District Superintendents, the Michigan Association for Supervision and Curriculum Development Board of Directors, the North Central Accreditation Association, and others (See Appendix, Exhibit #3).

## Importance of the Study

The importance of this research project lies in the fact that it is an attempt, through comparative study, to provide insights into the relationship between the five

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[1]Stone, James C. and Frederick W. Schneider, Foundations of Education. New York: Thomas Y. Crowell Co., 1965. pp. 34 - 35.

characteristics chosen and successful attempts at organizational change. It is an attempt to lend research support to some existing assumptions as well as to try to clarify contradictory findings of many researchers regarding some specific facets of the innovation dilemma.

The study is deemed valuable if it yields data providing for any insight into the "organizational health" concept. If, as some writers contend, the educational leader is apt to meet less resistance to change efforts in the school system characterized by congruence of goals, wealth, a high-status leader, open-minded administrators, and a youthful and well-prepared teaching staff, this study would be of value in indicating the relationship of the five factors to fundamental organizational change. It would follow that if the superintendent of a school district desired to be innovative, and if the findings of this study supported the assumptions, it would be of value to him in examining the school system and analyzing the state of its "health."

Finally, perhaps the importance of the study lies predominantly in the fact that it attempts to provide research evidence with the strengths and relevance suggested by Guba.[1] He contends that research findings

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[1]Guba, Egon, "Related Research and Development," a section of a research proposal. Columbus, Ohio: Ohio State University, 1965. (mimeographed)

which are directly related to innovation and change in education are few. Most research in the area of innovation and change has been done with individual acceptors and rejectors, not with an agent of a bureaucratic social system. Studies have centered on individual decision-making, not on collective decisions as in educational systems. In many studies whose findings have been applied to educational change there have been institutionalized information sources unknown in the field of education. Furthermore, many research studies have been conducted outside education in the presence of institutionalized change agents (county extension agents) concerned with achieving the acceptance of thoroughly field-tested innovations (products of agricultural field experiment station programs). As neither of these factors exist in education, such research findings are of limited utility. This study was designed to provide findings truly relevant to public educational systems.

In summary, the study attempts to provide insights into school system characteristics which may be related to innovation and organizational change. There appears to be little question that the educational leader may be able to create the conditions for successful innovation.[1]

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[1]Carlson, Richard O., Change Processes in the Public Schools. Eugene, Oregon: The Center for the Advanced Study of Educational Administration, 1958. pp. 60 - 61.

The questions remain: Are the five characteristics related to innovation and change? Are some characteristics associated with change to a greater extent than are others? Might there be change in school systems regardless of the status of such characteristics?

## Scope and Limitations of the Study

The study was limited by factors common to research of this type, such as the inability to manipulate independent variables and the lack of control of possible nuisance variables, due to the use of field research design. (Recognition is given the more important of these factors in recommendations for future research.) Also it was subject to some specific and unique limitations:

1. The validity of the data collected was limited by the instrumentation and procedures utilized. Bias may have entered the responses of the interviewees as the nature of the research was explained. Complete control over obtaining responses was lacking as mailed returns were requested. However, the limitations were realized and attempts were made to minimize their influence. Written instructions were subjected to constant revision, interviewees were assured of anonymity and identical procedures were utilized to secure the mailed responses of all groups.

2. Seven selected factors, including salary

professional preparation, enrollment of previous district of employment, professional organization memberships, nonprofessional organization memberships, professional organization offices held, and nonprofessional organization offices held were combined in a single superintendent status rating. This composite of elements was not intended to be exhaustive.

3. The results of the study should be interpreted as an indication of an association between the five characteristics and organizational change and innovation within the public school districts studied, but not as a direct causal relationship between these variables. As the research was of an ex post facto nature and sought only to investigate the extent of the existence of various elements at a given time, little may be implied from the data concerning the dynamics of the elements over an extended period. The only question to be answered is: Are there significant increases or decreases in the levels of the five factors when related by comparative study to significant differences in the extent of innovation and organizational change?

## Overview

Chapter I develops a frame of reference and a rationale for the entire study. Included are the introduction, a discussion of the problem, a general statement of the

assumptions to be examined, definition of terms, the importance of the study, hypotheses, and the scope and limitations of the study.

A review of related literature and research is presented in Chapter II. This includes a specific statement of the hypotheses to be investigated and their derivation from the literature. Also there is built a theoretical basis for investigating the variables being considered, drawing upon conclusions from related research of the relationship of innovation and change and selected school system characteristics.

In Chapter III the research procedures and methodology employed are presented. The chapter centers upon the sources of data, selection of the school districts for inclusion in the study, selection and development of instrumentation, the research design, and the statistical treatment of the data.

An analysis and examination of the data are presented in Chapter IV. The chapter is divided into five parts: (1) Introduction, (2) Group Characteristics - an analysis of the similarities and differences of the two groups of subject districts, (3) Major Variables - an analysis of data regarding financial expenditures, superintendent status, administrator open-mindedness, teacher age and professional preparation, and goal congruence, (4)

Exploration of Relationships, and (5) Summary.

Chapter V presents a summary of the study, some possible conclusions and implications, and recommendations for action and further research.

## CHAPTER II

## REVIEW OF RELATED LITERATURE

### Introduction

Dodgson,[1] in his classic Alice's Adventures in Wonderland, has the Queen say, in her dialogue with Alice, "Now here, you see, it takes all the running you can do to keep in the same place. If you want to get somewhere you must run at least twice as fast as that." The dilemma faced by the public schools of America is aptly described by these words. The society is moving and changing at an increasingly rapid rate and on many fronts. The schools do "all the running they can do" in an effort to "keep the same place," i.e., the maintenance, through reaction, of a status quo with society. "Running at least twice as fast as that" will be necessary "if you want to get someplace" - if the schools are to do more than react to changes in the society. But this worthy aspiration has been seldom realized.

Goslin[2] appears of the opinion that the schools have

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[1]Dodgson, Charles L. (Lewis Carroll), Alice's Adventures in Wonderland and Through the Looking Glass. New York: The John Winston Co., 1923. p. 185.

[2]Goslin, David A., The School in Contemporary Society. Glenview, Illinois: Scott, Foresman and Co., 1965. p. 13.

not even maintained the status quo with society. Even with growing expenditures for educational research, he contends little has been done to solve the serious problems facing the schools. Though there have been technological advances, there has been no fundamental change in organization, methods, curricula, or leadership.

Brickell,[1] at the close of an exhaustive study of innovation and change within the public schools of the State of New York, concluded that there had been new textbooks introduced, some changes in student grouping methods, and some special classes added. But, what changes had occurred had taken place within the existing organizational framework of the school system. Few genuine changes were found which made better use of time, professional staff, physical facilities, and other resources.

The challenge is clear. Basic changes must be made in public education if it is to be an effective and viable institution in the society. For those persons in positions of leadership in the public schools, the challenge is pressing and unavoidable. Pelligrin[2] holds that educators have

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[1]Brickell, Henry M., Organizing New York State for Educational Change. Albany, New York: New York State Education Department, 1961. pp. 18 - 19.

[2]Pelligrin, Roland J., "An Analysis of Sources and Processes of Innovation in Education." Paper delivered at conference on Role of Demonstration Centers in Educational Change. Urbana, Illinois, February, 1966.

long realized the schools were bound to and tended to reflect the society of which they are a part. As the society changes, the schools change. The question is the manner in which change occurs. He holds that the alternative to planned change is to be "buffeted about by the pressures and demands of society."

"Planned change," as opposed to "buffeting," would seem desirable. But the challenge is even more extensive. The expectations regarding relationships between teacher and student are changing. The expectations of teachers in their relationships with administrators are changing. Russell[1] states that not only has he begun to question the function of traditional subject matter in contemporary society, but has begun to wonder if the very concept of education is viable.

Yet a more optimistic view than that of Russell may be found and taken. McMurrin[2] sees change as a spreading infection. He grants educators are conservative and schools tend to resist change, but this is only natural for social institutions. The "virus of experiment, inventiveness, and adventure is infecting" and spreading and McMurrin

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[1]Russell, James E., Change and Challenge in American Education. Boston: Houghton-Mifflin Co., 1965. p. 7.

[2]_____, The Schools and the Challenge of Innovation. New York: The Committee for Economic Development, 1969. p. 2.

can see decision-makers becoming more receptive to innovation in the schools. And Miles[1] appears convinced that the steadily increasing demands on the schools are resulting in change. He goes to the extent of claiming that comprehensive changes in the structure and functioning of American educational institutions are apparent.

There seems little question that there exists great interest in educational change; educator interest, pupil interest, parent interest, and taxpayer interest. Yet, in many geographic, academic, and administrative areas problems persist and change fails to take place. Lipham[2] contends that genuine leadership is needed. He defines leadership as the initiation of new structures or procedures for accomplishing goals and objectives. It is of key importance that Lipham places so much emphasis on the initiation of change. If leaders and decision-makers are becoming concerned with the necessity of change, why are the changes not taking place?

Before structures and procedures and goals and objectives can be changed, a climate of receptivity must be

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[1]Miles, Matthew B. (ed.), Innovation in Education. New York: Bureau of Publications, Teachers College, Columbia University, 1964. p. 1.

[2]Griffiths, Daniel E. (ed.), Behavioral Science and Educational Administration. Chicago: National Society for the Study of Education, University of Chicago Press, 1964. p. 122.

developed if leadership change efforts are to be successful. The Committee for Economic Development[1] explains that the success of change efforts in the schools rests on being able to overcome a strong conservatism and a traditional resistance to change. This climate must be turned into one of genuine openness to experiment and innovation if changes are to take place. Lonsdale[2] adds that organizations must achieve a favorable orientation toward change. There must be developed a willingness and a readiness to change on the part of every member of the organization. Finally, Ross[3] summarizes the condition which is the concern of this study in yet another way. He refers to the inclination toward change as "adaptability, the capacity to lean into the future." He holds that without adaptability there will be no integrity in performance and no liveliness in the service of purpose among members of the organization. Adaptability is that vital ingredient of a viable institution and to be a sound leader the educational administrator must do something to increase the adaptability of the organization of which he

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[1] _____, Innovation in Education: New Directions for the American School. New York: Committee for Economic Development, 1968. p. 14.

[2] Griffiths, op. cit., p. 176.

[3] Ross, Donald H. (ed.), Administration for Adaptability. New York: Metropolitan School Study Council, 1958. p. 1.

is the head.

The remainder of this chapter is divided into two sections. First, the opinions, assumptions, and conclusions of the many writers will be discussed as they have been considered in the formation of hypotheses. Second, specific research which relates to each of the five major variables will be presented. In combination, the opinion and research presented is intended to explain the basis for the selection of the five characteristics for investigation.

## Opinion Related to Hypotheses

### Per-pupil expenditures

A great variety of findings and generalizations have been presented in the area of school district wealth and expenditure as they relate to innovation and change. On the one hand, Ross[1] reviews a great number of studies and concludes that wealth is most associated with the adoption of innovations. Carlson[2] adds, after reviewing more than one hundred studies in the Mort tradition, that there is only one question that needs to be asked if one is

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[1]Ross, op. cit., p. 119.

[2]Carlson, Richard O., Adoption of Educational Innovations. Eugene, Oregon: The Center for the Advanced Study of Educational Administration, 1965. p. 9.

interested in predicting the rate of adoption of innovations of a particular school system. That question is how much money is spent for instructional purposes per child each year. Carlson concludes that the school systems which are the first to adopt innovations spend the most money and the systems which are the last to adopt the same innovations are those that spend the least.

Pierce[1] injects just the trace of another element into the discussion by claiming that in his studies the better measure of innovativeness or adaptability was found to be the taxable wealth in support of each child in average daily attendance in the elementary school. However, this confounds the point but slightly as the correlation between expenditures and taxable wealth per child is generally assumed to be highly positive.

Mort and Cornell[2] qualify their conclusions regarding wealth:

> "Clearly wealth is an item to be considered in selecting communities for experimenting with a new adaptation, but persons interested in making an adaptation in a given poor community need not be

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

[2]Mort, Paul R. and Francis G. Cornell, Adaptability of Public School Systems. New York: Bureau of Publications, Teachers College, Columbia University, 1938. p. 144.

> discouraged on account of community poverty alone, for the wealth factor must be considered a conditioning factor and not the 'sine qua non' of adaptability."

And on a different occasion, Carlson[1] is critical of the Mort-style studies. He contends that the Mort studies have contributed little to the understanding of innovation and adaptability because the determinant factor (financial support) was narrowly conceived. He also criticizes studies in the Mort tradition in that they ignored a large general body of research on the adoption process. Carlson[2] goes on to report contradictory findings:

> "In a recent study of the adoption of such educational practices as team teaching, modern math, foreign language instruction in the elementary grades, programmed instruction, ungraded primary classes, and accelerated programs in high school among school systems in a county in western Pennsylvania, it was found that the amount of money spent per child had no predictive power in relation to the rate of adoption of these innovations."

As the opinions and conclusions were found to be varied and somewhat contradictory, the relationship of financial expenditures and fundamental organizational change was included in the investigation.

## Superintendent status

The superintendent of a public school system, as

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[1]Carlson, op. cit., p. 9.

[2]loc. cit., p. 8.

Brickell[1] points out, is a key element in change processes. Although interest in an innovative program or practice may not originate with him, the superintendent must lend it his support for it to have much of a chance of success. Ross[2] and Lipham[3] earlier made it clear that educational leadership involves initiating change. Carlson[4] suggests that the status or prestige of the chief administrator is related to his initiation of change and his success in accomplishing it. In fact, the more status the superintendent enjoys, the more successful he can be expected to be. Furthermore, he suggests that the superintendent's salary is the best indicator of his status. Rogers[5] implies that superintendents, if innovative, will be younger and will have high social status as characterized by a high level of education, relatively high salary, and a cosmopolitan quality. These opinions and conclusions suggest that the relationship of superintendent status and innovativeness be explored.

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[1]Brickell, op. cit., p. 24.

[2]Ross, op. cit., p. 1.

[3]Griffiths, op. cit., p. 122.

[4]Carlson, op. cit., p. 26.

[5]Carlson, Richard O., Change Processes in Public Schools. Eugene, Oregon: The Center for the Advanced Study of Educational Administration, 1965. p. 58.

Open-mindedness of administrative staff members

Brickell[1] suggests that the building principal is a key element in the determination of the success or failure of the change attempts of the innovative superintendent. After surveying and interviewing scores of New York State administrators, he noted that generally innovative programs and practices were introduced by administrators. Despite the common contention, teachers were found not to be change agents for major innovations. Brickell suggests that the findings imply that the efforts of innovators must center on convincing the building administrators.

Saville[2] adds, in analyzing the climate for change, that in order for change to take place administrators of the school system must be "psychologically mobile." He suggests that the administrator who is not "mobile" will not be a true educational leader. Genuine leaders are flexible in their frame of reference and are willing to make personal and professional sacrifices in order to promote educational change. There appears to be adequate justification for including the relationship of the open-mindedness of administrators to the innovativeness of

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[1]Brickell, op. cit., p. 22.

[2]Saville, Anthony, "Topography for Change." The Clearing House, XLII (January 1961), 272.

their districts in the study.

Age and professional preparation of teaching staff

Rogers[1] assumes that administrators may create an innovative staff by choosing young teachers with a high degree of professional preparation. He reasons that flexibility and cosmopolite qualities of the staff will in this way be obtained. The relationship of the age and level of professional preparation of teaching staffs to the extent of fundamental organizational change, therefore, was included as a variable for investigation.

Congruence of goals

Goals are widely discussed in relation to educational leadership and organizational change. Boles[2] describes the job of the educational leader as helping the group he leads to move toward goals by making them increasingly acceptable to group members. Lippitt, Watson, and Westley[3] stress the importance and necessity of establishing

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[1]Carlson, op. cit., p. 61.

[2]Boles, Harold W., "Leaders, Leading, and Leadership." (Unpublished manuscript, Western Michigan University, Kalamazoo, Michigan, 1969), p. 37.

[3]Lippitt, Ronald, Jeanne Watson, and Bruce Westley, Planned Change. New York: Harcourt, Brace and Company, 1958. p. 198.

goals and intentions of actions as the first step in the change process. In analyzing the failure of change efforts, Watson[1] suggests that in most cases there has been a lack of communication about goals and objectives, some question regarding just what expectations are communicated, and a difficulty in connecting methods and activities to goals.

As a result of numerous efforts to achieve change in school systems, Stutz[2] relates that his experience in the Western States Small School Project convinced him that there are four important requirements that must be met if innovation attempts are to be successful: (1) New goals must be established, (2) A commitment to these new goals must be gained, (3) Environmental conditions and resources must be provided for the attainment of the new goals, and (4) There must be retraining of staff and a resulting change in value systems.

Miller[3] testifies that the prerequisites to change are not easily attained. He notes that as the school is a part of the society, overall changes in goals are slow

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[1]Watson, Goodwin (ed.), Change in School Systems. Washington, D. C.: National Training Laboratories, N.E.A., 1967. p. 34.

[2]Stutz, Rowan C., "Strategies for Strengthening Small Schools." North Central Association Quarterly. XLII (Fall 1967), 199.

[3]Miller, Richard I. (ed.), Perspectives on Educational Change. New York: Appleton-Century-Crofts, 1967. p. 115.

to come about. This is seen as a protective device to keep the school from being swayed by every whim extant. And, furthermore, the slow change of goals is compounded by the fact that the professional educator, generally, has internalized the role of goal-keeper for the society. As such, he tends to be conservative and resist change efforts. Yet in this there is seen a potential for positive action.

Chase[1] and McNally[2] view the optimistic side of the goals issue. Chase holds that the best external stimuli that might be provided by the educational leader would be that which would result in the members of an educational system understanding the full significance of the chosen goals, the most effective means for achieving the goals, and the reasons for the selection of the goals. McNally concludes that the ferment of today makes the most important job of the school staff that of redefining and affirming their objectives. Further, he reasons that the effectiveness of the school system is a function of the degree to which the members of the staff have agreed upon

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[1]Campbell, Roald F. and James M. Lipham (eds.), Administrative Theory as a Guide to Action. Danville, Illinois: Midwest Administrative Center, The University of Chicago, 1960. p. 195.

[2]McNally, Harold J., "The American Principal Tomorrow." The National Elementary Principal, XLVII (May 1968), 88.

objectives and have committed themselves to their attainment.

## Related Research

As there exists a vast amount of extremely varied research in the area of innovation and change, it is both reasonable and necessary to be particularly selective in that which is included here. Therefore, there has been an attempt to report only that research which is recent, closely related to the five major variables, and predominantly the result of investigations within the field of education.

### Introduction

Generally, the research in innovation and change has been approached from one of three directions. The emphases of research efforts, according to Lonsdale,[1] have been traitist, behavioral, and/or situational.

The traitist approach to the study of innovation and change centers attention on the personal characteristics of the innovator himself, his age, education, experience, competencies, attitudes, beliefs, etc. The behavioral approach emphasizes the importance of the

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[1]Griffiths, loc. cit.

innovator's actions, his affiliations, the decision-making processes he utilizes, his position in a communication network, etc. Finally, the situational approach is perhaps the least specific of the three. In some situational studies the investigator is concerned with only one or two inanimate factors such as wealth or financial expenditures. But in many other studies, the situational approach has been expanded to include a number of physical and human elements of the system such as socio-economic levels, racial configuration, education level, etc. of the group. Perhaps traits and behavior are studied in a situation in which they are thought to be related in a particular way. And yet other studies have a combination of emphases, studying particular innovator traits and behaviors as they relate to a particular combination of situational factors.

However, as more research has been done in innovation and change, it has been found that there are potential insights in deviations from a single, clear-cut approach or emphasis. Miles[1] suggests seven basic categories of emphasis, most of which fail to fit neatly into one of

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[1]Miles, Matthew B. (ed.), Innovation in Education. New York: Bureau of Publications, Teachers College, Columbia University, 1964. pp. 40 - 42.

Lonsdale's[1] three categories: (1) Special characteristics of educational systems, (2) Underlying characteristics of the innovation, (3) Prior states of the system, (4) Processes during change, (5) Characteristics of the innovative person or group, (6) The fate of the innovation, and (7) Reasons for changes in innovation rates.

In considering the seven approaches, it would seem that Miles is suggesting, in searching for answers to general questions, that the investigator consider the traits of the innovator, or the innovator's behavior, or other elements in the situation in any combination if such consideration would serve to produce the desired data. If appears that most recent research, such as that being carried on at the University of Oregon's Center for Advanced Study of Educational Administration and the University of Kentucky's Center for the Study of Educational Change, has been of this nature.

It is in the situational category this research project might be placed. It considers variables which are, except for one instance, not specifically related to individual traits of innovators. It is not concerned with the behaviors of individuals or groups, but rather

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[1]Griffiths, loc. cit.

with factors believed associated with these behaviors. In short, the project cannot be neatly categorized, but seeks data regarding five characteristics held by the writers as having a bearing on the situation in which an innovator may wish to bring about organizational change - five characteristics logically appearing to have relevance to today's educational scene. The characteristics may be those, which, if their relationships are understood, will provide insights into resistance to change not provided by a study of innovator traits and behaviors. It is to research relating to these characteristics that this section now turns.

## General

The great majority of research studies in innovation and change have been educational diffusion studies under the guidance of Mort of Teachers College, Columbia University. Mort has been referred to as "the guiding force. . . chief strategist, tactician, and theorist of this area of study."[1] The first major work in the area was done by Mort in school finance in the 1920's. He was concerned with the adaptability of school systems, which he held

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[1]Ross, op. cit., p. xi.

could be developed through local financial control. The concept became the emphasis of numerous following studies as evidenced by titles "Adaptability of Public School Systems,"[1] or "Adaptability Among Elementary Schools in an American City,"[2] or "Adaptation Processes in Public School Systems."[3] Nearly one hundred fifty studies followed by 1953. These have been carefully analyzed by Ross.[4] Rogers[5] suggests a number of central findings which have emerged from these studies: (1) The best single predictor of innovativeness and adaptability is the educational cost per pupil, (2) A large amount of time is required to achieve the widespread acceptance of a new educational idea, and (3) The pattern of adoption of an educational idea approaches an 'S' - shaped curve over time.

Adaptability, essentially a synonym for innovativeness, was defined as "the capacity of a school to take

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[1]Mort and Cornell, op. cit., pp. xii - 146.

[2]Ebey, George W., Adaptability Among Elementary Schools of an American City. New York: Bureau of Publications, Teachers College, Columbia University, 1940. pp. v - 73.

[3]Farnsworth, Philo T., Adaptation Processes in Public School Systems. New York: Bureau of Publications, Teachers College, Columbia University, 1940. pp. vi - 136.

[4]op. cit., pp. xx - 643.

[5]Rogers, Everett M., Diffusion of Innovations. New York: The Free Press, 1962. pp. 40 - 41.

on new practices and discard outmoded ones."[1] Mort and Cornell[2] explain the position which underlay the entire series of research studies. It was held by the researchers of the Mort tradition that adaptability was an essential element in the effective operation of any school system. It would only be a waste of educational moneys to permit schools to operate in terms of the educational tenets of fifty years ago. Many years later, Mort[3] proposed that the many research efforts with which he had been associated had resulted in the justification of two conclusions: (1) No single factor, in and of itself, was found to be highly related to adaptability, and (2) There were such complex differences among communities in the factors relating to adaptability that traditional research methods could not clarify the relative influence of any single factor.

The many diffusion studies in the Mort tradition have been discussed here for two reasons. First, their findings of the educational expenditures per pupil as the best predictor of innovativeness relate to one major variable of this study. Second, the very fact that such a

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[1]Ross, Donald H., "Measuring Institutional Quality of School Systems." Teachers College Record, LVII (December 1955), 173-174.

[2]op. cit., p. 13.

[3]Miles, op. cit., p. 321.

large number of studies of adaptability were done indicates a conviction of Mort and his followers that educational leaders may alter the state of the adaptability of a given school or school system. The same conviction underlies the present study and tends to justify the effort expended.

Yet regardless of the commonality, a basic difference exists between this study and the diffusion studies of the past. This project undertook the comparative study of those districts deemed conventional in their programs and practices and those districts in which there existed programs and practices resulting in or from fundamental organizational change. The emphasis of diffusion studies of the past, however, appears to have been primarily on the acceptance and spread of almost any new educational material, program, or practice. The adjective "innovative" has been and was broadly defined.

These introductory comments by Lionberger,[1] for instance, serve to illustrate the difficulty, due to different operational definitions, of applying the findings of more than fifty studies he cites in the educational

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[1] _____, Strategy for Curriculum Change. Washington, D. C.: Association for Supervision and Curriculum Development, 1965. p. 29.

situation:

> "This paper is concerned with abstracted generalizations from diffusion research in agriculture and related fields and with applications to changes within public school systems. I use the term 'innovation' in a very broad sense to include (a) an idea or practice which departs from those generally prevailing among an aggregate of people who may be regarded as targets of directed change efforts; or (b) a change in technology including a material object together with definitions of use in relation thereto."

Even within education, Carlson,[1] for instance, studied the rate of diffusion of modern mathematics in western Pennsylvania and found district wealth not to be a significant factor. There have been studies in the Mort style, however, that dealt with the acceptance of the concept of kindergarten in which wealth was found to be very much related to adoption. These examples indicate that findings cannot always be compared due to uncommon bases for data collection and analysis, and that on the whole, diffusion studies have considered mixed programs and practices and have not concentrated on those resulting in fundamental structural and organizational changes as in this study.

As the research which relates to the five basic variables of this study is considered, it must be approached

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[1] op. cit., p. 9.

with the understanding that conclusions may be reached on the basis of a great variety of controls and designs. It is necessary to not only consider the conclusions reached, but also what kinds of innovations and changes were being studied.

Per-pupil financial expenditures

There has been probably more research effort devoted to the relationship of innovativeness to financial factors than to any other variable. Ross,[1] after reviewing one hundred fifty studies in the Mort tradition, set the tone, generally, for all such findings when he concluded that if one must make a prediction of adaptability of a school system on the basis of only one factor, that one factor had to be the amount of money that was spent per pupil.

More recently, Johnson[2] concluded, after an evaluation of N.D.E.A., Title III, projects in California, that the financial incentive provision of the entire program was the key to change. He implies that many public school districts would do things differently if they were just

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[1] op. cit., p. 15.

[2] Johnson, Donald W., The Dynamics of Educational Change. Volume 32, Bulletin No. 3, Sacramento: California State Department of Education, 1963. pp. 135 - 137.

financially able. Just what they would do has interested Bassent and Moore.[1] They are of the opinion that goals of projects supported by outside funds are those of the fund-granting agency. It would follow, then, that research regarding those innovations under N.D.E.A., Title III, would tend not to be applicable in a discussion of financing fundamental change in that (1) funds came from outside the system, (2) federal guidelines and implicit goals were heeded, and (3) moneys were temporary.

Earlier reference was made to Carlson[2] who has been specifically critical of the Mort-style studies and conclusions regarding the predictive ability of financial expenditure statistics. Carlson states that he found that the amount of money spent per child had a negative insignificant correlation with innovativeness in a study in western Pennsylvania and a later replication in West Virginia. However, even more recently, investigation of innovation in Pennsylvania public school systems led Kendig[3] to conclude that the one condition examined which was

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[1]Miller, op. cit., p. 115.

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

[3]Kendig, Thomas E., "An Analysis of the Relationship of Certain Educational Conditions to Curriculum Breadth and Innovation in Selected Pennsylvania School Systems." Unpublished Doctor's dissertation, Pennsylvania State University, University Park, Pennsylvania, 1965.

most closely related to the number of educational innovations in practice in a school system was the taxable wealth per pupil of the community.

Nicholson[1] investigated variables related to the adoption of educational television in one hundred nineteen Indiana public school districts. He summarized that the adopting group had reported higher assessed valuations, greater amounts of money spent per pupil, and higher salaries paid to teachers. A slightly different aspect of the question was considered by Hughes,[2] yet with a similar finding. In investigating central administrative office organizational climate, he concluded that the only characteristic revealed as "significant" was the innovative districts expended more money per pupil than did non-innovative districts (sig. at .01). And Pafford[3] found, in studying twelve districts in central Kentucky, that there was a "significant" relationship (sig. at .10)

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[1]Nicholson, Everett W., "Selected School District and Administrative Variables Related to the Adoption of Instructional Television." Unpublished Doctor's dissertation, Purdue University, LaFayette, Indiana, 1965.

[2]Hughes, Larry M., "The Organizational Climate Found in Central Administrative Offices of Selected Highly Innovative and Non-Innovative School Districts in the State of Ohio." Unpublished Doctor's dissertation, Ohio State University, Columbus, Ohio, 1965.

[3]Pafford, William N., "Relationships Between Innovation and Some School Factors in Kentucky." School and Society, XLVI (November 23, 1968), 438-440.

between the number of innovations in a five-year period and the per-pupil amount of local revenue devoted to education.

It is interesting to note that there are concomitant conditions which relate to the matters of the innovation-finance relationship and educational leadership and change. Beardsley,[1] for instance, investigated the relationship of the level of per-pupil expenditures and perceptions of leadership roles. He concluded, on the basis of administrative perceptions, that the potential for the principal to provide dynamic educational leadership diminished (within all community types) with a decrease of the per-pupil expenditures.

## Teacher age and professional preparation

The relationship of various teacher characteristics and the innovativeness of school systems began to receive attention some years ago. Cocking[2] concluded that the qualities of the individual staff members, as well as the pattern of the entire staff, may hinder the growth of the

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[1]Beardsley, Don G., "The Effect of Community Type and Per-Pupil Expenditures on the Status and Leadership Potential of the Illinois Secondary School Principal." Unpublished Doctor's dissertation, Northwestern University, Chicago, Illinois, 1968.

[2]Cocking, Walter, The Regional Introduction of Educational Practices. New York: Bureau of Publications, Teachers College, Columbia University, 1951. pp. 69 - 70.

system in the direction of better education. He makes reference to conclusions of Mort and Cornell in their American Schools in Transition. They held that the qualities of the individual staff members definitely related to the adaptability of the school system. They concluded that teachers employed by less adaptable districts had lower levels of professional preparation, lacked breadth of experience, possessed less insight into the psychological needs of students, tended to be drawn from few teacher-training institutions, and generally held low aspirations for the schools of their system.

It would appear that one of the conditions conducive to the acceptance of innovation and change within a school system would be a well-prepared teaching staff. The mean age of the staff members may also be of some importance. Hawkins,[1] in a study of factors related to innovation, found that teachers who were most likely to accept change were those in their thirties, who had had one or more years of graduate training, and who had taught from five to ten years. Eibler[2] investigated more than five hundred

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[1]Hawkins, Wilber D., "Some Factors Which Contribute to Successful Educational Innovation." Unpublished Doctor's dissertation, University of Southern California, Los Angeles, California, 1968.

[2]Eibler, Huber J., "Characteristics for Innovation." The Clearing House, XXXII (May 1969), 523-526.

members of the staffs of ten secondary schools in metropolitan Detroit and concluded that faculties having members with greater academic preparation were relatively higher innovators (significant to .05).

As per-pupil expenditures have been shown to relate rather consistently to innovativeness, Hart[1] studied the relationship of staff characteristics to expenditures. She found that as expenditure levels increased, the staff members showed a tendency to have completed more years of education beyond high school and had earned more advanced degrees.

Approaching the matter somewhat differently, Eicholz[2] concentrated on the individual teacher rejector. He concluded that the number of years of teaching experience (which can be assumed to correlate highly with age) made no appreciable difference in whether a teacher rejected a specific innovation.

Open-mindedness of administrators

Research into the characteristics of administrative staff members, generally, and principals, particularly,

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[1]Hart, Helen A., "High School Staff Characteristics in High, Medium, and Low Expenditure Districts." Unpublished Doctor's dissertation, Wayne State University, Detroit, Michigan, 1965.

[2]Eicholz, Gerhard C., "Why Do Teachers Reject Change?" Theory into Practice, II (December 1963), 267.

is rare in relation to innovation defined as resulting in fundamental structural and organizational change as in this study. Much has been done with the perceptions of the leadership role and organizational climate. But such studies have centered on congruence of perceptions and behavior rather than on the attitudes or thinking of the perceivers.

The basis for the inclusion of the traits of middle and first-line administrators was prompted by Brickell's[1] conclusions outlined earlier. Of particular interest was receptivity to new ideas, flexibility in thinking, or open-mindedness. This is more important, perhaps, than inventiveness or creativity. Griffiths[2] found, for instance, in his study of 232 principals in the simulated Whitman School administrative problem situation, evidence leading him to conclude that the principal seldom introduces a new idea into the school system. If that is the case and initiative for change must come from the top, the traits related to receptivity are even more the concern of this study.

Specific investigations of the open-mindedness of

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[1]op. cit., p. 22.

[2]Griffiths, Daniel, "The Elementary School Principal and Change in the School System." Theory into Practice, II (December 1963), 283.

public school principals have been few. Only one such study appears in which the trait was considered in relation to innovativeness. Though comparing only four innovative school districts with four non-innovative ones, Childs[1] concluded there were no significant differences in the open-mindedness of principals. Hoy,[2] on the other hand, found significant differences (.001) in the open-mindedness of principals in a study involving pupil control ideology and practice. Green[3] investigated the dogmatism of only twelve Michigan principals as it related to levels of morale exhibited by teachers and personality type preference patterns in teacher hiring. He failed to find any genuine pattern in hiring practices or any variations in staff morale to coincide with increasing or decreasing dogmatism on the part of the principals.

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[1]Childs, John W., "A Study of the Belief Systems of Administrators and Teachers in Innovative and Non-Innovative School Districts." Unpublished Doctor's dissertation, Michigan State University, East Lansing, Michigan, 1965.

[2]Hoy, Wayne K., "Dogmatism and the Pupil Control Ideology of Public School Professional Staff Members." Unpublished Doctor's dissertation, Pennsylvania State University, University Park, Pennsylvania, 1965.

[3]Green, James E., "The Relationship Between Dogmatism of Principals and Teachers and Teacher Morale in Twelve Selected Secondary Schools in Michigan." Unpublished Doctor's dissertation, Michigan State University, East Lansing, Michigan, 1966.

Some work has been done with other administrator traits. Klingenberg[1] included ninety principals in his comparative study of innovative and non-innovative public school districts and concluded there was a relationship between the years of experience and the innovativeness of the system. Investigating one hundred thirty-two schools in the province of Alberta, Canada, Elliott[2] found evidence indicating a positive correlation between the extent of the principal's professional preparation and training and his receptivity to innovation. Pafford,[3] too, found such a relationship between the mean age of principals and the innovativeness of the school districts.

Superintendent status

As in the case of other public school administrative staff members, the leadership role of the superintendent

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[1]Klingenberg, Allen J., "A Study of Selected Administrative Behaviors Among Administrators From Innovative and Non-Innovative Public School Districts." Unpublished Doctor's dissertation, Michigan State University, East Lansing, Michigan, 1967.

[2]Elliott, Arthur H., "An Investigation of School Organizational Variables and Their Relation to the Principal's Receptivity to Innovation: An Exploratory Study." Unpublished Doctor's dissertation, University of California, Berkeley, California, 1967.

[3]op. cit.

has been investigated frequently. Many such studies have emphasized the perceptions of roles by various reference groups, teachers, citizens, etc. However, few studies can be found in which the consideration of the traits of superintendents was specifically related to the innovativeness of their districts. None has been found that utilized the definition of innovation and change which is an integral part of this study. The nearest research project, in design at least, is that of Klingenberg,[1] but his interest was in the superintendent's attitudes and behaviors, primarily. Other investigations, however, have considered, on one way or another, traits included in this study.

A chief component of the status rating, which is a part of this study's design, is salary. Mason and Gross[2] included ninety-one school district superintendents in their Massachusetts project and considered seven factors thought to relate to the status and prestige of the chief administrator. They found that salary alone accounted for seventy-nine percent of the variance in prestige among the superintendents of their sample. Prestige ratings and

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[1] op. cit.

[2] Mason, Ward S. and Neal Gross, "Intra-Occupational Prestige Differentiation: The School Superintendency." American Psychological Review, XX (June 1955), 330.

and weightings of factors were obtained from the superintendents themselves, rating their own and all other positions. The next most important factor was median salary of teachers, followed by number of pupils in the district. Carlson[1] found that there was a $1,200 to $2,500 difference in salary in favor of the "outsider" superintendent who had been recruited intentionally from without and expected to make changes in the school system.

In research directed specifically to the traits of superintendents of innovative public school systems, a number of other factors have been considered. Pafford,[2] in his Kentucky investigations, related a number of innovations made within the district and the tenure of the superintendent, but failed to find a significant relationship. Jenson,[3] on the other hand, studied ten innovative and ten non-innovative superintendents from the

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[1]Carlson, Richard O., Executive Succession and Organizational Change. Chicago: Midwest Administration Center, The University of Chicago, 1962. p. 20.

[2]op. cit.

[3]Jenson, LeRoy N., "Characteristics of Superintendents of Innovative and Non-Innovative School Systems and Interaction with the Iowa Department of Public Instruction." Unpublished Doctor's dissertation, University of Iowa, Iowa City, Iowa, 1967.

forty-nine largest public school systems in Iowa, and concluded the innovative superintendents had fewer years of tenure. Furthermore, they were found to be younger, to have more formal education, to have higher professional position index (number of memberships and offices held in professional organizations), to make greater use of impartial and expert assistance, and to seek the services of the Iowa State Department of Public Instruction more frequently.

Short tenure was also found to be characteristic of innovative superintendents by Reynolds.[1] In studying one hundred eighty-three superintendents in Missouri and Illinois, he also concluded outside succession to office was associated with higher levels of innovation. In addition, he considered the "local-cosmopolitan reference group orientation" which Klingenberg[2] touched upon with his sources of information data. However, he (Reynolds) failed to find data to support the hypothesis that superintendents of more innovative districts would also be more "cosmopolitan."

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[1]Reynolds, James A., "Innovation Related to Administrative Tenure, Succession, and Orientation: A Study of the Adoption of New Practices by School Systems." Unpublished Doctor's dissertation, Washington University, St. Louis, Missouri, 1965.

[2]op. cit.

Finally, Allen[1] investigated the relationship of innovativeness to sixteen various personality factors of the superintendent. His only significant finding was the positive correlation between adoptiveness and pupil enrollment.

Goal congruence

There have been found no research studies in which comparisons have been made of the goal perceptions of teachers, administrators, and board of education members relative to the innovation and change within the public school district. There have been, though, projects which investigated matters of objectives, values, and roles, which yield something to the entire area of concern.

Chester, Shunck, and Lippitt[2] report an investigation which most closely relates to the objectives of this study. They studied nine elementary and secondary schools in depth and reported that principals with innovative staffs were found to be in tune with the feelings and values of their teachers about education.

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[1]Allen, John E., "The Adoption of Innovations and the Personality of the Superintendent of Schools." Unpublished Doctor's dissertation, The Ohio State University, Columbus, Ohio, 1967.

[2]op. cit., p. 275.

The relationship of school district innovativeness and school board role expectations, which involves a consideration of values and goals, was investigated by LaPlant[1] in twelve Wisconsin school systems. He found significant relationships of citizen-teacher consensus to innovativeness and earliness of adoption (.05 and .01, respectively). However, no such significance could be found involving teacher-school board member consensus.

Bickert[2] studied the perceptions of the three groups involved in faculty-administrator-school board relationships in innovative and non-innovative school districts. He found significant differences in these perceptions between the two groups of districts. He also found significant differences in the perceptions of the instructional program, which is perhaps more related to the matter of values and objectives. And, finally, Mosley[3]

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[1]LaPlant, James C., "School District Innovativeness and Expectations for the School Board Role." Unpublished Doctor's dissertation, University of Wisconsin, Madison, Wisconsin, 1966.

[2]Bickert, Roderick N., "Selected Organizational Values and Characteristics of Innovative and Non-Innovative School Systems." Unpublished Doctor's dissertation, University of Iowa, Iowa City, Iowa, 1967.

[3]Mosley, Raymond J., "Agreement and Disagreement Among Missouri Teachers, Superintendents, and Board Members." Unpublished Doctor's dissertation, University of Missouri, Columbia, Missouri, 1967.

found more agreement among Missouri superintendents and board members regarding roles than between any two groups studied. Although innovation and change were not a part of the design, the matter of congruence of perceptions was involved. Innovation was not a part of Stivers'[1] study in Oregon, either, yet his concern with values makes his findings relevant here. He investigated purposes and means of education and found no significant variations among the perceptions of school board chairmen, school superintendents, state education department certificated staff members, and officers of the two major statewide teacher organizations.

## Summary

Literature in the area of innovation and change is profuse. The writers seem to agree that innovation and change are necessary if the school is to remain a viable institution in American society. Agreement appears to exist also in the contention that orderly change is not without its difficulties as the school is by nature a conservative institution. There appears to be some consensus that the "healthy" organization is changed less

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[1]Stivers, Stephen N., "The Purposes of Education and the Means to Achieve Them: A Study of the Perceptions of Five Leadership Groups." Unpublished Doctor's dissertation, University of Oregon, Eugene, Oregon, 1966.

traumatically than is the organization that lacks the characteristics of "health."

Innovation, diffusion, and adoption research have been easily categorized under three major headings of traitist, behavioral, and situational until more recently when overlapping projects have become the pattern. Research included in the review has been selected from that which has been done recently, from that which has relevance to the five major variables in question, and from that which has been done in the field of education.

The great bulk of diffusion and adaptability research prior to the last twenty years was done in the Mort tradition, with an emphasis on rates of adoption and finance. Recent efforts have been more comprehensive in nature. Considering the variables of this study, research efforts relating to district wealth and expenditures per student are numerous. Expenditure levels are held as the single best predictor of innovativeness by some writers and as not being related to the adoption of innovations by others. Not only were findings contradictory, but few research efforts assumed innovativeness to be fundamental organizational change.

Data relating to teacher, principal, and superintendent traits are easily available. Teacher characteristics were determined as being related to school system

adaptability twenty years ago. More recently, smaller studies have indicated an association between higher levels of professional preparation and younger age of teachers and innovativeness. Little research was found to relate directly to the open-mindedness of administrators, but many peripheral and supportive studies were cited. In separate studies the salary and education components of superintendent status were shown to be associated with innovation, as well as the chief administrator's age and tenure. But again, the personal traits of these school personnel were not considered in the light of the success of the school system to accomplish basic structural change.

Finally, data relating to the congruence of goals, specifically, have not been found, however there have been implications drawn from those few studies concerning congruence of role perceptions and matters of values and objectives. As in all other variables, research studies were not found in which matters of goals, objectives, or values were studied through a comparison based on fundamental organizational change.

# CHAPTER III

# RESEARCH PROCEDURES

## Introduction

In an attempt to develop statistics related to the concepts outlined in Chapter II, many essential steps preceded the analysis of the data. In the following pages there will be discussed the general design of the study, the procedure for selecting the sample and the population from which it was drawn, the selection and development of research tools, the statistical hypotheses, and procedures for analysis of the data. Particular attention is given the matter of sample selection as it is the very heart of the project. For an understanding of this, and other facets, a brief statement of the design is necessary.

## General Design

The study consisted of the measurement of five basic characteristics, suggested by related literature and research as being associated with innovativeness and change in public school systems. It was hypothesized that within innovative public school districts the investigator would find (1) higher annual per-pupil financial

expenditures, (2) superintendents with greater status, (3) administrative staff members with a greater degree of open-mindedness, (4) younger and more highly prepared teaching staffs, and (5) greater agreement among teachers, administrators, and board of education members regarding the relative importance of common goals of American education than in non-innovative school districts.

The five characteristics were measured within twenty public school districts selected from the 183 districts within the lower thirty-four counties of southern Michigan which were in the 2,000 to 10,000 pupil enrollment range. A group of ten districts was selected for the investigator by a panel of seventy experts, according to established criteria of innovativeness. A group of ten non-innovative districts was then selected by the researcher, matching the first group on the basis of pupil enrollment and taxable wealth per student.

A particular size category of public school system was chosen on the basis of manageability and with the aim of controlling variables. A number of subject systems was selected which would provide sufficient numbers of individual respondents and an adequate basis for the analysis of the data collected.

## Population and Sample

As sources of data, twenty public school districts within the 2,000 to 10,000 pupil enrollment range were drawn from the total population of 183 such districts in the thirty-four southernmost counties of lower Michigan (See Appendix, Exhibits #1 and #2). As the process of selection was of key importance to the success of the project, it was developed in three phases, each designed to supplement and confirm the other.

The first step in the process of selecting a sample of twenty districts was to perform a rough screening of the 183-district population. As the geographic area was large, time limited, and no extensive and current data available for the investigator to analyze, the use of an expert panel was deemed necessary and justified. The panel membership was selected on the basis of geographic representativeness, as well as representativeness with respect to the various levels of educational endeavor, and the several special interest areas. Members of the panel were drawn, generally, from the Michigan Association for Supervision and Curriculum Development Board of Directors, the intermediate school district superintendents of the counties of the area, research, accreditation, and school services areas. It was held that the

positions, interests, and activities of these jurors enabled them to assist in the screening process (See Appendix, Exhibit #3). The process of appealing to a panel of experts in order to establish groups of subject districts is not without precedent. Cited in Chapter II were a number of findings reported by doctoral-level researchers, among them Hilfiker,[1] Hawkins,[2] Bickert,[3] and Jenson.[4]

The list of 183 public school districts was provided each of the jurors. Also, each juror received a statement of criteria for innovation and change and a request to select from the population up to eight public school systems meeting the criteria.

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[1]Hilfiker, Leo R., "The Relationship of School System Innovativeness to Selected Dimensions of Interpersonal Behavior in Eight School Systems." Unpublished Doctor's dissertation, University of Wisconsin, Madison, Wisconsin, 1968.

[2]Hawkins, Wilber D., "Some Factors Which Contribute to Successful Educational Innovation." Unpublished Doctor's dissertation, University of Southern California, Los Angeles, California, 1968.

[3]Bickert, Roderick N., "Selected Organizational Values and Characteristics of Innovative and Non-Innovative School Systems." Unpublished Doctor's dissertation, Northwestern University, Chicago, Illinois, 1968.

[4]Jenson, LeRoy N., "Characteristics of Superintendents in Innovative and Non-Innovative School Systems and Interaction with the Iowa Department of Public Instruction." Unpublished Doctor's dissertation, University of Iowa, Iowa City, Iowa, 1967.

Essentially, Brickell's[1] conclusions regarding the lack of fundamental change formed the basis for the criteria statement. Members of the panel were instructed to consider as innovative or changed any district carrying on one or more programs which required substantial rearrangements in (1) the way blocks of time were used, (2) the way teachers worked with students, (3) the allocation of physical facilities, and (4) the use of instructional equipment or materials. Examples of programs and practices resulting in or from changes within these four areas were included (See Appendix, Exhibits #4, #5, and #6).

Responses of the members of the panel were tallied and the ten most frequently nominated public school districts were selected to form the "innovative" group. To match each member of this group of ten, there were selected two other public school districts as nearly equal in enrollment and state equalized valuation per pupil as possible, yet receiving no nominations from the members of the expert panel. Ten of these twenty matching districts were later selected to form the "non-innovative" group.

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[1]Brickell, Henry M., Organizing New York State for Educational Change. Albany, New York: New York State Education Department, 1961. pp. 18 - 19.

The second step in the sample selection process consisted of seeking confirmation of the collective judgment of the panel members. This was done through examination and analysis of the reports of the schools of the subject districts to the Michigan State Department of Education in the 1964 Survey of Five Years of Progress in Public Education in Michigan. The number, magnitude, and longevity of programs and practices reported by the subject schools at that time were translated into a constructed numerical innovativeness rating. The same process was applied to the twenty matching districts and the lowest scoring member (less innovative) in each pair was selected to be in the "non-innovative" group.

The use of the constructed innovativeness rating was not without precedent, as discussed earlier. Childs[1] and Klingenberg[2] utilized a particular mathematical approach, yet a number of approaches, involving essentially the same elements, are possible. In confirming

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[1]Childs, John W., "A Study of the Belief Systems of Administrators and Teachers in Innovative and Non-Innovative School Districts." Unpublished Doctor's dissertation, Michigan State University, East Lansing, Michigan, 1965.

[2]Klingenberg, Allen J., "A Study of Selected Administrative Behaviors Among Administrators From Innovative and Non-Innovative Public School Districts." Unpublished Doctor's dissertation, Michigan State University, East Lansing, Michigan, 1967.

the nominations of the expert panel, a constructed innovativeness score was derived from four basic factors: (1) the number of programs and practices in existence in a given district which resulted in or from fundamental organizational change, (2) the number of years the programs and practices had been in existence, (3) the number of students involved in such programs and practices, and (4) the number of student minutes per week involved. Allowing a point for a yearly student minute, a simple multiplication of years of existence by students involved, and the product by minutes per week, resulted when all such programs and practices were combined, in a total number of innovativeness points. Division by district enrollment, and statement in thousands, controlled for varying district size and yielded a usable innovativeness rating. The approach differed from that of Childs and Klingenberg only in that varying weights were not assigned to all the programs and practices listed in the Survey of Five Years of Progress form. Instead, only those practices deemed as resulting in or from fundamental organizational change were accepted as criteria and awarded equal weight. The net result was based on the same factors otherwise and controlled for the same variations. The absence of weighting was offset by the fact that the use of the constructed innovativeness formula was directed only

toward the end of categorizing districts, not rank ordering them. Comparison of the ratings of the ten members of each group revealed the two groups to be significantly different, and therefore, the collective judgment of the members of the expert panel was supported. (The probability of observing the difference in mean innovativeness ratings, based on the null hypothesis, would be less than .001)("t" = 3.746, Sig. at p = .001, See Appendix, Exhibit #7).

The final step in the process of sample selection consisted of investigating the current number, magnitude, and longevity of programs and practices originally accepted as criteria for change. This was done by visiting the twenty districts initially selected. The assistant superintendents for instruction, the directors of curriculum, or, in the smaller districts, the superintendents were interviewed and current data, similar to that compiled by the State Department in 1964, were collected. Again the constructed innovativeness ratings were computed and a comparison of the two groups assured the investigator that they were indeed different. (The probability of observing the difference in mean innovativeness ratings, based on the null hypothesis, would be less than .025)("t" = 2.494, Sig. at p = .025, See Appendix, Exhibit #8).

The twenty public school districts selected were contacted in person by the investigator. The nature of the study and the extent of their commitment and participation were explained to the superintendents. All twenty district superintendents readily agreed to permit the collection of data and expressed apparent genuine interest in the results. This visit was followed by a letter confirming the date agreed upon for the data collection and briefly summarized the procedures and purposes of the study (See Appendix, Exhibit #9). No restrictions for district inclusion were imposed, other than those discussed above, and all were assured of complete anonymity and the receipt of a copy of the final report of the project.

From the twenty districts all board of education members, all members of the administrative staffs, all superintendents, and fifteen percent of the classroom teachers were utilized as subjects. In total, there were 140 members of boards of education, 200 administrative staff members, 700 classroom teachers, and twenty superintendents contacted.

## Data and Instrumentation

The five major characteristics outlined in the major hypotheses were measured in the sample districts in the

following manner:

1. The annual per-pupil financial expenditures for the 1968-69 school year of the twenty subject districts were derived from data obtained from the Department Services Division, Bureau of Administrative Services, of the Michigan State Department of Education. The Department provided the investigator access to the 1968-69 Annual Financial Report (Form B 5-69 4000) of each of the subject districts. As only total expenditures within the various budget categories were available, official enrollment statistics were obtained from the same office in order to compute the per-pupil amounts. Statistics were obtained for the ten districts in each of the "innovative" and "non-innovative" groups and the per-pupil amounts computed for comparative study.

2. The status of the superintendent was quantified on the basis of a single numerical score reflecting the composite of (a) the extent of professional preparation, (b) salary, (c) student enrollment of the previous district of employment, (d) number of memberships in professional organizations, (e) number of offices held in professional organizations, (f) number of memberships in non-professional organizations, and (g) number of offices held in non-professional organizations. The information regarding each of these factors was obtained through a

structured interview by the investigator of each of the subject district superintendents (See Appendix, Exhibit #10).

The superintendent interview schedule was constructed in four parts. The first part, general questions about the district as a whole, was designed to further establish a favorable rapport with the superintendent and collect background information for discussion purposes. The second portion, questions concerning the teaching staff, served to provide data relative to secondary hypotheses and discussion information. Questions about the administrative staff, the third part, were included to permit a rounded discussion of its characteristics. The final portion, questions concerning the superintendent as a person, was designed to provide data upon which to base the status rating, a major hypothesis, and data directed toward other secondary hypotheses. The interviews were all conducted in the offices of the superintendents involved, and as stated earlier, were arranged for in advance by personal visit by the investigator. The average interview was slightly less than an hour in duration.

3. The degree of open-mindedness displayed by administrative staff members was measured by administering the Rokeach Dogmatism Scale, Form E, to all administrators of the sample districts. While visiting each of the districts,

the investigator obtained the names and assignments of the administrators of the particular district and copies of the opinionnaire were so labeled and distributed to them from the central office. As in the case of the other printed materials, each opinionnaire was accompanied by an explanatory cover letter requesting anonymity and cooperation, as well as a stamped and self-addressed envelope with which the subject might return the completed material (See Appendix, Exhibits #11, #12, and #13).

The Rokeach Dogmatism Scale has been widely used as a tool for measuring the degree of open-mindedness of many different groups of people. A number of research projects have utilized the Rokeach instrument within the field of education to examine a great variety of attitudes and behaviors believed related to dogmatism. LaGattuta[1] and Kirk[2] investigated the relationship of teacher dogmatism and organizational climate. The dogmatism of both principals and teachers was related to teacher morale by

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[1]LaGattuta, Nicholas P., "The Relationship of Teacher Perception of Organizational Climate to Dogmatism." Unpublished Doctor's dissertation, State University of New York, Buffalo, New York, 1966.

[2]Kirk, Treva B., "Behaviors of Teachers New to a Building in Relation to the Climate of the School and the Dogmatism of the Teacher." Unpublished Doctor's dissertation, Michigan State University, East Lansing, Michigan, 1965.

Green.[1] Discipline ideologies were studied by Hoy[2] and their relationship to dogmatism of principals and teachers. And Childs[3] examined the dogmatism of principals and teachers in a comparative study of innovative and non-innovative public school systems.

When all probable responses to the opinionnaire were thought to have been received, they were grouped as having been received from an "innovative" or "non-innovative" district and scored for analysis purposes.

4. The age and extent of the professional preparation of the teaching staff of each of the twenty districts were determined from data obtained from personnel and financial records while visiting each central office. In every case, rosters were made available to the investigator which listed the date of birth of every classroom teacher and the extent of formal professional preparation credited to each individual for salary categorization. Such information was transferred to worksheets and

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[1]Green, James E., "The Relationship Between Dogmatism of Principals and Teachers and Teacher Morale in Twelve Selected Secondary Schools in Michigan." Unpublished Doctor's dissertation, Michigan State University, East Lansing, Michigan, 1966.

[2]Hoy, Wayne K., "Dogmatism and the Pupil Control Ideology of Public School Professional Staff Members." Unpublished Doctor's dissertation, Pennsylvania State University, University Park, Pennsylvania, 1965.

[3]op. cit.

subsequently grouped as having been obtained from either an "innovative" or a "non-innovative" district for comparative purposes.

5. The degree of congruence of goals was determined by administering to all board members, all administrators, and all teachers of the sample within a given district a pencil and paper exercise in which they were asked to rank order the listed goals of American education (See Appendix, Exhibits #14 to #18).

The fifteen common goals of American education used in the exercise were those produced by the 1956 White House Conference on Education as discussed on Stone and Schneider.[1] The investigator was aware of the widely-accepted contention that goals are in a process of evolution, however it was held that the basic issue was not the goals themselves. The intent of the procedure was not to determine the nature of the goals held by the three groups, but to investigate the degree to which they agreed on the relative importance of the goals of a given set. For this purpose, nearly any reasonable set of goals would serve the purposes of the research.

Upon visiting each of the twenty subject districts,

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[1]Stone, James C. and Frederick W. Schneider, Foundations of Education. New York: Thomas Y. Crowell Co., 1965. pp. 34 - 35.

a current personnel directory was obtained. Names of administrators employed by the district were taken from this roll and goal exercises labeled with their names and schools. The entire staff of classroom teachers listed in the directory was numbered consecutively and the names, teaching assignments, and schools of fifteen percent of those listed were obtained through the use of a table of random numbers. Goal exercises were then labeled for each of these subjects. All materials were sorted, grouped by schools, and delivered to a member of the central office clerical staff for distribution to the schools of the district. Sufficient copies of the exercise were left with the superintendent of subject districts for distribution to the members of the board of education at the earliest convenient moment. A cover letter was attached to all exercises, explaining why they were being distributed, emphasizing the desire that all responses be anonymous, and requesting the subjects' cooperation. A stamped and self-addressed envelope was also attached for use by each subject in returning the completed exercise.

Upon receipt of the completed exercises, coefficients of correlation were obtained for the relationships of the three groups in each subject district: the relationship of board members to administrators, board members to

teachers, and administrators to teachers. The data were then separated by district of origin ("innovative" and "non-innovative") and the statistics grouped for purposes of analysis.

## Statistical Hypotheses

The following hypotheses were formulated for statistical testing purposes, inherent in which are the conditions outlined in the operational definitions provided in Chapter I:

$H_{0_1}$ There is no difference between the annual per-pupil financial expenditures of innovative public school districts and the annual per-pupil financial expenditures of non-innovative public school districts.

$H_{0_{1a}}$ There is no difference between the operational millage rates of innovative public school districts and the operational millage rates of non-innovative public school districts.

$H_{0_{1b}}$ There is no difference between the consistency of financial support of innovative public school districts by their communities and the consistency of financial support of non-innovative public school districts by their communities.

$H_{0_2}$ There is no difference between the status ratings of superintendents of innovative public school districts and the status ratings of superintendents of non-innovative public school districts.

$H_{0_{2a}}$ There is no difference between the age of superintendents of innovative public school districts and the age of superintendents of non-innovative public school districts.

$H_{0_{2b}}$ There is no difference between the tenure of superintendents of innovative public school districts and the tenure of superintendents of non-innovative public school districts.

$H_{0_3}$ There is no difference in the degree of open-mindedness of members of administrative staffs of innovative public school districts and the degree of open-mindedness of members of the administrative staffs of non-innovative public school districts.

$H_{0_{4a}}$ There is no difference between the age of the teaching staffs of innovative public school districts and the age of teaching staffs of non-innovative public school districts.

$H_{0_{4b}}$ There is no difference between the level of professional preparation of the teaching staffs of innovative public school districts and the level of professional preparation of the teaching staffs of non-innovative public school districts.

$H_{0_{5a}}$ There is no difference between the degree of goal congruence among teachers and administrators of innovative public school districts and the degree of goal congruence among teachers and administrators of non-innovative public school districts.

$H_{0_{5b}}$ There is no difference between the degree of goal congruence among teachers and members of boards of education of innovative public school districts and the degree of goal congruence among teachers and members of boards of education of non-innovative public school districts.

$H_{0_{5c}}$ There is no difference between the degree of goal congruence among members of boards of education and administrators of innovative public school districts and the degree of goal congruence among members of boards of education and administrators of non-innovative public school districts.

## Procedures for Analysis of the Data

The null hypotheses were tested with the appropriate statistical procedures using methods outlined by Ferguson[1] and Kerlinger[2] as follows:

1. Current Operating Expenditures per pupil means were computed for the 1968-69 school year for the "innovative" and the "non-innovative" school district groups. The "t" test was then employed to determine if the difference was significant. For greater understanding, the Current Operating Expenditures per pupil data were subdivided into the categories of Total Instructional Expense, Elementary Instructional Expense and Secondary Instructional Expense, and means computed for the two groups in each of these subdivisions. The "t" test was applied to determine the significance of the resulting differences.

2. A single status score was computed for each of the twenty subject superintendents, the sum of one point for each $1,000 of annual salary, one point for each semester hour earned beyond the Master's Degree at an accredited university, one point for each one hundred student

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[1]Ferguson, George A., Statistical Analysis in Psychology and Education. New York: McGraw-Hill Book Co., 1966. pp. x - 446.

[2]Kerlinger, Fred N., Foundations of Behavioral Research. New York: Holt, Rinehart, and Winston, Inc., 1967. pp. xix - 739.

enrollment of the district of previous employment, two points for each professional organization membership held, two points for each professional organization office held, two points for each nonprofessional organization membership held, and two points for each nonprofessional organization office held. Status scores were grouped in the two categories of "innovative" and "non-innovative" by district of origin and the means of the two groups computed. The "t" test for statistical significance was subsequently applied to the difference between the two means.

3. Scores obtained on the Rokeach Dogmatism Scale by members of the administrative staffs of the twenty subject districts were computed and grouped by district of origin as "innovative" or "non-innovative." Means for the two groups were derived and the "t" test utilized to determine if the existing difference in means was statistically significant.

4. Data regarding the age of teachers of the subject districts and the extent of professional preparation of these teachers were analyzed separately. Age data, which had been tallied from district rosters, were combined as if all teachers from "innovative" districts were a single staff and all teachers from "non-innovative" districts were a single staff. Mean ages were computed and the "t" test applied to reveal if the difference in means was

statistically significant.

Level of professional preparation data, from the two categories of districts, however, were combined into single tables and frequencies entered reflecting the number of teachers in each of four categories: Less Than a Bachelor's Degree, Bachelor's Degree, Master's Degree, and Specialist's Degree. The comparison of frequencies was then analyzed with the aid of the chi-square process to determine if there were statistically significant differences. Additional insight was sought by grouping all teachers from "innovative" districts in one group and all teachers from "non-innovative" districts in another, computing mean levels of professional preparation, and comparing the means through use of the "t" test.

5. Rank order coefficients of correlation were computed for the three relationships of goal congruence in each subject district. A coefficient was obtained for the relationship of the composite rank-ordering of the fifteen goals by board of education members to the composite rank-ordering of the fifteen goals by administrators within each of the twenty districts. The same was computed for the board member-teacher and administrator-teacher relationships. The twenty coefficients were then grouped by district of origin as either "innovative" or "non-innovative". A mean coefficient was derived from

these groupings and a "t" test applied to the differences in coefficients between innovative and non-innovative groups for each of the three relationships to determine the statistical significance.

## Summary

The design, instrumentation, and methodology used to develop this study from its inception through the data-analysis phase have been described. The sample used in the study was not random, but purposefully selected on the basis of existing data and according to specific criteria. The three-step process included (1) an appeal to an expert panel to narrow the population to a manageable number of innovative districts, (2) the selection of two alternative matching non-innovative districts, on the basis of enrollment and state equalized valuation per pupil, for each of the ten most frequently nominated innovative districts (and the subsequent selection of one matching non-innovative district and confirmation of the collective judgment of the expert panel through use of the 1964 Five Years of Progress data), and (3) the final determination for inclusion of the subject districts through visits to the districts and interviews with instructional leaders.

Data were obtained through use of the structured

interview, examination of financial reports and personnel records, a pencil and paper goal-ordering exercise of the investigator's design, and the Rokeach Dogmatism Scale, Form E. All superintendents, all administrative staff members, and fifteen percent of the teaching staffs selected randomly were used as subjects. The data collected were analyzed using rank order coefficients of correlation, chi-square, and "t" test processes for determining statistical significance of differences.

# CHAPTER IV

# PRESENTATION AND ANALYSIS OF THE DATA

## Introduction

In previous chapters there have been developed a rationale for the research project and a review and discussion of related literature and research. Research and statistical hypotheses have been stated, terms have been defined, and the research design, instrumentation, and data analysis procedures outlined. In this chapter the various comparisons are portrayed and the results of the analyses of the data within that design are presented.

The remainder of the chapter is divided into four sections. Data are presented in the first section regarding the similarities and differences of the twenty public school systems which comprise the "innovative" and "non-innovative" districts grouped for comparative study. The next section, consisting of five subsections, will deal with data and analyses related to the five major variables with which the study is concerned: (1) annual per-pupil financial expenditures, (2) the status of district superintendents, (3) the open-mindedness of administrative staff members, (4) the age and level of professional preparation of teachers, and (5) goal congruence among

teachers, administrators, and members of boards of education. The third section includes a discussion of various relationships which become apparent after consideration of the data relating to the five variables. Finally, there is a brief summary.

The presentation and data analysis of the following pages embodies a number of characteristics worthy of mention before the fact. Emphasis will be placed on those data which relate directly to the five major research hypotheses. Additional analyses will follow the first two major hypotheses and will relate to the secondary hypotheses stated. Following data regarding the other three major hypotheses there is presented only that information deemed particularly essential. The traditional .05 and .01 significance levels will be disregarded and the results of all statistical analyses will be presented and discussed in the form of probabilities. It is believed the acceptance of arbitrary levels of statistical significance establishes unreasonable criteria by which findings may be evaluated and may, in fact, fail to serve the spirit and intent of the research and obscure the genuine value of the data. That is, previously established and arbitrary levels for the rejection or acceptance of the null hypothesis may result in the possibility of a high Type II error, the failure to detect significant

differences when they exist, leading to a failure to recognize significant relationships.

As the basis for the statistical analysis of the data is the comparison of two groups of public school districts in southern lower Michigan, the characteristics of the twenty subject school districts must first be considered.

## Group Characteristics

The twenty school systems involved in this project were purposefully selected according to established criteria and intentionally formed into two groups of ten districts each for comparative study. In order for the research hypotheses to be tested, the two groups were by necessity different in some characteristics. For there to be a valid basis for comparative study, the two groups had to be characterized by some basic similarities. For the data presented later to be understandable, these similarities and differences must be clarified.

### Differences

In Chapter III a three-step process was presented which guided the selection of the ten subject districts of the "innovative" and the ten subject districts of the "non-innovative" groups. A panel of experts was contacted,

provided a statement of selection criteria and a list of the 183 public school districts within the 2,000 to 10,000 pupil enrollment range, and asked to nominate "innovative" school systems. The ten most frequently nominated were accepted as members of the "innovative" group and each group member was tentatively matched, on the basis of state equalized valuation per pupil and total enrollment, with the two districts receiving no nominations by the members of the expert panel (See Appendix, Exhibits #3, #4, #5, and #6).

Data collected by the Michigan State Department of Education in the 1964 Five Years of Progress in Public Education in Michigan survey were utilized to confirm the nominations of the expert panel. In addition, the 1964 data served to determine the status of the two alternative matching districts, enabling the investigator to select the least innovative of each pair for inclusion in the "non-innovative" group.

The final step in the selection process consisted of an application of the selection criteria by the investigator during actual visits to the twenty districts. Superintendents, assistant superintendents for instruction, and directors of curriculum were interviewed and the data collected subjected to the same constructed innovativeness formula utilized in the second step. As in that second

step, innovativeness ratings were computed for all subject districts. Table I summarizes the ratings so derived. (Note: In Table I, and all subsequent tables, amounts and values are listed in descending order and labeled with a district letter solely for reference and discussion purposes. Therefore, a quantity labeled as "Innovative District A" will be the largest quantity in that portion of the table, but might represent data from any one of the ten subject districts of that category. Not only will clarity be served through this procedure, but the complete anonymity of the subject districts will be maintained.)

Table I indicates there were considerable differences discovered between districts of the two groups when current data regarding their innovativeness were obtained. Not only were innovativeness ratings for the members of the Non-Innovative group generally far lower than those of the Innovative group, but they were far more clustered about the mean. Greater diversity was found in the ratings of the Innovative group with the two lowest ratings being below the two highest Non-Innovative district ratings, respectively. These districts were retained within the group, though, due to a diversity of program and practice and an inclination toward change as was reflected in the frequent nominations of the members of the expert panel.

TABLE I

INNOVATIVENESS RATINGS OF SUBJECT DISTRICTS DERIVED FROM DATA COLLECTED UPON PERSONAL VISIT OF DISTRICTS BY INVESTIGATOR

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Rating | District | Rating |
| A | 15.28 | A | 1.15 |
| B | 4.20 | B | .68 |
| C | 3.10 | C | .36 |
| D | 2.37 | D | .22 |
| E | 2.32 | E | .17 |
| F | 2.23 | F | .17 |
| G | 2.04 | G | .14 |
| H | 1.56 | H | .12 |
| I | 1.13 | I | .05 |
| J | .61 | J | .01 |
| Mean: | 3.48 | Mean: | .31 |
| Variance: | 16.084 | Variance: | .109 |

("t" = 2.494, Sig. at p = .025)

The difference, however, in mean innovativeness ratings for the two groups was consistent with the results of the nominations of the expert panel and the confirmation of the 1964 Five Years of Progress data (See Appendix, Exhibit #7). Based on the null hypothesis, statistical analysis of this difference resulted in a "t" value of 2.494, indicating the probability of observing such a difference to be less than .025 ($p = .025$). Though this probability did not attain the level of that computed for the difference in 1964, it remained sufficient to assure the investigator that it was highly probable that the groups were indeed different.

Similarities

The two key characteristics held as vitally important to the making of valid comparisons of the Innovative and Non-Innovative groups were state equalized valuation per pupil and total pupil enrollment. As these were viewed as highly confounding factors, a particular effort was made to equate the two groups in these respects.

Table II reports the results of the attempts of the investigator to match the members of the two groups according to pupil membership. As official membership data were not available at the time of selection for the 1969-70 school year, the matching was done on the basis of

TABLE II

TOTAL PUPIL MEMBERSHIPS OF SUBJECT PUBLIC SCHOOL DISTRICTS, 1969-70*

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Membership** | District | Membership |
| A | 9,400 | A | 8,500 |
| B | 8,400 | B | 8,400 |
| C | 6,000 | C | 7,100 |
| D | 5,800 | D | 6,100 |
| E | 5,200 | E | 4,400 |
| F | 4,700 | F | 4,400 |
| G | 4,600 | G | 3,500 |
| H | 3,400 | H | 3,500 |
| I | 3,200 | I | 3,400 |
| J | 2,800 | J | 2,800 |
| Total: | 53,599 | Total: | 52,050 |

*Source: Department Services Division, Bureau of Administrative Services, Michigan State Department of Education, 1969-70

**Rounded to nearest hundred

Michigan State Department of Education statistics for the 1968-69 school year. Individual memberships have been rounded to the nearest hundred to protect the anonymity of the subject districts, but the totals are reported exactly. As the members of the Innovative group were selected first, the known enrollments and total state equalized valuations and the provision that Non-Innovative districts receive no expert nominations severely limited and reduced the alternative choices. However, the individual listings indicate general matching success and the one percent difference in totals was deemed as nearly equal as was possible under given conditions.

Table III presents the total state equalized valuation of the ten districts in each of the two groups. In addition, the mean S.E.V. per pupil for each group has been computed. Again, individual amounts have been rounded to the nearest thousand to protect the anonymity of the subject districts, however the groups' totals and the mean S.E.V. have been reported exactly. It may be seen that the Non-Innovative group total S.E.V. of $990,157,128 exceeds that of the Innovative group by more than $100,000,000. As the total pupil membership of the Non-Innovative group of districts was nearly 500 fewer students than the Innovative group, the S.E.V. per pupil was nearly 35% greater. In essence, the

TABLE III

TOTAL STATE EQUALIZED VALUATION OF SUBJECT PUBLIC SCHOOL DISTRICTS, 1969-70*

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Total S.E.V.** | District | Total S.E.V. |
| A | $187,851,000 | A | $167,525,000 |
| B | 158,185,000 | B | 156,331,000 |
| C | 118,729,000 | C | 128,640,000 |
| D | 111,858,000 | D | 125,998,000 |
| E | 108,450,000 | E | 114,850,000 |
| F | 92,662,000 | F | 94,811,000 |
| G | 91,957,000 | G | 87,513,000 |
| H | 45,628,000 | H | 50,674,000 |
| I | 30,262,000 | I | 32,896,000 |
| J | 30,044,000 | J | 30,921,000 |
| Total: | $787,762,767 | Total: | $990,157,128 |
| Per Pupil: | 14,697 | Per Pupil: | 19,023 |

*Source: Department Services Division, Bureau of Administrative Services, Michigan State Department of Education, 1969-70

**Rounded to nearest thousand

the available taxable wealth of the Non-Innovative group was substantially greater than the Innovative group, thereby placing the Non-Innovative group in a more favorable financial position.

It may be seen that the two groups are more nearly equated, district by district, on the basis of total taxable wealth than they are on the basis of pupil membership. This is held as the better arrangement in that considerable research indicated the wealth factor of more importance in the study of innovativeness than the pupil membership factor. The matter of district wealth and the extent to which it is utilized is the first of the variables measured and to which attention is now given.

## Major Variables

### Annual per-pupil financial expenditures

As the rationale for this study was being developed and related literature surveyed, it was held that innovative public school systems spent more money per pupil for current educational expenses than did non-innovative districts. It appeared that those kinds of programs and practices selected as indicators of fundamental organizational change would result in districts spending more for the education of each pupil than if more conventional

programs and practices were followed. Therefore, it was hypothesized:

$H_1$ Innovative school districts are characterized by significantly greater annual per-pupil financial expenditures than non-innovative districts.

"Annual per-pupil financial expenditures," however, may be interpreted in a variety of ways. There are presented here data representing three possible interpretations. Based on the reporting categories of the Annual Financial Report (Form B 5-69 4000) required annually of all public school districts by the Michigan State Department of Education, the per-pupil expenditure data are presented as (1) "Total Instructional Expense," (2) "Elementary Instructional Expense" and "Secondary Instructional Expense," and (3) "Total Current Operating Expenditures," as it was defined in Chapter I.

"Total Instructional Expense," according to the Form B, includes 1100 Elementary Instructional Expense, 1200 Secondary Instructional Expense, 1300 Special Education Instructional Expense, 1400 Summer School Instructional Expense, 1500 Adult Education Instructional Expense, 1600 Community College Instructional Expense, and 1900 Unclassified Instructional Expense. Table IV outlines the data reflecting the "Total Instructional Expense" of the subject districts.

The differences in mean annual "Total Instructional

TABLE IV

"TOTAL INSTRUCTIONAL EXPENSE" PER PUPIL OF SUBJECT PUBLIC SCHOOL DISTRICTS, 1968-69*

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Expense** | District | Expense |
| A | $685 | A | $689 |
| B | 674 | B | 595 |
| C | 637 | C | 573 |
| D | 618 | D | 544 |
| E | 603 | E | 505 |
| F | 582 | F | 497 |
| G | 574 | G | 493 |
| H | 486 | H | 470 |
| I | 463 | I | 403 |
| J | 448 | J | 396 |
| Mean: | $577.00 | Mean: | $516.50 |
| Variance: | 6,498.2 | Variance: | 7,049.7 |

("t" = 1.643, Sig. at p = .10)

*Source: Department Services Division, Bureau of Administrative Services, Michigan State Department of Education, 1968-69

**Rounded to the nearest dollar

Expense" per pupil amounts to $60.50 - the Innovative Group expending the greater amount. This was subjected to the statistical analysis of the "t" test. Based on the null hypothesis, the resulting "t" value of 1.643 would indicate the probability of observing such a difference to be less than .10 (p = .10). As the result obtained is in the direction hypothesized and as the District A per-pupil amount in the Non-Innovative group increased the mean and variance considerably (six Innovative districts are above the mean, whereas only four Non-Innovative districts are above the mean), the results are considered as tending to support the research hypothesis stated.

Another way of approaching annual per-pupil financial expenditures data is to consider just those expenditures classified as "Elementary" (1100) and "Secondary" (1200). Official membership data were obtained by grade level for 1968-69 from the State Department of Education and used to derive per-pupil "Elementary" and "Secondary" expenses as shown in Tables V and VI.

Table V indicates the least amount expended for elementary education by an Innovative district to be less than the least amount expended by a Non-Innovative district. On the other hand, the greatest amount expended by an Innovative district is surpassed by the highest

spending Non-Innovative district. The difference in mean annual per-pupil expenditures, if considered on the basis of the null hypothesis, is not particularly rare. Analysis through use of the "t" test produces a "t" value of .952, indicating the probability of observing such a difference as being less than .20 (p = .20).

"Secondary Instructional Expense" data, however, portray a somewhat different picture. Table VI indicates the mean annual Innovative "Secondary Instructional Expense" per pupil to be $630.40. This is $78.40 more than the mean annual Non-Innovative group expenditure. Though the variance within the Innovative group expenditures is considerably greater than that of the other group, it must be noted that four districts of the Innovative group expended greater per-pupil amounts than the highest spending Non-Innovative district. Based on the null hypothesis, statistical analysis of the difference in means produces a "t" value of 1.949, indicating the probability of observing such a difference to be less than .05 (p = .05).

The final alternative method of dealing with annual per-pupil financial expenditures data is in considering the "Total Current Operating Expenditures" as "current expense of education" was defined in Chapter I. Included in this designation are all the Form B categories included in the "Total Instructional Expense," as well as the added

TABLE V

"ELEMENTARY INSTRUCTIONAL EXPENSE" (1100) PER PUPIL OF SUBJECT PUBLIC SCHOOL DISTRICTS, 1968-69*

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Expense** | District | Expense |
| A | $615 | A | $676 |
| B | 565 | B | 537 |
| C | 536 | C | 473 |
| D | 533 | D | 471 |
| E | 525 | E | 471 |
| F | 491 | F | 470 |
| G | 482 | G | 436 |
| H | 478 | H | 383 |
| I | 400 | I | 353 |
| J | 305 | J | 314 |
| Mean: | $493.00 | Mean: | $454.70 |
| Variance: | 6,888.4 | Variance: | 9,264.1 |

("t" = .952, Sig. at p = .20)

*Source: Department Services Division, Bureau of Administrative Services, Michigan State Department of Education, 1968-69

**Rounded to nearest dollar

TABLE VI

"SECONDARY INSTRUCTIONAL EXPENSE" (1200) PER PUPIL OF SUBJECT PUBLIC SCHOOL DISTRICTS, 1968-69*

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Expense** | District | Expense |
| A | $781 | A | $659 |
| B | 740 | B | 638 |
| C | 712 | C | 593 |
| D | 668 | D | 586 |
| E | 667 | E | 560 |
| F | 620 | F | 512 |
| G | 605 | G | 511 |
| H | 602 | H | 509 |
| I | 540 | I | 499 |
| J | 369 | J | 453 |
| Mean: | $630.40 | Mean: | $552.00 |
| Variance: | 12,216.6 | Variance: | 3,948.6 |

("t" = 1.949, Sig. at p - .05)

*Source: Department Services Division, Bureau of Administrative Services, Michigan State Department of Education, 1968-69

**Rounded to nearest dollar

categories of 2100 Expenditures for Administration, 2200 Expenditures for Attendance, 2300 Expenditures for Health Services, 2400 Pupil Transportation Expense, 2500 Operation Expense, 2600 Maintenance Expense, and 2700 Fixed Charges Expense. These combined per-pupil expenditures, including all fourteen current expense categories, are summarized in Table VII.

The greatest difference in means is obtained in the comparison of "Current Operating Expenditures" in Table VII. With the inclusion of the other seven non-instructional expense categories, the difference amounts to $82.70. Statistical analysis, based on the null hypothesis, results in a "t" value of 1.715, indicating the probability of less than .10 that such a difference would be observed ($p = .10$).

In summary, analysis of annual per-pupil financial expenditures data resulted in mean differences in each of the three comparison methods. All differences were in the direction hypothesized, i.e., that districts of the Innovative group would expend greater amounts. Probabilities that such differences would be observed were found to be less than .10, .20, .05, and .10, respectively for the four comparisons made. Considered totally, the statistical analysis indicates considerable support for the research hypothesis.

TABLE VII

"TOTAL CURRENT OPERATING EXPENDITURES" PER PUPIL OF SUBJECT PUBLIC SCHOOL DISTRICTS, 1968-69*

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Expenditures** | District | Expenditures |
| A | $889 | A | $927 |
| B | 865 | B | 773 |
| C | 858 | C | 736 |
| D | 840 | D | 720 |
| E | 783 | E | 671 |
| F | 768 | F | 642 |
| G | 766 | G | 634 |
| H | 645 | H | 629 |
| I | 613 | I | 537 |
| J | 593 | J | 524 |
| Mean: | $762.00 | Mean: | $679.30 |
| Variance: | 10,698.2 | Variance: | 12,541.6 |

("t" = 1.715, Sig. at p = .10)

*Source: Department Services Division, Bureau of Administrative Services, Michigan State Department of Education, 1968-69

**Rounded to nearest dollar

Operational millage rates. It would follow that if the two groups of public school districts selected for this comparative study were equated on the basis of state equalized valuation per pupil and if it were found that the Innovative group expended greater amounts of money in current operating expenditures per pupil, there would be found higher operational millage rates in that group. As this reasoning seemed sound, it was hypothesized:

$H_{1a}$ Innovative school districts are characterized by significantly higher operational millage rates than are non-innovative districts.

A difference in mean operational millage rates, in the direction hypothesized, was found. Table VIII depicts the operational rates of the twenty districts included in the study for the 1969-70 school (fiscal) year. It can be seen that there was nearly a 5.5 mill difference in mean rates. Though there was considerable range and variance, a computed critical ratio, based on the null hypothesis, yielded a "t" value of 2.732, indicating the probability of observing such a difference in means to be less than .025 ($p = .025$).

TABLE VIII

OPERATIONAL MILLAGE RATES OF SUBJECT PUBLIC SCHOOL DISTRICTS, 1969-70

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Rate | District | Rate |
| A | 27.70 | A | 16.50 |
| B | 24.50 | B | 16.50 |
| C | 21.40 | C | 16.00 |
| D | 19.13 | D | 15.50 |
| E | 18.00 | E | 15.00 |
| F | 18.00 | F | 14.00 |
| G | 17.00 | G | 12.50 |
| H | 16.00 | H | 9.50 |
| I | 13.50 | I | 9.00 |
| J | 8.70 | J | 4.50 |
| Mean: | 18.393 | Mean: | 12.900 |
| Variance: | 25.938 | Variance: | 14.540 |

("t" = 2.732, Sig. at p = .025)

Community support of education. In addition to hypothesizing that the Innovative districts would spend more money in current operational expenses and would be levying higher operational millage rates, it was also hypothesized:

> $H_{1b}$ Innovative school districts are characterized by a history of financial support by their communities significantly more consistent than non-innovative districts.

In order to develop statistics to either support or discount the hypothesis, data were collected concerning the successful and unsuccessful operational millage and bond elections during the five-year period 1964-65 through 1968-69.

Within the Innovative districts there were fity-five elections for operational millage during the five years. Of these, thirty-seven elections resulted in the issue being defeated and eighteen resulted in passage of the millage. Computed on a district by district basis, the members of the Innovative group showed a mean percent of success of 69%. On the other hand, the mean percent of success for members of the Non-Innovative group was 65%, the millage issues passing twenty-three of the thirty-five times attempted. The difference in mean percents, approximately four points, was in the direction hypothesized and indicated that over the five-year period studied, a greater portion of millage elections in

Innovative districts were successful than in Non-Innovative districts. Subjected to a "t" test, the probability of observing this difference, based on the null hypothesis, was found to be less than .35 (p = .35).

During the same five-year period, there were nineteen elections for construction bonds within the ten districts of the Innovative group. In these elections fifteen out of the nineteen resulted in approval by the voters. Analysis of the success-failure ratio indicates the Innovative districts enjoyed a mean percent of success of approximately 75%. Within the Non-Innovative group only eight of seventeen elections resulted in the authorization of the bonds for a mean success percent of approximately 42%. Again the difference in mean percents was in the direction hypothesized. There was an indication that within the Innovative districts the communities did support the passage of bond issues more consistently than in the Non-Innovative districts. Based on the null hypothesis, the probability of observing such a difference, when subjected to "t" test analysis, was found to be less than .25 (p = .25).

## Superintendent status

Related research and literature suggested that the success of change efforts in innovative school systems

was in some way associated with the status of the superintendent, the chief administrator. Therefore, it was hypothesized:

$H_2$ Innovative school districts are characterized by superintendents of significantly greater status than are non-innovative districts.

There was some evidence to indicate that particular factors comprised the status, such as salary, level of professional preparation, enrollment of the district of previous employment, and memberships and offices held in professional and nonprofessional organizations. The data collected in personal interviews with the twenty superintendents are portrayed in Table IX. All amounts have been rank ordered from greatest to least for ease of analysis. All amounts of a given row are not necessarily related to any one individual subject.

The seven factors were combined according to the formula presented in Chapter III to derive a status rating for each of the subject superintendents. The rating of a particular subject was the result of combining one point for each $1,000 of salary, one point for each semester hour of academic credit beyond the Master's Degree, one-half point for each one hundred students enrolled in the district of previous employment (at the time of leaving it), two points for each membership held in a professional organization, two points for each

TABLE IX

RELATIVE INCIDENCE OF FACTORS COMPRISING STATUS OF SUPERINTENDENTS OF SUBJECT PUBLIC SCHOOL DISTRICTS

| Factor: | I* | II | III | IV | V | VI | VII |
|---|---|---|---|---|---|---|---|
| District | | | INNOVATIVE GROUP | | | | |
| A | 32 | 60 | 140 | 8 | 7 | 8 | 6 |
| B | 30 | 60 | 75 | 7 | 4 | 5 | 3 |
| C | 28 | 60 | 60 | 5 | 3 | 3 | 2 |
| D | 27 | 60 | 60 | 5 | 3 | 3 | 2 |
| E | 26 | 60 | 60 | 5 | 2 | 3 | 1 |
| F | 26 | 60 | 50 | 5 | 2 | 2 | 1 |
| G | 22 | 40 | 28 | 4 | 0 | 2 | 0 |
| H | 22 | 36 | 27 | 3 | 0 | 2 | 0 |
| I | 21 | 30 | 9 | 3 | 0 | 1 | 0 |
| J | 20 | 22 | 0 | 3 | 0 | 0 | 0 |
| Mean: | 24.5 | 48.8 | 50.9 | 4.8 | 2.1 | 2.9 | 1.5 |
| District | | | NON-INNOVATIVE GROUP | | | | |
| A | 30 | 85 | 160 | 6 | 3 | 4 | 2 |
| B | 28 | 46 | 120 | 4 | 2 | 4 | 2 |
| C | 26 | 45 | 50 | 4 | 2 | 2 | 2 |
| D | 26 | 30 | 45 | 3 | 1 | 2 | 1 |
| E | 24 | 30 | 33 | 3 | 1 | 2 | 1 |
| F | 23 | 18 | 28 | 2 | 1 | 2 | 1 |
| G | 23 | 10 | 9 | 2 | 0 | 2 | 1 |
| H | 23 | 0 | 5 | 2 | 0 | 1 | 0 |
| I | 21 | 0 | 0 | 2 | 0 | 1 | 0 |
| J | 20 | 0 | 0 | 2 | 0 | 1 | 0 |
| Mean: | 24.4 | 26.4 | 45.0 | 3.0 | 1.0 | 2.1 | 1.0 |

*Factor I - Salary in $1,000's, II - Semester hours beyond MA, III - Enrollment of Previous District of Employment in 100's, IV - Professional Organization Memberships, V - Professional Organization Offices, VI - Nonprofessional Organization Memberships, VII - Nonprofessional Organization Offices

office held in a professional organization, two points for each membership in a nonprofessional organization, and two points for each office held in a nonprofessional organization. The total ratings thus derived are summarized in Table X.

It can be seen in Table X that the difference in mean status ratings of 36.2 points was in the direction hypothesized. Based on the null hypothesis, this difference, when subject to a "t" test, results in a "t" value of 2.772. The probability of observing a difference of this magnitude is found to be less than .025 ($p = .025$).

Superintendent age. In addition to the major hypothesis regarding status, it was hypothesized:

> $H_{2a}$ Innovative school districts are characterized by significantly younger superintendents than non-innovative districts.

As Table XI indicates, a difference in the mean ages of the two groups of superintendents was found. The mean age of the members of the Innovative group is 4.3 years less, as hypothesized, than that of the Non-Innovative group. Based on the null hypothesis, analysis of this difference through use of the "t" test yields a "t" value of 1.15. Therefore, it may be said that the probability of observing such a difference in means is less than .15 ($p = .15$).

TABLE X

STATUS RATINGS OF SUPERINTENDENTS OF SUBJECT PUBLIC SCHOOL DISTRICTS

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Rating | District | Rating |
| A | 145 | A | 158 |
| B | 144 | B | 130 |
| C | 142 | C | 114 |
| D | 140 | D | 95 |
| E | 137 | E | 80 |
| F | 129 | F | 79 |
| G | 120 | G | 69 |
| H | 118 | H | 56 |
| I | 86 | I | 53 |
| J | 80 | J | 45 |
| Mean: | 124.1 | Mean: | 87.9 |
| Variance: | 505.0 | Variance: | 1,200.0 |

("t" = 2.772, Sig. at p = .025)

TABLE XI

AGE AND TENURE OF SUPERINTENDENTS OF SUBJECT PUBLIC SCHOOL DISTRICTS

| INNOVATIVE GROUP | | | NON-INNOVATIVE GROUP | | |
|---|---|---|---|---|---|
| District | Age | Tenure | District | Age | Tenure |
| A | 64 | 17 | A | 63 | 19 |
| B | 52 | 13 | B | 62 | 18 |
| C | 49 | 8 | C | 61 | 17 |
| D | 48 | 5 | D | 59 | 5 |
| E | 48 | 3 | E | 53 | 5 |
| F | 44 | 3 | F | 47 | 4 |
| G | 44 | 2 | G | 42 | 4 |
| H | 43 | 2 | H | 42 | 2 |
| I | 40 | 1 | I | 41 | 1 |
| J | 35 | 1 | J | 40 | 1 |
| Mean: | 46.7 | 5.5 | Mean: | 51.0 | 7.6 |
| Variance: | 54.6 | 27.25 | Variance: | 83.2 | 48.44 |

(Age - "t" = 1.15, Sig. at p = .15)
(Tenure - "t" = .763, Sig. at p = .25)

Superintendent tenure. Finally, it was hypothesized:

$H_{2b}$ Innovative school districts are characterized by superintendents with significantly shorter tenure in their positions than are non-innovative districts.

Table XI also lists the tenure of each of the twenty subject superintendents in his position. As was hypothesized, the mean tenure of the superintendents in the Innovative group is 1.9 years less than that of the Non-Innovative group. Analysis by "t" test yields a "t" value of .763. Based on the null hypothesis, the probability of observing such a difference would be less than .25 ($p = .25$).

Administrator open-mindedness

Related research and literature suggested that the success of attempts to bring about fundamental organizational change within public school districts was in some way associated with the open-mindedness of the districts' administrative staff members. Therefore, it was hypothesized:

$H_3$ Innovative school districts are characterized by significantly more open-minded (less dogmatic) administrative staff members than are non-innovative districts.

It was determined that open-mindedness would be accepted as the factor of dogmatism or inflexibility of thinking as measured by the Rokeach Dogmatism Scale, Form E. Within the ten Innovative public school districts

there were copies of the Rokeach Scale, titled "Opinionnaire," distributed to 131 administrative staff members. Seventy-three percent (95) of these "Opinionnaires" were completed by staff members and returned to the investigator. Within the Non-Innovative school districts 114 "Opinionnaires" were distributed to administrative staff members, of which ninety-six, or eighty-four percent, were completed and returned.

The completed opinionnaires were scored by adding four points to each continuum value (omitting every third item), as suggested by Rokeach, and combining all resulting values for a total score. The scores of the 191 subjects are reported in Table XII.

Analysis of the Rokeach Dogmatism Scale scores of the two groups produced a mean score for the subjects of the Innovative group of 132.357. For the administrative staff members of the Non-Innovative group a mean Rokeach score of 135.979 was computed. The difference in mean scores of 3.623 points was subjected to analysis by the "t" test and a value of 1.194 resulted. According to established tables of "t" distribution, based on the null hypothesis, the probability of observing such a difference in mean scores would be less than .15 ($p = .15$).

TABLE XII

FREQUENCY DISTRIBUTION OF ROKEACH DOGMATISM SCALE SCORES OF ADMINISTRATIVE STAFF MEMBERS OF SUBJECT PUBLIC SCHOOL DISTRICTS

| Interval | I* | N** | Interval | I | N |
|---|---|---|---|---|---|
| 71 - 75 | 1 | 0 | 141 - 145 | 10 | 4 |
| 76 - 80 | 2 | 2 | 146 - 150 | 6 | 10 |
| 81 - 85 | 0 | 1 | 151 - 155 | 4 | 4 |
| 86 - 90 | 0 | 0 | 156 - 160 | 4 | 4 |
| 91 - 95 | 2 | 1 | 161 - 165 | 3 | 8 |
| 96 - 100 | 6 | 3 | 166 - 170 | 0 | 2 |
| 101 - 105 | 2 | 3 | 171 - 175 | 2 | 2 |
| 106 - 110 | 3 | 5 | 176 - 180 | 3 | 0 |
| 111 - 115 | 8 | 6 | 181 - 185 | 2 | 0 |
| 116 - 120 | 7 | 5 | 186 - 190 | 1 | 0 |
| 121 - 125 | 12 | 7 | 191 - 195 | 0 | 2 |
| 126 - 130 | 4 | 4 | 196 - 200 | 1 | 1 |
| 131 - 135 | 5 | 9 | 201 - 205 | 0 | 0 |
| 136 - 140 | 7 | 12 | 206 - 210 | 0 | 1 |

| | | | |
|---|---|---|---|
| ("t" = 1.194, Sig. at p = .15) | Number: | 95 | 96 |
| | Mean: | 132.357 | 135.979 |
| | Variance: | 517.025 | 360.826 |

*Innovative Group
**Non-Innovative Group

Validity and reliability. The Rokeach Dogmatism Scale was accepted by the investigator as a valid instrument for measuring the extent to which a person's belief system is open or closed. Its developer conducted extensive research to validate the basic forty opinionnaire questions involved. The instrument has been widely accepted and utilized in many respected research projects, as a result of Rokeach's findings.[1]

The reliability of the Scale also has been established to the satisfaction of the investigator. Rokeach[2] reported reliability coefficients ranging from .68 to .85 for Form E, the form used in this project. A corrected split-half reliability of .86 for the Dogmatism Scale was later reported by Hough.[3] In view of these findings, a test-retest reliability check was deemed not a necessary part of this research effort.

## Teacher age and professional preparation

As discussed earlier, a number of writers in the area of innovation and change within public school

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[1]Rokeach, Milton, The Open and Closed Mind. New York: Basic Books, Inc., 1960. pp. xv - 447.

[2]Ibid.

[3]Hough, J. B., "The Dogmatism Factor in Human Relations Training of Pre-Service Teachers." Paper presented at the American Research Association, Chicago, Illinois, February, 1965.

systems have considered the factors of teacher age and level of professional preparation. There appeared to be consensus in the contention that the two elements were associated in some way with successful efforts at organizational change. Therefore, it was hypothesized:

$H_{4a}$ Innovative school districts are characterized by significantly younger teaching staffs than are non-innovative districts.

$H_{4b}$ Innovative school districts are characterized by teaching staffs with significantly higher levels of professional preparation than non-innovative districts.

Teacher age. Data were collected in each of the twenty public school districts regarding the age of teachers. Age was defined as the number of years elapsing between the year of birth recorded for each teacher on official district personnel rosters and the year 1969. A teacher was defined as a certificated employee engaged for more than half of his time in classroom teaching. Age data of all teachers employed by the ten districts of the Innovative category were grouped in one combined frequency distribution. Data from the ten Non-Innovative districts were similarly combined. These data are presented in Table XIII.

It may be seen in Table XIII that there were 2,471 teachers included in the Innovative group, ranging from age nineteen to sixty-nine years. Within the Non-Innovative group there were 2,299 teachers ranging in age from

TABLE XIII

FREQUENCY DISTRIBUTION OF AGES OF MEMBERS OF TEACHING STAFFS OF SUBJECT PUBLIC SCHOOL DISTRICTS

| INNOVATIVE GROUP | | | | NON-INNOVATIVE GROUP | | | |
|---|---|---|---|---|---|---|---|
| Age | No. | Age | No. | Age | No. | Age | No. |
| 19 | 1 | 46 | 38 | 19 | 0 | 46 | 44 |
| 20 | 1 | 47 | 51 | 20 | 1 | 47 | 48 |
| 21 | 20 | 48 | 45 | 21 | 12 | 48 | 44 |
| 22 | 101 | 49 | 42 | 22 | 120 | 49 | 47 |
| 23 | 163 | 50 | 38 | 23 | 157 | 50 | 34 |
| 24 | 142 | 51 | 33 | 24 | 128 | 51 | 31 |
| 25 | 146 | 52 | 25 | 25 | 123 | 52 | 35 |
| 26 | 152 | 53 | 26 | 26 | 112 | 53 | 35 |
| 27 | 142 | 54 | 34 | 27 | 97 | 54 | 37 |
| 28 | 115 | 55 | 25 | 28 | 81 | 55 | 31 |
| 29 | 91 | 56 | 24 | 29 | 59 | 56 | 45 |
| 30 | 67 | 57 | 17 | 30 | 70 | 57 | 29 |
| 31 | 68 | 58 | 27 | 31 | 52 | 58 | 35 |
| 32 | 63 | 59 | 29 | 32 | 51 | 59 | 32 |
| 33 | 66 | 60 | 34 | 33 | 31 | 60 | 34 |
| 34 | 49 | 61 | 27 | 34 | 53 | 61 | 36 |
| 35 | 51 | 62 | 22 | 35 | 45 | 62 | 20 |
| 36 | 56 | 63 | 18 | 36 | 37 | 63 | 21 |
| 37 | 47 | 64 | 12 | 37 | 46 | 64 | 23 |
| 38 | 55 | 65 | 6 | 38 | 43 | 65 | 4 |
| 39 | 51 | 66 | 7 | 39 | 40 | 66 | 1 |
| 40 | 42 | 67 | 1 | 40 | 48 | 67 | 1 |
| 41 | 31 | 68 | 0 | 41 | 52 | 68 | 2 |
| 42 | 51 | 69 | 1 | 42 | 47 | 69 | 0 |
| 43 | 38 | 70 | 0 | 43 | 40 | 70 | 0 |
| 44 | 45 | 71 | 0 | 44 | 45 | 71 | 1 |
| 45 | 35 | 72 | 0 | 45 | 39 | 72 | 0 |

| | | | |
|---|---|---|---|
| Number: | 2,471 | Number: | 2,299 |
| Mean Age: | 35.766 | Mean Age: | 37.385 |
| Variance: | 142.280 | Variance: | 160.518 |

("t" = 4.573, Sig. at p = .001)

twenty to seventy-one years. The mean age of teachers in the Innovative group was 35.766 years, while in the Non-Innovative group it was 37.385 years. The difference of 1.619 years, when subjected to the analysis of the "t" test, yielded a "t" value of 4.573. Based on the null hypothesis and existing tables of the value of "t," the probability of observing such a difference is less than .001 ($p = .001$).

Teacher professional preparation. Data also were collected in each of the twenty public school districts regarding the level of professional preparation of teachers. Though not perfect, the best indicator was accepted as the academic degrees possessed by members of the teaching staffs and the number of semester hours of work completed beyond various degrees, as established by the subject districts for salary classification purposes. The same definition of "teacher" was utilized as in the collection of age data.

It was found that the mean level of preparation of the teachers of the Innovative districts was 134.772 semester hours of credit, i.e., a Bachelor's Degree plus 14.772 semester hours, assuming the baccalaureate degree as the equivalent of 120 semester hours of credit. Within the Non-Innovative districts the mean level of

preparation was found to be 134.259 semester hours. The difference of .513 semester hours was in the direction hypothesized - a higher mean level of professional preparation for teachers of Innovative districts. Based on the null hypothesis, statistical analysis results in a "t" value of 1.075. According to tables of the value of "t" the probability of observing such a difference, with nearly 5,000 subjects involved, would be less than .15 ($p = .15$).

Perhaps the difference in preparation levels might be more easily seen if the numbers of teachers at various stages of professional preparation were considered. Table XIV presents the frequencies with which subjects in the Innovative and Non-Innovative groups were observed to have attained four specific levels of professional preparation. It can be seen that there were twenty-one teachers in the ten Innovative districts who did not possess a Bachelor's Degree, while in the Non-Innovative districts there were only fourteen. In the Bachelor's Degree category there were found 1,578 teachers in Innovative districts and 1,414 in the Non-Innovative. Innovative districts employed 867 teachers with Master's Degrees, while Non-Innovative districts employed 800. Finally, in the Specialist category, there were eighty-four such degree-holders among teachers of the Innovative group, but only

forty within the Non-Innovative group. Overall, 2,550 teachers were found to be employed by the Innovative districts and 2,268 by the Non-Innovative.

TABLE XIV

DISTRIBUTION OF TEACHERS EMPLOYED BY SUBJECT PUBLIC SCHOOL DISTRICTS ACCORDING TO LEVEL OF PROFESSIONAL PREPARATION

| | INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|---|
| Preparation Level | Frequency Observed | Frequency Expected | Frequency Observed | Frequency Expected |
| Less Than Bachelor's Degree | 21 | 17.850 | 14 | 15.876 |
| Bachelor's Degree | 1,578 | 1,583.550 | 1,414 | 1,408.428 |
| Master's Degree | 867 | 879.750 | 800 | 782.460 |
| Specialist's Degree + | 84 | 63.750 | 40 | 56.700 |
| Total: | 2,550 | | 2,268 | |

It would be expected, on the basis of the numbers of teachers and districts involved, that there would be little difference in the manner in which the frequencies would be distributed in the various preparation categories. However, chi-square analysis results in a value of 12.745. Frequencies in the Innovative Bachelor's and Master's

categories were found to be less than expected, but more than expected were at the Specialist's level. Within the Non-Innovative districts these findings were reversed. Based on the null hypothesis and tables of chi-square value, it may be stated that the probability of observing such differences in frequencies would be less than .01 ($p = .01$).

Goal congruence

It was reasoned, on the basis of existing research data and literature, that within those public school systems in which fundamental organizational changes had taken place there would be found greater agreement concerning the relative importance of the common goals of American education than in districts where such changes had not taken place. The investigator accepted the rather common contention that planned organizational change is positively related to congruence of goal perceptions. Therefore, it was hypothesized:

$H_5$ Innovative school districts are characterized by a significantly greater degree of congruence of goals among members of boards of education, administrators, and teachers than are non-innovative districts.

Data were collected to determine if a relationship existed between organizational change and the congruence of goal perceptions. Goal-ordering exercises were

developed and distributed to all board of education members, all administrators, and fifteen percent of the teachers, selected randomly, of the districts of the Innovative group. The same was done in districts of the Non-Innovative group. Within the Innovative group 377 teachers, 131 administrators, and 70 board of education members were contacted. Completed exercises were returned by 79.6% of the teachers, 76.3% of the administrators, and 67.1% of the board of education members. Three hundred forty-nine teachers, 114 administrators, and 70 board of education members were contacted within the Non-Innovative districts. Of them, 74.3%, 86.8%, and 61.4%, respectively, returned the completed goal-ordering exercise.

When returns were in, a composite rank-ordering was determined for each of the six groups: Innovative teachers, Innovative administrators, Innovative board members, Non-Innovative teachers, Non-Innovative administrators, and Non-Innovative board members. Rank order correlation coefficients were computed to determine the degree to which the Innovative teacher rank-ordering was similar to the Innovative administrator rank-ordering, the Non-Innovative teacher rank-ordering was similar to the Non-Innovative administrator rank-ordering, etc. Mean coefficients were then computed for the two groups of

districts in each of the three relationships, i.e., teacher-administrator, teacher-board member, and administrator-board member.

Teacher-administrator correlation. Table XV lists the coefficients of correlation of rank-orderings of teachers with administrators in each of the ten Innovative districts and the coefficients of correlation of the rank-orderings of the same two groups within the ten Non-Innovative districts. It may be seen that very little difference in means exists. The difference of .014 is not in the direction hypothesized. Furthermore, application of the "t" test results in a "t" value of .222, indicating the probability of observing such a difference, based on the null hypothesis, to be approximately .50 ($p = .50$).

TABLE XV

COEFFICIENTS OF CORRELATION OF TEACHER AND ADMINISTRATOR COMPOSITE RANK-ORDERINGS OF GOALS OF AMERICAN EDUCATION WITHIN THE SUBJECT PUBLIC SCHOOL DISTRICTS

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Coefficient | District | Coefficient |
| A | .875 | A | .882 |
| B | .857 | B | .825 |
| C | .850 | C | .818 |
| D | .846 | D | .800 |
| E | .829 | E | .767 |
| F | .786 | F | .761 |
| G | .739 | G | .703 |
| H | .721 | H | .693 |
| I | .450 | I | .689 |
| J | .307 | J | .461 |
| Mean: | .726 | Mean: | .740 |
| Variance: | .033 | Variance: | .012 |

("t" = .222, Sig. at p = .50)

Teacher-board correlation. The rank-orderings of teacher groups, when compared with the rank-orderings of members of boards of education, result in similar coefficients of correlation in both the Innovative and Non-Innovative categories. As Table XVI illustrates, similar means and variances indicate very little difference between the degree of agreement among the rank-orderings of the two groups in the Innovative category and the degree achieved by the two groups in the Non-Innovative category. The difference of only .011 is not in the direction hypothesized. When analyzed with the "t" test, it results in a "t" value of .096. Based on the null hypothesis, this suggests the probability of observing such a difference to be near .50 (p = .50).

TABLE XVI

COEFFICIENTS OF CORRELATION OF TEACHER AND BOARD OF EDUCATION MEMBER COMPOSITE RANK-ORDERINGS OF GOALS OF AMERICAN EDUCATION WITHIN THE SUBJECT PUBLIC SCHOOL DISTRICTS

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Coefficient | District | Coefficient |
| A | .821 | A | .944 |
| B | .782 | B | .900 |
| C | .779 | C | .854 |
| D | .767 | D | .792 |
| E | .764 | E | .743 |
| F | .746 | F | .700 |
| G | .674 | G | .682 |
| H | .607 | H | .593 |
| I | .592 | I | .592 |
| J | .429 | J | .271 |
| Mean: | .696 | Mean: | .707 |
| Variance: | .013 | Variance: | .124 |

("t" = .096, Sig. at p = .50)

Administrator-board correlation. The composite rank-orderings of goals by administrators, when compared with the composite rank-orderings of members of boards of education within the Innovative and Non-Innovative categories, again result in similar means. Though somewhat less than the mean coefficients of the other two relationships, the difference of .068, as shown in Table XVII, yields a "t" value of .819 when analyzed with the "t" test. According to existing tables of "t" value, based on the null hypothesis, the probability of observing this difference, which is in the direction hypothesized, is less than .25 ($p = .25$).

It may be seen that in all three relationships considerable agreement existed concerning the relative importance of the goals of American education. It may be said that generally goal congruence is high, but slightly higher in some instances than in others.

TABLE XVII

COEFFICIENTS OF CORRELATION OF ADMINISTRATOR AND BOARD OF EDUCATION MEMBER COMPOSITE RANK-ORDERINGS OF GOALS OF AMERICAN EDUCATION WITHIN THE SUBJECT PUBLIC SCHOOL DISTRICTS

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Coefficient | District | Coefficient |
| A | .860 | A | .782 |
| B | .828 | B | .775 |
| C | .775 | C | .757 |
| D | .768 | D | .750 |
| E | .657 | E | .696 |
| F | .650 | F | .589 |
| G | .639 | G | .589 |
| H | .614 | H | .514 |
| I | .518 | I | .418 |
| J | .486 | J | .185 |
| Mean: | .680 | Mean: | .612 |
| Variance: | .014 | Variance: | .248 |

("t" = .819, Sig. at p = .25)

Validity and reliability. The goal-ordering exercise developed and utilized by the investigator in this portion of the data gathering is accepted as valid in that there are no reasons to suspect the respondents were providing anything less than honest responses. There appeared no evidence to hint that teachers, administrators, and board of education members involved did other than anonymously rank-order the fifteen common goals of American education according to their perceptions of the goals' relative importance.

The reliability of the instrument was checked through the process of retesting. After an interval of four weeks, the teachers of a randomly-selected district were again sent a goal-ordering exercise with a cover letter requesting another response "in order to determine the extent to which perceptions might have changed." A test-retest reliability coefficient of .918 was computed. This is quite high and deemed adequate assurance of the reliability of the instrument.

## Exploration of Relationships

In addition to the comparisons which have been made in the data analyses so far, further comparisons were made possible by the statistics of Tables XVIII and XIX. The ten districts of each group were rank-ordered (from

greatest to least) on the basis of sixteen factors for which data have already been presented. Five other factors of interest (percent of federal revenues, Rokeach Dogmatism Scale means by district, percent of teacher turnover for 1969-70, and mean teacher age and mean level of teacher professional preparation by district) were added and each factor correlated with all other factors. The two tables consist of these computed rank order coefficients for each of the two groups. Some interesting similarities and differences of the two groups become apparent.

Factors Four, Five, Six, and Seven, the four categorizations of financial expenditures, would be expected to correlate positively and rather highly with one another. Within the Non-Innovative group the coefficients depicting the degree of similarily with which these four items are rank-ordered are all .90 or more. Within the Innovative group the corresponding coefficients are generally less. The degree to which "Elementary Instructional Expense" correlates with the others is particularly revealing. It would appear that among the members of the Non-Innovative group there are more consistent proportions of expenses devoted to the various categories of expenditures.

Within the Non-Innovative group there appears to

## TABLE XVIII

### RANK ORDER INTERCORRELATION OF TWENTY-ONE FACTORS, INNOVATIVE DISTRICTS

| | Factor | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Enrollment, 69-70 | | | | | | | | | | | | | | | | | | | | 24* |
| 2. | Innovativeness, 69-70 | | | | | | | | | | | | | | | | | | | 43 | 28 |
| 3. | SEV Per Pupil, 69-70 | | | | | | | | | | | | | | | | | | 31 | 33 | 55 |
| 4. | Total Instruct. Exp. | | | | | | | | | | | | | | | | | 72 | 15 | 19 | 01** |
| 5. | Elem. Instruct. Exp. | | | | | | | | | | | | | | | | 66 | 73 | 55 | 42 | 38 |
| 6. | Sec. Instruct. Exp. | | | | | | | | | | | | | | | 70 | 62 | 93 | 36 | 16 | 52 |
| 7. | Tot. Cur. Oper. Exp. | | | | | | | | | | | | | | 83 | 36 | 50 | 76 | 18 | 07 | 33 |
| 8. | Oper. Millage, 69-70 | | | | | | | | | | | | | 20 | 37 | 89 | 15 | 14 | 13 | 41 | 09 |
| 9. | % Fed. Rev., 68-69 | | | | | | | | | | | | 19 | 87 | 54 | 79 | 36 | 62 | 36 | 44 | 53 |
| 10. | Supt. Status | | | | | | | | | | | 58 | 01 | 41 | 61 | 38 | 22 | 67 | 31 | 27 | 90 |
| 11. | Supt. Salary | | | | | | | | | | 52 | 66 | 20 | 21 | 26 | 20 | 20 | 45 | 09 | 24 | 32 |
| 12. | Supt. Ed. Level | | | | | | | | | 33 | 62 | 16 | 30 | 05 | 16 | 08 | 25 | 31 | 21 | 42 | 68 |
| 13. | Supt. Age | | | | | | | | 37 | 03 | 35 | 48 | 32 | 20 | 02 | 56 | 15 | 03 | 13 | 16 | 15 |
| 14. | Supt. Tenure | | | | | | | 38 | 64 | 09 | 03 | 31 | 08 | 44 | 37 | 58 | 71 | 37 | 13 | 08 | 22 |
| 15. | Mean Rokeach Score | | | | | | 03 | 13 | 33 | 14 | 16 | 09 | 26 | 19 | 30 | 27 | 62 | 35 | 10 | 53 | 24 |
| 16. | % Teacher Turnover | | | | | 10 | 36 | 03 | 31 | 48 | 19 | 14 | 35 | 19 | 35 | 42 | 10 | 10 | 39 | 08 | 25 |
| 17. | Mean Teacher Age | | | | 02 | 04 | 08 | 18 | 56 | 53 | 89 | 56 | 01 | 61 | 73 | 52 | 44 | 85 | 03 | 20 | 83 |
| 18. | Mean Teacher Prep. | | | 27 | 01 | 20 | 52 | 37 | 35 | 21 | 03 | 36 | 67 | 61 | 66 | 52 | 66 | 59 | 03 | 25 | 05 |
| 19. | T-A Goal Congruence | | 27 | 54 | 31 | 04 | 82 | 13 | 45 | 41 | 08 | 37 | 10 | 35 | 24 | 32 | 48 | 26 | 25 | 25 | 14 |
| 20. | T-B Goal Congruence | 54 | 44 | 14 | 53 | 26 | 65 | 65 | 52 | 20 | 07 | 66 | 35 | 14 | 44 | 71 | 48 | 24 | 47 | 04 | 04 |
| 21. | A-B Goal Congruence | | | | | | | | | | | | | | | | | | | | |

*Coefficients portrayed as whole numbers due to lack of space for decimal.
**Negative amounts are underlined.

## TABLE XIX

### RANK ORDER INTERCORRELATION OF TWENTY-ONE FACTORS, NON-INNOVATIVE DISTRICTS

| | Factor | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Enrollment, 69-70 | | | | | | | | | | | | | | | | | | | | 54* |
| 2. | Innovativeness, 69-70 | | | | | | | | | | | | | | | | | | | 71 | 30 |
| 3. | SEV Per Pupil, 69-70 | | | | | | | | | | | | | | | | | | 91 | 70 | 43 |
| 4. | Total Instruct. Exp. | | | | | | | | | | | | | | | | | 90 | 87 | 68 | 49 |
| 5. | Elem. Instruct. Exp. | | | | | | | | | | | | | | | | 95 | 95 | 94 | 68 | 44 |
| 6. | Sec. Instruct. Exp. | | | | | | | | | | | | | | | 93 | 90 | 95 | 83 | 55 | 45 |
| 7. | Tot. Cur. Oper. Exp. | | | | | | | | | | | | | | 61 | 73 | 54 | 65 | 93 | 62 | 18** |
| 8. | Oper. Millage, 69-70 | | | | | | | | | | | | | 71 | 32 | 33 | 20 | 39 | 31 | 35 | 10 |
| 9. | % Fed. Rev., 68-69 | | | | | | | | | | | | 22 | 16 | 13 | 18 | 22 | 15 | 01 | 20 | 15 |
| 10. | Supt. Status | | | | | | | | | | | 07 | 10 | 41 | 14 | 25 | 22 | 14 | 19 | 15 | 64 |
| 11. | Supt. Salary | | | | | | | | | | 09 | 62 | 10 | 59 | 27 | 47 | 20 | 19 | 09 | 14 | 31 |
| 12. | Supt. Ed. Level | | | | | | | | | 54 | 45 | 36 | 19 | 38 | 04 | 30 | 32 | 19 | 45 | 27 | 02 |
| 13. | Supt. Age | | | | | | | | 53 | 53 | 30 | 52 | 73 | 53 | 04 | 09 | 01 | 21 | 24 | 26 | 10 |
| 14. | Supt. Tenure | | | | | | | 09 | 26 | 18 | 24 | 37 | 20 | 78 | 43 | 55 | 61 | 59 | 53 | 61 | 07 |
| 15. | Mean Rokeach Score | | | | | | 19 | 02 | 16 | 31 | 59 | 10 | 09 | 50 | 35 | 37 | 37 | 27 | 28 | 31 | 05 |
| 16. | % Teacher Turnover | | | | | 15 | 52 | 19 | 14 | 32 | 01 | 24 | 26 | 49 | 55 | 53 | 47 | 64 | 54 | 37 | 16 |
| 17. | Mean Teacher Age | | | | 47 | 41 | 35 | 02 | 10 | 53 | 14 | 16 | 49 | 74 | 84 | 83 | 71 | 78 | 66 | 45 | 39 |
| 18. | Mean Teacher Prep. | | | 13 | 13 | 28 | 24 | 14 | 04 | 07 | 03 | 16 | 22 | 67 | 53 | 32 | 38 | 38 | 36 | 05 | 45 |
| 19. | T-A Goal Congruence | | 26 | 35 | 01 | 22 | 19 | 44 | 04 | 20 | 08 | 32 | 15 | 08 | 20 | 21 | 19 | 01 | 16 | 19 | 18 |
| 20. | T-B Goal Congruence | 26 | 13 | 21 | 18 | 25 | 16 | 25 | 42 | 24 | 82 | 26 | 22 | 37 | 15 | 03 | 02 | 08 | 01 | 01 | 55 |
| 21. | A-B Goal Congruence | | | | | | | | | | | | | | | | | | | | |

*Coefficients portrayed as whole number due to lack of space for decimal.
**Negative amounts are underlined.

be a great similarity in the rank-ordering of "Instructional Expense" and "SEV Per Pupil." It would seem that instructional expenses within the group of districts increase rather consistently with increases in taxable wealth. This is not so definite within Innovative districts, indicating that some districts' taxpayers make unusually high tax efforts. This further brought out by the relationship of "Operational Millage" and "SEV Per Pupil." Within the Non-Innovative districts millage rates generally reduce as the SEV Per Pupil increases. This relationship is not nearly so pronounced within Innovative districts.

A slightly different aspect of the issue appears in the relationship of "Operational Millage" to "Total Instructional Expense." It may be noted that within Innovative districts there is a high positive correlation between the rank-orderings of these two factors while in the Non-Innovative districts the relationship is almost equally as negative.

It would be expected that the superintendents of the larger school districts would receive higher salaries than the superintendents of smaller districts. The coefficients indicating the relationship of the rank-ordering of superintendent salary to enrollment for both Innovative and Non-Innovative groups support this

expectation.

Finally, of particular interest is the manner in which the rank-ordering of the districts on the basis of "Mean Teacher Preparation" correlates with other rank-orderings. It would appear that within Innovative districts the larger systems tend to have more highly prepared teachers. This appears to be true to a lesser degree within the Non-Innovative group. As teacher salaries relate to preparation levels and are the predominant percent of the total expenditures, it would be expected that "Total Instructional Expense" and "Mean Teacher Preparation" rank-orderings would correlate positively and highly. This appears to be the case in both groups. As "Operational Millage Rates" tend to decrease within Non-Innovative districts as "SEV Per Pupil" increases, it is interesting to note the negative correlation of "Mean Teacher Preparation" rank-ordering to "Operational Millage Rate." Within Innovative districts, however, "Mean Teacher Preparation" and "Operational Millage Rates" rank-orderings are positively correlated.

## Summary

In order for there to be a firm basis for the comparative study of the two groups of public school districts involved in this project, it was necessary to

indicate their similarities and differences. It was shown that the members of the Innovative group were generally different from the members of the Non-Innovative group. Mean innovativeness ratings for the two groups were 3.48 and .31, respectively, based on the current existence and extent of selected criterion programs and practices. The difference in mean innovativeness ratings stemmed from the area comprising the very heart of the study - the extent of fundamental organizational change or innovativeness - and was unlikely to have occurred by chance ($p = .025$).

In two important aspects, the two groups of districts were very much alike. They were similar in size of pupil enrollment; the Innovative group served 53,599 students and the Non-Innovative group served 52,050. As a group, the Non-Innovative districts possessed greater taxable wealth per pupil than did the Innovative group. However, district by district, members of the two groups were very closely matched.

Five major variables were measured within the twenty public school districts. Listed below are the major and secondary hypotheses, followed by brief summaries of findings relative to each (probability levels for observing differences reported are shown in parentheses):

---

$H_1$ Innovative school districts are characterized by significantly greater annual per-pupil financial expenditures than non-innovative districts.

Findings. Analyzed from the standpoint of three expenditure groupings, it was found that Innovative districts spent more per pupil on the basis of Total Instructional Expense ($p = .10$), more per pupil on the basis of Elementary Instructional Expense ($p = .10$) and Secondary Instructional Expense ($p = .05$), and more per pupil on the basis of Current Operating Expenditures ($p = .10$).

---

$H_{1a}$ Innovative school districts are characterized by significantly higher operational millage rates than are non-innovative districts.

Findings. Higher operational millage rates were found to exist in the Innovative school districts than in the Non-Innovative school districts ($p = .025$).

---

$H_{1b}$ Innovative school districts are characterized by a history of financial support by their communities significantly more consistent than non-innovative districts.

Findings. The districts in the Innovative group were found to have experienced a greater mean percent of successful operational millage elections ($p = .35$) and successful bond elections ($p = .25$) over the period 1964-65 through 1968-69.

---

$H_2$ Innovative school districts are characterized by superintendents of significantly greater status than non-innovative districts.

Findings. Superintendents of the Innovative districts were found to possess greater status, based on a seven-element formula, than did the superintendents of the Non-Innovative districts ($p = .025$).

---

$H_{2a}$ Innovative school districts are characterized by significantly younger superintendents than non-innovative districts.

Findings. The superintendents of Innovative districts were found to possess a mean age of 4.3 years younger than that of the superintendents of the Non-Innovative districts ($p = .15$).

---

$H_{2b}$ Innovative school districts are characterized by superintendents with significantly shorter tenure in their positions than are non-innovative districts.

Findings. The tenure of Innovative superintendents was found to be 1.9 years less than that of the Non-Innovative superintendents ($p = .25$).

---

$H_3$ Innovative school districts are characterized by significantly more open-minded (less dogmatic) administrative staff members than are non-innovative districts.

Findings: The members of the administrative staffs

of Innovative school districts were found to possess more open belief systems (more open-minded, less dogmatic) than did the administrative staff members of Non-Innovative districts ($p = .15$).

---

$H_{4a}$ Innovative school districts are characterized by significantly younger teaching staffs than are non-innovative districts.

Findings. The teachers of the ten Innovative districts possessed a mean age 1.619 years younger than the teachers of the ten Non-Innovative school districts ($p = .001$).

---

$H_{4b}$ Innovative school districts are characterized by teaching staffs with significantly higher levels of professional preparation than non-innovative districts.

Findings. Teachers of the Innovative group were found to have a higher mean level of professional preparation ($p = .15$) than the teachers of the Non-Innovative group. Furthermore, there were an inordinate proportion of teachers at higher levels in the Innovative group and at lower levels in the Non-Innovative group ($p = .01$).

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$H_5$ Innovative school districts are characterized by a significantly greater degree of congruence of goals among members of boards of education, administrators, and teachers than are non-innovative districts.

Findings. There was found to be little difference between the degree of congruence of goals among teachers and administrators of Innovative districts and that of Non-Innovative districts (p = .50). In fact, there was slightly more congruence in the Non-Innovative group. The degree of congruence of goals among teachers and board members in Innovative districts was found to be slightly less than that of Non-Innovative districts (p = .50). Administrators and board members of Innovative districts enjoyed greater goal congruence than did the administrators and board members of Non-Innovative districts (p = .25).

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The validity and reliability of the Rokeach Dogmatism Scale, Form E, were accepted by the investigator on the strength of reports by the developer and others. The Goals of American Education - Ordering Exercise, however, was of the investigator's design. A test-retest check of reliability achieved a coefficient of .918. There were no reasons to question the sincerity and honesty of the responses of subjects as all were assured the protection of anonymity.

# CHAPTER V

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

### Introduction

In this final section the entire research project is reviewed and summarized from its initial conception through the presentation and analysis of the data. Included are some conclusions reached by the investigator as well as some specific recommendations for possible actions and further study.

### Review of the Design

It was the intent of the investigator, in initiating this research project, to determine if there were measurable differences in personnel, financial, and leadership characteristics between selected "innovative" and "non-innovative" public school districts in southern lower Michigan. Districts were selected carefully, specifically the ten districts deemed by a panel of experts as most changed from the conventional in their use of team teaching, ungraded arrangements, modular scheduling, and other programs and practices. To match these for comparative study, there were selected ten more districts, not known by the panel as practicing any of the criterion

programs and as nearly equal as possible in enrollment size and taxable wealth per pupil to the original ten districts.

Specific variables subjected to comparative study within the twenty districts were elements generally in the category of characteristics of the organizational setting. Factors to be considered were those deemed to be of importance to the chief administrator inclined to innovate and change fundamental organizational processes and patterns. Included were financial expenditures, superintendent status, administrator open-mindedness, age and professional preparation of teachers, and goal congruence among teachers, administrators, and board of education members.

The three-step subject district selection process, involving the recommendations of experts, confirmation of selections through use of the 1964 Five Years of Progress data, and final determination by way of an on-hand examination by the investigator, was deemed adequate and successful. The ten Innovative districts were found to be significantly more "changed," as a group, in fundamental organizational processes and patterns than were the ten Non-Innovative districts. On the basis of pupil enrollment and taxable wealth the two groups proved to be well equated; the Non-Innovative group enjoying an

advantage of greater state equalized valuation per pupil.

Data related to the five major variables were collected from the twenty superintendents by way of personal interview, from central office personnel records concerning nearly 5,000 teachers, and by contact with nearly 600 teachers, 200 administrators, and 100 board of education members through the distribution and return of pencil and paper exercises. All subject districts and most individual subjects contacted were found to be cooperative and able to provide the desired data. Statistics were developed which related directly to all major and secondary hypotheses stated.

Hypotheses formulated to direct the collection of data were generally supported by the statistics derived from those data. In the following sections each major and secondary hypothesis is discussed and some conclusions held as justified in light of the findings are presented.

## Conclusions Concerning Major Variables

### Introduction

Analyses of the data relating to the five major variables revealed that (1) the Innovative districts spent more money per pupil for educational purposes during the 1968-69 school year than did the Non-Innovative districts, (2) the superintendents of Innovative districts enjoyed

higher status than did the superintendents of the Non-Innovative districts, (3) the members of the administrative staffs of the Innovative districts were more open-minded than the members of the administrative staffs of the Non-Innovative districts, (4) the teachers of the Innovative districts were younger and more highly professionally prepared than were the teachers of the Non-Innovative districts, and (5) the degree of goal congruence was high among almost all districts, with no differences found to be particularly significant. A number of conclusions may be justified on the basis of these findings.

Annual per-pupil financial expenditures

In all analyses districts in the Innovative group expended more per pupil during the 1968-69 fiscal year than did the districts of the Non-Innovative group. Though the groups were equated on the basis of enrollment and taxable wealth, expenditures of the Innovative group exceeded those of the Non-Innovative group. These findings assume even greater significance when it is pointed out that as a group the Non-Innovative districts were more capable of a high level of financial support of public education than were the Innovative districts. It would follow, logically, that if the two

groups of public school districts were equated on the basis of enrollment and taxable wealth, then increased expenditures by Innovative districts would suggest increased operational millage rates. This was found to be so.

Taking the increased operational millage rates into consideration, it might be suggested that the increased expenditures of districts of the Innovative group were due to greater federal support of education in these districts. However, an analysis of revenue for the 1968-69 fiscal year indicates Innovative districts received 65.1% of their revenues from local sources, 32.1% from state aid, 2.2% from federal programs administered by the state, and .3% from federal programs administered directly. On the other hand, Non-Innovative districts received 64.3% from local sources, 32.3% from the state, 2.5% indirectly from federal sources, and .8% directly from federal sources. Now, as state aid is determined jointly by taxable wealth and local tax effort, there appears only one justifiable conclusion: Innovative districts spent more money for the education of each pupil and voluntarily taxed themselves at higher rates in order to provide the money. But this conclusion is based on only one year's data. What of preceding years?

It was found that during the period 1964-65 through

1968-69 that the voters of Innovative districts had approved a greater proportion of operational millage issues and bond issues put before them than had their counterparts in Non-Innovative districts. Though these findings tend to support the hypotheses and conclusions above, it must be understood that the analysis is shallow in that only the win-loss percents were considered.

It might be concluded, on the basis of statistics derived from the data collected, that the communities in which the Innovative school districts of this study were located were willing to contribute greater amounts to financially support the operation of their public schools than were the communities in which the Non-Innovative districts were located. Revenue and expenditure records and voting behavior tend to support this conclusion. It was not within the scope of this study to determine if the high level of financial support predated the implementation of the criterion programs and practices, only that at present the two appear to be associated.

Superintendent status

Though behaviors of chief administrators were not considered as a part of this research project, it may be concluded that status, as determined by the seven factors, is associated with the existence of the criterion

programs and practices. It might be reasoned that specific characteristics, such as professional preparation and experience, while shown in this instance to be associated with successful organizational change efforts, might also be associated with the behaviors in which these efforts are embodied.

One might conclude that, within the two groups of districts studied, programs and practices indicative of fundamental organizational change tend to exist to a greater extent in the group with younger chief administrators. However true this may be, the data indicate that the mean difference in age stems not from differences between older superintendents, but rather that the younger Innovative superintendents were younger than their counterparts in the Non-Innovative category. From this it might be concluded that though the mean age of Innovative superintendents was less, there remained a number of districts, very innovative by the established criteria, employing superintendents who could not be considered "young."

Perhaps the most revealing statistic in this regard is that within the Innovative group superintendent age was positively correlated with district size (pupil enrollment) to the extent of .71. It might be reasoned that efforts toward the institution and maintenance of programs resulting in fundamental organizational change

may be those of lower level administrators recruited and recommended by the superintendent and possessing status in their own right.

Tenure of superintendents in Innovative districts was found to be correlated with age to the extent of +.37 and within Non-Innovative districts +.53. Perhaps tenure may be interpreted as being as associated with age as with innovativeness. If one accepts the idea that the younger superintendent may remain in a given district a shorter period as he strives for advancement, the decrease in tenure of Innovative superintendents is nearly accounted for by the lesser mean age.

Administrator open-mindedness

It was found that as a group the administrators of the Innovative districts were more open-minded than the administrators of the Non-Innovative districts. This finding tends to support conclusions reached by writers in the field that fundamental change occurs more frequently in the presence of open-minded and receptive administrative staff members. As building administrators are normally charged with the responsibility for the educational programs and practices in their buildings, one would expect to find change and open-mindedness in administrators to be associated, regardless of

whether the change is initiated from the top of the organization or from the bottom.

It would follow, logically, that the lower mean score (the less dogmatic and more open belief system) achieved by a particular district's administrative group, then the more fundamental change is likely to occur. However, the degree of innovativeness among Innovative districts was found to be correlated, on a rank order basis, with administrator group mean Rokeach scores to the extent of only +.08, which lends little support to the reasoning.

One might conclude, from a group dynamics point of view, that for a superintendent to be relatively successful in change efforts he might not need an entire staff of highly open-minded administrators. If he were to have sufficient numbers of such persons, group norms might form which would facilitate change in those schools of a given district headed by a highly dogmatic principal. Analysis of the groups of Rokeach scores from particular districts tends to support this reasoning.

It might also be concluded that lower administrator Rokeach scores within the Innovative districts may be related to the status of the chief administrator. If, as is commonly contended, superintendents tend to recruit and hire in their own image, chief administrators who are open and receptive to change might surround themselves

with building administrators of a similar flexibility of thinking. Analysis of the Rokeach data appears to support this contention.

Teacher age and professional preparation

A number of conclusions regarding the setting for innovation and successful administrative change efforts may be reached in the light of findings concerning teacher age and professional preparation. It could be held, if one accepts the premise that younger teachers are more flexible in their ability to adapt to new organizational patterns and methods of teaching, that younger teachers tended to seek out those districts within the Innovative group in which changes had taken and were taking place. Conversely, the more mature teacher would be expected to gravitate to and remain in those school systems in which methods and organization are more conventional and congruent with the manner in which such teachers had been trained. Following this reasoning a bit further, it might be concluded that if this be the case, districts of the Innovative group would experience higher rates of teacher turnover - younger teachers being more apt to adjust to conventional and traditional systems than older teachers to adapt to innovative and changing systems. However, teacher turnover data for the 1968-69

to 1969-70 school years indicate clearly the near identical rates for the two groups of districts (Innovative 15.5%, Non-Innovative 15.2%).

It must be concluded, therefore, if taxable wealth, district size, and teacher turnover rates are nearly equal, the younger teachers on the staffs of the Innovative districts are the result of conscious administrative effort to recruit such teachers, and, to a certain extent, the result of a natural selection process.

Within Innovative districts there was seen to be a disproportionate number of teachers at the "Specialist plus" level when analyzed in light of the overall distribution of teachers among the twenty districts at the four levels. Concurrently, there were fewer teachers than expected employed at the "Bachelor's" and "Master's" levels. Among Non-Innovative districts a reversed condition was witnessed. A number of possible explanations and conclusions may be considered.

Staffing patterns among the Innovative districts, relative to changed organizational patterns and methods and procedures of teaching, could result in positions requiring greater professional preparation which did not exist within the districts of the Non-Innovative group. There could be the possibility that the districts of the Innovative group purposefully recruited more

highly-trained teachers in view of their potential understanding and acceptance of new programs and practices. Finally, it might be reasoned that Innovative districts consciously rewarded advanced professional preparation through salary increments beyond those of the Non-Innovative districts or professional advancement through the creation of higher level positions within the organization.

Goal congruence

There is little question that the established criterion programs and practices were found to be more extensive and widespread in their existence among the districts of the Innovative group. Changed organizational patterns, as evidence by team teaching, nongraded arrangements, modular scheduling, and similar programs, were more frequently and extensively found to exist in the Innovative districts. Yet among these districts there was no greater agreement found among teachers and administrators and teachers and board members regarding the relative importance of fifteen suggested and common goals of American education. It must be concluded that high levels of agreement concerning goals among these groups are are not particularly associated with fundamental organizational changes as evidenced by the

existence of the criterion programs. On the other hand, one must not lose sight of the possibility that a high level of goal congruence may be associated with innovativeness and change and that this high level existed in both groups selected for comparative study. The absence of differences of mean levels of agreement may or may not be accepted as indicative of the existence of an association.

Finally, there may be some practical significance attached to the finding that administrators and board of education members, as groups, tended to be more in agreement regarding goals in Innovative districts than they were in Non-Innovative districts. If successful change efforts are more commonly initiated from the upper levels of the organization (board of education and administration), one might expect greater agreement to be associated with the existence of evidence of change. Perhaps most requisite to successful change efforts of the superintendent is agreement among the policy-makers (board of education) and the Policy-implementors (administrative staff) regarding the direction which the total educational program of a given school system should take.

## Summary

Briefly stated, the following conclusions appear

to be justified:

1. Districts of the Innovative group were found to have expended more money per pupil for education than districts of the Non-Innovative group. Innovative districts voluntarily taxed themselves at higher rates to provide for higher expenditures and had more consistently supported operational millage and bond issues over a five-year period. Though at a disadvantage in many respects in the comparative study, Innovative districts are concluded to exhibit a desire and a willingness to support criterion programs and practices and the concomitant high level of expenditures.

2. Superintendents of Innovative districts possessed a greater status than did the superintendents of the Non-Innovative districts. Youth, higher levels of professional preparation, and short tenure appear to be associated with the existence of the criterion programs and practices.

3. Administrators employed by the Innovative districts were found to be more open-minded than those employed by the Non-Innovative districts. More open-minded administrators appeared to be associated with higher status superintendents and a higher degree of innovativeness.

4. Teachers employed by Innovative districts are

generally younger and more highly prepared professionally. This appears to result from a conscious administrative effort to employ such teachers and, to a certain extent, as the result of a natural selection process. It is reasoned that staffing patterns within Innovative districts, resulting from the various criterion programs, in addition to rewards for advanced professional preparation made available, account for the differences observed.

5. Teachers and board members and teachers and administrators of Innovative and Non-Innovative districts were generally in high agreement concerning the relative importance of the goals of American education. Little difference in extent of agreement was found. Administrators and members of boards of education, however, were in higher agreement among the districts of the Innovative group, which may be associated with the greater extent of fundamental organizational change within these districts. The lack of differences in the first two relationships is not to be interpreted as the absence of an association of goal congruence to organizational change.

## Recommendations for Action

It would appear, on the basis of the statistics derived from the data collected in this study, that the

chief administrator of a public school district wishing to implement programs and practices resulting in fundamental organizational change might carefully consider the state of "organizational health" of his school system. The findings of this research project reveal, at least within the twenty districts studied, some implications for action on the part of the superintendent who desires change in organization and methodology - action which might improve the organizational health of the school system and tend to facilitate his change efforts.

Financial expenditures

It would seem that higher per-pupil financial expenditures are associated with the kinds of programs and practices used as criteria for selection in this study. Possibly there are programs and practices which change the way teachers relate to students or the way time is utilized which, in themselves, require no additional financial outlays. However, in the main, the innovative superintendent must be aware that the concomitants of specially-trained personnel, additional personnel, and new materials and equipment necessary for the success of new programs are going to result in higher education costs.

As additional revenue to assure the success of new

and expanded programs and practices are forthcoming only on the approval of the electorate, it seems the major challenge to the innovative superintendent is to persuade the taxpayer that new organizational and staffing patterns, special personnel, and new equipment justify additional expenditures before the fact, or in some way reallocate budgeted moneys to demonstrate, on a pilot basis, the value of a program before it is instituted broadly.

Superintendent status

There seems little question that chief administrators of higher status were employed by the school systems of this study in which the criterion programs and practices existed. There is little way of knowing, from the data collected in this study, whether a school system inclined to change sought out an educational leader capable of leading the district on toward new programs and practices only generally desired or whether a change-minded superintendent sought out the position in an unchanging system and subsequently initiated and implemented changes. Innovativeness and tenure statistics and previous research studies tend to support the former. Evidence would suggest that rapidly changing school systems employ a succession of chief administrators, each maintaining existing

changes or forging ahead, but remaining only a relatively short time as the head of the system. For the prospective superintendent-change agent the statistics would imply that a high level of professional preparation, administrative and/or teaching experience in a relatively large public school system, and a rather cosmopolitan outlook and affiliation are associated with successful change efforts.

Administrator open-mindedness

There appears ample evidence to support previous research indicating that successful changes in the operation of public schools take place in those districts in which there are building principals open in their belief systems and receptive to new organizational patterns and new methods for attaining established goals. Many writers maintain that closed belief system and inflexibility of thinking are not easily changed. Therefore, the possible implication for superintendent action lies in the realm of establishing qualifications for new or replacement administrators and in developing recruiting and screening procedures which will lead to the employment of administrative personnel of demonstrated flexibility.

Teacher age and professional preparation

On the basis of statistics developed in this study and other research, younger and more highly-trained teachers seem to be associated with those school systems in which new programs and practices are successfully instituted. The question remains whether they were purposefully and consciously recruited or naturally gravitated to where higher salaries and professional opportunities existed. For the chief administrator hoping to establish a more fertile setting for the germination and growth of change ideas, the former alternative is a possibility. As was pointed out earlier, adequate financing may be the key to success in this area. To facilitate the recruitment of younger and more highly-prepared teachers, the school system must be able to offer salary and professional growth opportunities and incentives. For the superintendent bent upon changing the system he heads, particular emphasis on both aspects may not be necessary. It may be possible that the youthful and receptive teacher may choose a system in which a dynamic and innovative educational program is developing, all other conditions being equal.

Goal congruence

Apparently, on the basis of statistics developed in this study, a high level of agreement regarding the goals of American education is not uniquely associated with those school systems in which changes have taken place. However, there is some indication that greater agreement among board of education members and administrators may be related to successful change efforts. For the chief administrator desiring change, it would seem most fruitful to begin with such efforts in an attempt to clarify and agree upon goals relevant for the particular system and its community. If, as many contend, change is initiated from the top of the organization, it would seem logical and efficient to arrive at some consensus regarding goals among the two top levels of the hierarchy - the board of education and the administration.

## Recommendations for Future Study

1. In pursuing this project it became apparent that the study of a given school district, or group of districts, at a particular time leaves much to conjecture. This study investigated the relationship of per-pupil expenditures to the criterion programs and practices cross-sectionally at a specific time. Especially

valuable would be a longitudinal study of selected school districts to determine the sequence and relationship of the emergence, implementation, and provision of financial support for such programs.

2. In a study of this type a number of influences stemming from community socio-economic factors are at work. It would be of particular value if the study were replicated but with an emphasis on a number of demographic characteristics which may determine the electorate's educational expectations and willingness to provide financial support. Of interest would be the influence of minority groups (racial, parochial and private school advocates, etc.) and such factors as income, educational level, size of family, place of birth, occupation, and others.

3. Data were collected in this study which indicated a slightly more favorable success-failure ratio for the Innovative districts' operational millage elections. A comparative study of elections, both successes and failures, within both Innovative and Non-Innovative districts, might produce valuable insights. Of particular interest might be the methods and techniques utilized by the leadership of both kinds of districts in their attempts to gain a favorable vote and the perceptions of the electorate concerning both their affirmative and negative votes.

4. It was sensed by the investigator that the atmosphere within those districts operating extensive community school programs was in some way more positive than in districts lacking such programs. If one of the prime objectives of the community school concept is that of interesting and involving the adult electorate in school activities, insights into the role of such programs relative to the success of innovation and change efforts would be valuable. Relevant to such relationships might also be the influence of community school programs on educational expectations of the community and its willingness to support financially changes in education.

5. Previous research supports the contention that school systems move alternately through periods of rapid change and periods of "retrenching." An innovative chief administrator will be employed at a time when conditions seem propitious for rapid change. Characteristically, he will be followed by a less innovative superintendent expressly charged with maintaining and strengthening the status quo. It became apparent in visiting the Innovative districts of this study that some were in the midst of a change cycle while others were at a stage of system maintenance. It would be of value to study further these same school districts to explore the dynamics of the

community social system and the behavior of the school personnel in light of the insights gained from this endeavor.

6. In making comparisons of Innovative and Non-Innovative public school districts in this study it became apparent to the investigator that there were superintendents of Non-Innovative districts who seemed very much as inclined toward innovation and change as any Innovative superintendent. Their aspirations and enthusiasm for the potential of education within their districts were high and they would point with pride to many accomplishments within areas of staffing, program, and physical plant. Yet their districts were not innovative by the criteria established for this study. Accepting that all progress and change are relative, it would possibly provide valuable insights regarding the behaviors of superintendents if they and their efforts were studied relative to the settings for change existing at the time they assumed their positions.

7. In view of the widespread contention that chief administrators tend to recruit and recommend for employment candidates for lower level administrative positions in their systems persons cast in their own image, further research into the composition of the administrative teams of Innovative and Non-Innovative districts would be of

value. The determination of the types of personality combinations most effective, relative to various settings, in accomplishing organizational change in school systems would add much to what is known about administrative staffing and organization.

8. The districts included in this study would be appropriate settings for further study of teacher characteristics. In addition to the mean age difference found, further data regarding the socio-economic backgrounds of teachers, relative to the districts which employ them, might be collected. Possibly successful change efforts are in some way associated with a congruence of teacher and community educational expectations and values. Several facets of the milieu remain to be investigated.

9. A replication of the goal congruence portion of this study might be considered with the added feature of an investigation of the congruence of perceptions regarding the relative value of teaching methods, grouping and tracking arrangements, and educational organizational patterns. Possibly the implications of such an expanded investigation would be of even more value to the public school superintendent devoted to making changes in conventional education systems.

10. The criterion measure utilized in this study to

establish a basis for comparison was the degree of fundamental organizational change. As the investigator seemed to sense a more positive and enthusiastic atmosphere in the schools and central offices of the Innovative districts, it is suggested that a similar study be conducted using teaching staff morale as the criterion measure and investigating the degree of innovativeness, administrative behaviors, and other factors as major variables.

This concludes the report of a study which may be considered as of the situational type discussed earlier. It may be seen in the research recommendations listed the bias of the investigator toward studies which will hopefully reveal the interrelationship of a number of factors operating in a given social system. Granted, such studies are fraught with multiple and confounding nuisance variables. Yet, this investigator contends research may overlook the synergism existing among elements of the public school administration milieu - a synergism which increasingly compounds the difficulty of exercising effective educational leadership.

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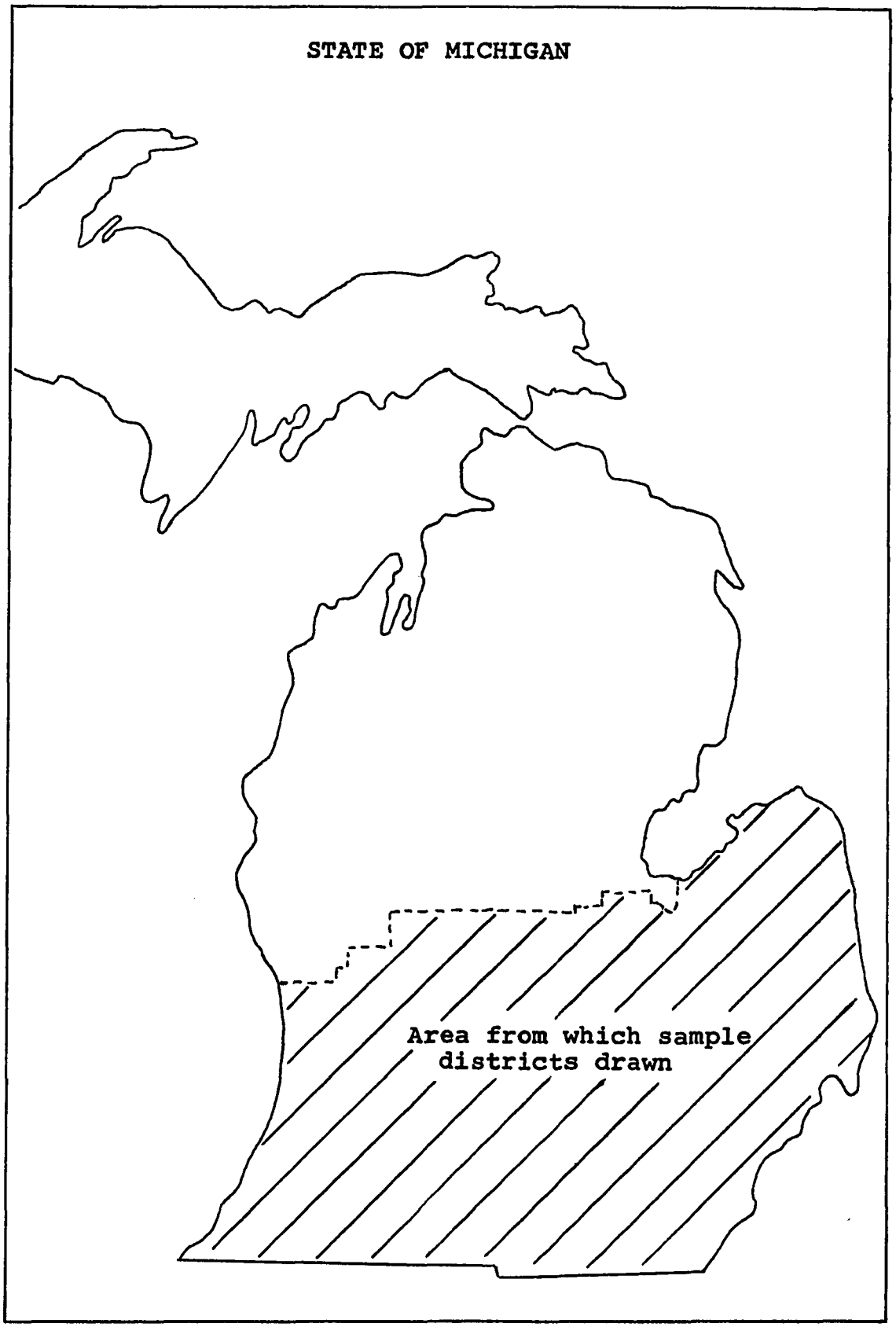
# APPENDIX

Exhibit 1





## COUNTIES OF SOUTHERN LOWER MICHIGAN

| | |
|---|---|
| Allegan | Lapeer |
| Barry | Lenawee |
| Berrien | Livingston |
| Branch | Macomb |
| Calhoun | Monroe |
| Cass | Montcalm |
| Clinton | Oakland |
| Eaton | Ottawa |
| Genesee | Saginaw |
| Gratiot | Shiawassee |
| Hillsdale | St. Clair |
| Huron | St. Joseph |
| Ingham | Sanilac |
| Ionia | Tuscola |
| Jackson | Van Buren |
| Kalamazoo | Washtenaw |
| Kent | Wayne |

Exhibit 3



PERSONS ASSISTING IN SELECTING DISTRICTS FOR INCLUSION IN THE STUDY

Dale W. Abke, Superintendent, Lapeer Intermediate School District

James Anderson, Director, Michigan State University Teacher Education Center, Bay City-Saginaw Area

Morgan Ballach, Superintendent, Huron Intermediate School District

Doyle Barkmeier, Superintendent, Berrien Intermediate School District

Bruce T. Blanchard, Superintendent, Ionia Intermediate School District

Wilson Block, Assistant Superintendent, Big Rapids Schools, Member of Board of Directors, M.A.S.C.D.

Dr. Laverne Boss, Superintendent, Grandville Public Schools, Member of Board of Directors, M.A.S.C.D.

Albert L. Bradfield, Superintendent, Kalamazoo Valley Intermediate School District

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Dr. William Cansfield, Assistant Superintendent, Kalamazoo Public Schools, Member of Board of Directors, M.A.S.C.D.

Ernestine Carlson, Superintendent, Livingston Intermediate School District

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Mary Lou Corbit, Superintendent, Lewis Cass Intermediate School District

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Nick A. Ianni, Superintendent, Washtenaw Intermediate School District

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Henry Kuehl, Deputy Superintendent, Jackson Intermediate School District

James L. Leary, Assistant Superintendent, Clarenceville School Dist., Member of Bd. of Dir., M.A.S.C.D.

George E. Leckrone, Superintendent, Sanilac Intermediate School District

Harold E. LeFevre, Superintendent, Macomb Intermediate School District

Dr. Arvo Lohela, Curriculum Consultant, Genesee Intermediate School District

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Milton C. Porter, Superintendent, Lenawee Intermediate School District

Dr. Stuart Rankin, Assistant Supt., Detroit Public Schools, Member of Bd. of Directors, M.A.S.C.D.

Phil C. Robinson, Principal, River Rouge Public Schools, Member of Board of Directors, M.A.S.C.D.

William J. Rogers, Superintendent, Ingham Intermediate School District

W. A. Scott, Superintendent, Tuscola Intermediate School District

William J. Seiter, Superintendent, Montcalm Intermediate School District

William A. Sexton, Superintendent, Allegan Intermediate School District

Virginia Sorenson, Asst. Professor, Education, Western Michigan Univ., Member of Bd. of Dir., M.A.S.C.D.

Leverne D. South, Consultant, Bureau of Educational Svcs., Michigan State Department of Education

David Shulert, Director of Curriculum, Lansing Public Schools, Member of Bd. of Directors, M.A.S.C.D.

William A. Shunck, Superintendent, Wayne Intermediate School District

David T. Steel, Superintendent, Hillsdale Intermediate School District

Harold S. Stockwell, Superintendent, Barry Intermediate School District

Sara Jane Stroud, Instructor, Teacher Educ., Western Michigan Univ., Member of Bd. of Directors, M.A.S.C.D.

Earl K. Studt, Bureau of Field Services, Eastern Michigan University

Gerald Sturm, Assistant Director, Impact 7, Reed City Public Schools

Donald O. Tatroe, Executive Director, Michigan Association of School Boards

William F. Tracy, Superintendent, Branch Intermediate School District

Hugh Tyler, Superintendent, St. Joseph Intermediate School District

Elmer Van Dyke, Superintendent, Van Buren Intermediate School District

Mary Lou Warren, New Teacher Consultant, Port Huron Area Schools, Member of Board of Directors, M.A.S.C.D.

D. Wells, Director of Instruction, Oakland Intermediate School District

Russell G. Wolff, Superintendent, Eaton Intermediate School District

Exhibit 4



Kalamazoo, Michigan
(Date)

(Panel Member)

Dear Sir:

As a doctoral candidate in Educational Leadership, under the direction of Dr. Roland S. Strolle at Western Michigan University, I am making final preparations for conducting a research study. I intend to concentrate on selected public school districts in southern lower Michigan which have instituted programs and practices requiring rather substantial changes in four major elements. The four elements and some examples of programs and practices resulting in or from their change are:

| | Major Elements | | Programs and Practices |
|---|---|---|---|
| 1. | The way blocks of time are organized | a. | Modular Scheduling |
| | | b. | Extended School Year |
| | | c. | Staggered Sessions |
| 2. | The way teachers work with students | a. | Team Teaching |
| | | b. | Non-Graded Arrangements |
| | | c. | Self-Directed Study Programs |
| 3. | The allocation of physical facilities | a. | Off-Campus Study Centers |
| | | b. | Provision of Student Lounges |
| | | c. | Evening School Study Centers |
| 4. | The use of instructional equipment and materials | a. | Computer Assisted Instruction |
| | | b. | Educational Television |
| | | c. | Language Laboratories |

Current survey information is not available which would enable me to identify districts in which such programs and practices exist. Therefore, I am asking you to assist me. Please select eight districts from the attached list, if possible, in which there have been substantial changes in one or more of the four major areas. These districts need not be within your area, but may be any of which you are aware. Please arrange the district names in order of the

extent and frequency of such programs and practices and return only the form to me. A stamped envelope is enclosed for your convenience.

Thank you, in advance, for your kind consideration and cooperation.

Sincerely,

Elvin F. Peets
Dept. of Educ. Leadership
Western Michigan University

Exhibit 5



PUBLIC SCHOOL DISTRICTS OF 2,000 TO 10,000 ENROLLMENT IN SOUTHERN LOWER MICHIGAN*

| District | Enrollment | County |
|---|---|---|
| Adrian | 6,100 | Lenawee |
| Airport | 2,984 | Monroe |
| Albion | 3,995 | Calhoun |
| Algonac | 2,649 | St. Clair |
| Allegan | 3,070 | Allegan |
| Allen Park | 6,734 | Wayne |
| Alma | 3,280 | Gratiot |
| Anchor Bay | 2,596 | Macomb |
| Atherton | 2,400 | Genesee |
| Avondale | 3,800 | Oakland |
| Bedford | 6,049 | Monroe |
| Beecher | 6,600 | Genesee |
| Belding | 2,450 | Ionia |
| Bendle | 2,380 | Genesee |
| Bentley | 2,595 | Genesee |
| Berkley | 8,700 | Oakland |
| Birch Run | 2,300 | Saginaw |
| Blissfield | 2,089 | Lenawee |
| Bloomfield Hills | 9,300 | Oakland |
| Brandywine | 2,700 | Berrien |
| Bridgeport | 4,520 | Saginaw |
| Brighton | 2,125 | Livingston |
| Buchanan | 2,518 | Berrien |
| Buena Vista | 3,750 | Saginaw |
| Caledonia | 2,050 | Kent |
| Carman | 8,672 | Genesee |
| Caro | 2,400 | Tuscola |
| Carollton | 2,018 | Saginaw |
| Cedar Springs | 2,175 | Kent |
| Centerline | 6,296 | Macomb |
| Charlotte | 3,631 | Eaton |
| Chelsea | 2,434 | Washtenaw |
| Cherry Hill | 4,878 | Wayne |
| Chesaning | 3,450 | Saginaw |
| Chippewa Valley | 2,570 | Macomb |
| Clarenceville | 4,000 | Oakland |

*Source: Michigan Public School District Data, 1968-69, Michigan Education Association

Exhibit 5



| | | |
|---|---|---|
| Clarkston | 6,100 | Oakland |
| Clawson | 4,938 | Oakland |
| Clintondale | 5,000 | Macomb |
| Clio | 5,000 | Genesee |
| Coldwater | 4,244 | Branch |
| Coloma | 2,700 | Berrien |
| Comstock | 3,422 | Kalamazoo |
| Comstock Park | 2,075 | Kent |
| Coopersville | 2,400 | Ottawa |
| Corrunna | 2,650 | Shiawassee |
| Crestwood | 5,193 | Wayne |
| Croswell-Lexington | 2,180 | Saginaw |
| Davison | 5,143 | Genesee |
| Dearborn #8 | 5,536 | Wayne |
| Dearborn Heights | 5,436 | Wayne |
| Delton-Kellogg | 2,155 | Barry |
| Dexter | 2,048 | Washtenaw |
| Dowagiac | 4,000 | Cass |
| Durand | 3,133 | Shiawassee |
| East China | 4,400 | St. Clair |
| East Grand Rapids | 3,870 | Kent |
| East Lansing | 5,250 | Ingham |
| Eaton Rapids | 3,350 | Eaton |
| Ecorse | 4,187 | Wayne |
| Edwardsburg | 2,150 | Cass |
| Elkton-Pigeon-Bayport | 2,050 | Huron |
| Fenton | 3,525 | Genesee |
| Ferndale | 8,210 | Oakland |
| Fitzgerald | 5,291 | Macomb |
| Flat Rock | 2,145 | Wayne |
| Flushing | 4,938 | Genesee |
| Forest Hills | 3,885 | Kent |
| Fraser | 6,839 | Macomb |
| Gibralter | 2,953 | Wayne |
| Godwin Heights | 3,700 | Kent |
| Grand Blanc | 7,754 | Genesee |
| Grand Haven | 5,825 | Ottawa |
| Grand Ledge | 5,300 | Eaton |
| Grandville | 4,500 | Kent |
| Greenville | 3,550 | Montcalm |
| Grosse Isle | 2,267 | Wayne |
| Gull Lake | 2,810 | Kalamazoo |
| Hamtramck | 3,362 | Wayne |
| Harper Creek | 3,178 | Calhoun |

Exhibit 5



| | | |
|---|---|---|
| Hastings | 3,943 | Barry |
| Hazel Park | 8,300 | Oakland |
| Heintzen | 4,226 | Wayne |
| Highland Park | 8,169 | Wayne |
| Hillsdale | 2,723 | Hillsdale |
| Holland | 5,419 | Ottawa |
| Holly | 3,378 | Oakland |
| Holt | 4,100 | Ingham |
| Howell | 4,530 | Livingston |
| Hudsonville | 2,150 | Ottawa |
| Huron Township | 2,248 | Wayne |
| Huron Valley | 6,500 | Oakland |
| | | |
| Imlay City | 2,180 | Lapeer |
| Inkster | 4,751 | Wayne |
| Ionia | 3,478 | Ionia |
| | | |
| Jefferson | 2,662 | Monroe |
| Jenison | 2,950 | Ottawa |
| | | |
| Kearsley | 5,200 | Genesee |
| Kelloggsville | 2,596 | Kent |
| Kenowa Hills | 3,355 | Kent |
| | | |
| Lake Orion | 5,050 | Oakland |
| Lakeshore | 3,371 | Berrien |
| Lakeshore | 9,308 | Macomb |
| Lakeview | 5,475 | Calhoun |
| Lakeview | 7,650 | Macomb |
| Lakeville | 2,800 | Genesee |
| Lakewood | 2,800 | Ionia |
| L'Anse Creuse | 7,400 | Macomb |
| Lamphere | 6,160 | Oakland |
| Lapeer | 5,575 | Lapeer |
| Lowell | 2,532 | Kent |
| | | |
| Madison | 4,900 | Oakland |
| Marshall | 3,342 | Calhoun |
| Marysville | 2,086 | St. Clair |
| Mason | 3,350 | Ingham |
| Mason | 2,104 | Monroe |
| Melvindale | 5,637 | Wayne |
| Michigan Center | 2,076 | Jackson |
| Milan | 2,735 | Washtenaw |
| Millington | 2,000 | Tuscola |
| Monroe | 9,019 | Monroe |
| Montrose | 2,000 | Genesee |
| Mt. Morris | 3,609 | Genesee |
| Mt. Clemens | 6,908 | Macomb |

Exhibit 5



| | | |
|---|---|---|
| Nankin Mills | 3,254 | Wayne |
| Niles | 6,582 | Berrien |
| No. Dearborn Heights | 2,803 | Wayne |
| Northview | 3,382 | Kent |
| Northville | 2,817 | Wayne |
| Northwest | 3,856 | Jackson |
| Oak Park | 6,195 | Oakland |
| Okemos | 3,182 | Ingham |
| Otsego | 2,900 | Allegan |
| Ovid-Elsie | 2,395 | Clinton |
| Owosso | 6,428 | Shiawassee |
| Oxford | 2,650 | Oakland |
| Parchment | 2,560 | Kalamazoo |
| Paw Paw | 2,100 | Van Buren |
| Pennfield | 2,405 | Calhoun |
| Pinckney | 2,050 | Livingston |
| Plainwell | 2,889 | Allegan |
| Plymouth | 8,972 | Wayne |
| Redford Union | 9,990 | Wayne |
| River Rouge | 2,750 | Wayne |
| River Valley | 2,289 | Berrien |
| Riverview | 3,473 | Wayne |
| Rochester | 8,067 | Oakland |
| Rockford | 3,500 | Kent |
| Romeo | 3,525 | Macomb |
| Romulus | 5,093 | Wayne |
| Saginaw Township | 6,254 | Saginaw |
| St. Johns | 3,700 | Clinton |
| St. Joseph | 4,250 | Berrien |
| St. Louis | 2,119 | Gratiot |
| Saline | 2,338 | Washtenaw |
| Southgate | 5,374 | Wayne |
| South Haven | 2,572 | Van Buren |
| South Lake | 5,050 | Macomb |
| South Lyons | 2,960 | Oakland |
| South Redford | 8,121 | Oakland |
| Sparta | 2,900 | Kent |
| Spring Lake | 2,520 | Ottawa |
| Sturgis | 2,512 | St. Joseph |
| Swartz Creek | 4,650 | Genesee |
| Tecumseh | 3,468 | Lenawee |
| Three Rivers | 3,350 | St. Joseph |
| Trenton | 6,853 | Wayne |
| Troy | 5,435 | Oakland |

| | | |
|---|---|---|
| Van Buren | 6,912 | Wayne |
| Van Dyke | 7,200 | Macomb |
| Vassar | 2,050 | Tuscola |
| Vicksburg | 2,875 | Kalamazoo |
| Warren Woods | 8,600 | Macomb |
| Waverly | 4,584 | Ingham |
| Wayland | 2,060 | Allegan |
| West Bloomfield | 4,175 | Oakland |
| Western | 2,155 | Jackson |
| West Ottawa | 3,970 | Ottawa |
| Westwood Heights | 2,440 | Genesee |
| Willow Run | 4,507 | Washtenaw |
| Wyandotte | 8,658 | Wayne |
| Wyoming | 7,750 | Kent |
| Ypsilanti | 7,527 | Washtenaw |
| Zeeland | 2,415 | Ottawa |

Exhibit 6



NOMINATION FORM - I would consider the following public school districts, which I have selected from the list provided, as districts in which there have been substantial changes in one or more of the four basic elements described in the accompanying letter. I have attempted to arrange the district names in order of the extent and frequency of such programs and practices.

| | Name of District | Reason for Selection |
|---|---|---|
| 1. | _____ | _____ |
| 2. | _____ | _____ |
| 3. | _____ | _____ |
| 4. | _____ | _____ |
| 5. | _____ | _____ |
| 6. | _____ | _____ |
| 7. | _____ | _____ |
| 8. | _____ | _____ |

NAME: _____

POSITION: _____

(Note: You will be given credit in the final report for having assisted me in the selection process. Your specific nominations, however, will be kept confidential.)

Exhibit 7



INNOVATIVENESS RATINGS OF SUBJECT PUBLIC SCHOOL DISTRICTS*

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Rating | District | Rating |
| A | 1.87 | A | .38 |
| B | 1.75 | B | .21 |
| C | 1.55 | C | .13 |
| D | 1.08 | D | .10 |
| E | .52 | E | .09 |
| F | .46 | F | .07 |
| G | .40 | G | .04 |
| H | .30 | H | .03 |
| I | .28 | I | .00 |
| J | .22 | J | .00 |
| Mean: | .843 | Mean: | .105 |
| Variance: | .387 | Variance: | .012 |

("t" = 3.746, Sig. at p = .001)

*Based on data collected by the Michigan State Department of Education in the 1964 Survey of Five Years of Progress in Michigan Elementary and Secondary Schools

Exhibit 8



INNOVATIVENESS RATINGS OF SUBJECT PUBLIC SCHOOL DISTRICTS DERIVED FROM DATA COLLECTED ON PERSONAL VISIT TO DISTRICTS BY INVESTIGATOR

| INNOVATIVE GROUP | | NON-INNOVATIVE GROUP | |
|---|---|---|---|
| District | Rating | District | Rating |
| A | 15.28 | A | 1.15 |
| B | 4.20 | B | .68 |
| C | 3.10 | C | .36 |
| D | 2.37 | D | .22 |
| E | 2.32 | E | .17 |
| F | 2.23 | F | .17 |
| G | 2.04 | G | .14 |
| H | 1.56 | H | .12 |
| I | 1.13 | I | .05 |
| J | .61 | J | .01 |
| Mean: | 3.48 | Mean: | .31 |
| Variance: | 16.084 | Variance: | .109 |

("t" = 2.494, Sig. at p = .025)

Exhibit 9



Kalamazoo, Michigan
(Date)

(Superintendent)
(Subject District)

Superintendent:

For the record, a brief recap of our recent conversation may be in order. I am a doctoral candidate in Educational Leadership at Western Michigan University. My major adviser is Dr. Roland S. Strolle.

As a research project for a dissertation I have chosen to investigate a number of factors relating to change in public school districts of the 2,000 to 10,000 enrollment category in southern lower Michigan. I have selected a sample of twenty districts. They represent a variety of enrollment, geographic location, and wealth. Your district is one which I would like to include in my study.

The variables which I hope to measure in each of the subject districts are:

1. The degree to which teachers, administrators, and members of boards of education agree concerning the goals of American education.

2. The age and professional preparation of the teaching staff.

3. Leadership characteristics: (a) Opinions of the members of the administrative staff, and (b) Traits of the superintendent such as age, professional preparation, salary, employment history, etc.

4. Various other basic facts concerning the district in the areas of finance, curriculum programs, district elections, negotiations, etc.

I am planning to visit your district on (date). While there I would like to achieve the following:

a. Interview you and your Assistant for Instruction for approximately forty-five minutes each in order to collect data regarding #3b and #4 above.

b. Select fifteen percent of the teaching staff at random from a personnel roster and distribute to them a five-minute goal-ordering exercise which they will be asked to mail back to me (item #1 above).

c. Arrange for administering the same goal-ordering exercise to all members of your administrative staff, plus an opinionnaire taking about ten minutes (items #1 and #3a above).

d. Arrange for administering the same goal-ordering exercise to all members of your board of education (item #1 above).

e. Examine personnel information to collect data regarding the age and extent of professional preparation of your teaching staff (item #2 above).

Let me assure you that I realize that a researcher may be potentially disrupting and disturbing in the process of collecting data within a district. With this in mind, I am prepared to be very flexible in appreciation of the opportunity to collect such data. Also be assured that responses of the various employees and personnel of the district, though they may call for brief personal data for the purpose of analysis, are completely anonymous. In the final report of this project, there will be no way in which the subject districts may be identified. In return for this opportunity provided me, I intend to share with you the data I collect in your district and a copy of the final research report when the project is completed.

I am very pleased with the warm and understanding reception afforded me by you upon my visit to your district. I am looking forward to my next visit for the purposes outlined above.

Sincerely,

Elvin F. Peets
Dept. of Educ. Leadership
Western Michigan Univ.

Exhibit 10



SUPERINTENDENT INTERVIEW SCHEDULE

Concerning the District Generally:

1. What is the current enrollment of the district?
2. Approximately how many square miles are covered by the district?
3. How would you describe the type of community predominant in the school district (rural, suburban, urban, etc.)?
4. How would you describe the majority of adult residents of the school district (blue-collar, white-collar, farmers, middle-class, upper-class, etc.)?
5. What are the current millage rates (allocated, extra-voted for operation, extra-voted for debt retirement)?
6. What is the current assessed value (SEV) per pupil?
7. What has been the record of millage elections in this district over the past five years (the number of successful and unsuccessful elections, 1964-65 through 1968-69)?
8. Have there been any other school district elections during the past five years (bond issues for building program, etc.) and what was the outcome?
9. What was the current expense of education per pupil for the 1968-69 school year (optional)?

Concerning the Teaching Staff:

1. How many full-time classroom teachers are there in the district?
2. How many other certificated employees are there, excluding administrators?
3. Do you employ curriculum consultants to work with your classroom teachers who are not considered administrators?
4. How many teachers did you hire as replacements for teachers that left your district for the current year?
5. How many teachers did you hire to fill new positions for this current year?
6. What has been the history of negotiations with teachers over the past five years (number of contracts negotiated, number of fact-findings, mediations, arbitrations, strikes, etc.)?

Concerning the Administrative Staff:

1. How many administrators are there in the district in

addition to yourself?
2. How many of them are building principals?
3. Of those that remain, how many are designated as Assistant Superintendents or Administrative Assistants?
4. Would you say that most administrators have been promoted from teaching positions within the district or have been recruited from other districts to be administrators here?

Concerning the Superintendent:

1. What is your age?
2. From what university(s) did you receive your Bachelor's and Master's Degrees?
3. How many semester hours have you taken beyond your Master's Degree and where, generally, were they taken?
4. What is your annual salary, in even thousands?
5. What benefits do you receive beyond those received by other administrators in this district (house, car, etc.)?
6. How many years in all have you been employed in education?
7. How many years were you an administrator other than a superintendent?
8. At what general level and for how many years did you teach?
9. How many years have you been a superintendent (here)?
10. Were you employed by this district as an administrator and/or teacher before becoming the superintendent?
11. In what district were you employed before you came to this district?
12. What was your position in that district?
13. What was the enrollment of that district when you left it?
14. What was your first position with this district?
15. In what professional organizations do you hold memberships?
16. What offices do you hold or have you held in these professional organizations?
17. In what nonprofessional organizations do you hold memberships?
18. What offices do you hold or have you held in these nonprofessional organizations?
19. To whom do you most commonly turn for advice and counsel concerning school system affairs?
20. Are you the head, or a member, of the negotiating team for the Board of Education?

Date: _____

Administrator:

Attached you will find a short pencil and paper opinionnaire concerning a number of social and personal issues. Your district has been selected and all administrators are being asked to participate in a research project I am conducting as a part of advanced study in education at Western Michigan University.

Please take the ten minutes or so that are necessary and complete this opinionnaire and return it to me. A stamped envelope has been provided for your convenience. Please remember that your response is to be anonymous, although the basic respondent data are requested for analysis purposes.

This research project has been generally explained to your superintendent and has his approval. General findings only will be provided him prior to the end of the current school year.

Thank you, in advance, for your kind consideration and cooperation in filling out and returning this opinionnaire.

Sincerely,

Elvin F. Peets
Dept. of Educ. Leadership
Western Michigan Univ.

OPINIONNAIRE
Respondent Data Sheet

District _____ Date _____

Respondent please fill the appropriate spaces below:

1. Position: Teacher _____
   Administrator _____
   Board of Education Member _____

2. Number of Years of Experience:
   As Teacher _____
   As Administrator _____
   As Board of Education Member _____

3. Years with Present District: _____

4. Education Level: (Check highest attained)
   Less than High School Diploma _____
   High School Diploma _____
   Less than BA or BS Degree _____
   Bachelor's Degree (BA or BS) _____
   BA or BS Degree plus 15 Semester Hours _____
   Master's Degree (MA, MS, ME, etc.) _____
   Master's Degree plus 15 Semester Hours _____
   Specialist's Degree or Master's + 30 SH _____
   More than a Specialist's Degree _____

5. Sex: Male _____
   Female _____

6. Age: 20 to 29 years _____ 40 to 49 years _____
   30 to 39 years _____ 50 to 59 years _____
   60 or more years _____

Exhibit 13



## OPINIONNAIRE

The following is a survey of the opinions of people in general about a number of social and personal questions. Of course, there are many different answers. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view. You may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others. Whether you agree or disagree with any statement, you can be sure that many other people feel the same as you do.

Mark each statement on the sheet according to how you agree or disagree with it. Please mark every one. Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

| | | | |
|---|---|---|---|
| +1: | I AGREE A LITTLE | -1: | I DISAGREE A LITTLE |
| +2: | I AGREE ON THE WHOLE | -2: | I DISAGREE ON THE WHOLE |
| +3: | I AGREE VERY MUCH | -3: | I DISAGREE VERY MUCH |

---

_____ 1. A person who thinks primarily of his own happiness is beneath contempt.

_____ 2. The main thing is for a person to want to do something important.

_____ 3. I wish people would be more definite about things.

_____ 4. In a discussion, I often find it necessary to repeat myself several times to make sure I am being understood.

_____ 5. Most people just don't know what's good for them.

_____ 6. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.

_____ 7. In times like these, a person must be pretty selfish if he considers his own happiness primarily.

_____ 8. A man who does not believe in some great cause has not really lived.

_____ 9. I work under a great deal of tension at times.

_____10. I'd like it if I should find someone who would tell me how to solve my personal problems.

_____11. Of all the different philosophies which have existed in this world, there is probabily only one which is correct.

_____12. Whether it's all right to manipulate people or not, it is certainly all right when it's for their own good.

_____13. It is when a person devotes himself to an ideal or cause that his life becomes meaningful.

_____14. In this complicated world of ours, the only way we can know what is going on is to rely upon leaders or experts who can be trusted.

_____15. If people would talk less and work more, everybody would be better off.

_____16. There are a number of persons I have come to hate because of the things they stand for.

_____17. There is so much to be done and so little time to do it in.

_____18. It is when a person devotes himself to an ideal or cause that he becomes important.

_____19. It is better to be a dead hero than a live coward.

_____20. A group which tolerates too much difference of opinion among its own members cannot exist for long.

_____21. The businessman and manufacturer are much more important to society than the artist and the professor.

_____22. It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes.

_____23. While I don't like to admit this even to myself, I sometimes have the ambition to become a great man, like Einstein, or Beethoven, or Shakespeare.

_____24. Plain common sense tells you that prejudice can be removed by education, not legislation.

_____25. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary at times to restrict the freedom of certain political groups.

_____26. If a man is to accomplish his mission in life, it is sometimes necessary to gamble "all or nothing at all."

_____27. A person must be pretty stupid if he still believes in a difference between races.

_____28. Most people just don't give a "damn" about others.

_____29. A person who gets enthusiastic about a number of causes is likely to be a pretty "wishy-washy" sort of person.

_____30. Do unto others as they do unto you.

_____31. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

_____32. If given a chance, I would do something that would be of great benefit to the world.

_____33. The trouble with many people is that they don't take things seriously enough.

_____34. In times like these, it is often necessary to be on guard against ideas put out by certain people or groups in one's own camp than by those in the opposing camp.

_____35. In a heated discussion, I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.

_____36. It bothers me when something unexpected interrupts my daily routine.

_____37. Once I get wound up in a heated discussion, I just can't stop.

_____38. There are two kinds of people in this world: those who are on the side of truth and those who are against it.

_____39. What the youth needs is strict discipline, rugged determination, and the will to work and fight for family and country.

_____40. Man on his own is a helpless and miserable creature.

_____41. The United States and Russia have just about nothing in common.

_____42. I set a high standard for myself and I feel others should do the same.

_____43. In the history of mankind, there have probably been just a handful of really great thinkers.

_____44. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.

_____45. Appreciation of others is a healthy attitude, since it is the only way to have them appreciate you.

_____46. The present is all too often full of unhappiness. It is the future that counts.

_____47. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what is going on.

_____48. People who seem unsure and uncertain about things make me feel uncomfortable.

_____49. Fundamentally, the world we live in is a pretty lonely place.

_____50. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

_____51. In general, full economic security is bad; most

men wouldn't work if they didn't need the money for eating and living.

_____52. The worst crime a person can commit is to attack publicly the people who believe in the same things he does.

_____53. In the long run, the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

_____54. The American re-armament is clear and positive proof that we are willing to sacrifice to preserve our freedom.

_____55. Most of the ideas which get published nowadays aren't worth the paper they are printed on.

_____56. It is only natural for a person to be rather fearful of the future.

_____57. Most of the arguments or quarrels I get into are over matters of principle.

_____58. My blood boils whenever a person stubbornly refuses to admit he's wrong.

_____59. When it comes to differences of opinion in religion, we must be careful not to compromise with those who believe differently from the way we do.

_____60. America may not be perfect, but the American way has brought us about as close as human beings can get to a perfect society.

Exhibit 14



Date: _____

Board of Education Member:

Attached you will find a short pencil and paper exercise concerning how you view the relative importance of the goals of American education. Your district has been selected for and all Board of Education members are being asked to participate in a research project I am conducting as a part of advanced study in education at Western Michigan University.

Please take the five minutes or so that are necessary and complete the exercise and return it to me. A stamped envelope has been provided for your convenience. Please remember your response is to be anonymous, although the general basic respondent data are requested for analysis purposes.

This research project has been generally explained to your superintendent and has his approval. General findings only will be provided him prior to the end of the current school year.

Thank you, in advance, for your kind consideration and cooperation in filling out and returning this exercise.

Sincerely,

Elvin F. Peets
Dept. of Educ. Leadership
Western Michigan Univ.

Exhibit 15



Date: _____

Administrator:

Attached you will find a short pencil and paper exercise concerning how you view the relative importance of the goals of American education. Your district has been selected for and all administrators are being asked to participate in a research project I am conducting as a part of advanced study in education at Western Michigan University.

Please take the five minutes or so that are necessary and complete this exercise and return it to me. A stamped envelope has been provided for your convenience. Please remember that your response is to be anonymous, although the basic respondent data are requested for analysis purposes.

This research project has been generally explained to your superintendent and has his approval. General findings only will be provided him prior to the end of the current school year.

Thank you, in advance, for your kind consideration and cooperation in filling out and returning this exercise.

Sincerely,

Elvin F. Peets
Dept. of Educ. Leadership
Western Michigan Univ.

TEACHER: _____ DATE: _____

GRADE OR DEPT.: _____

SCHOOL: _____

Teacher:

Attached you will find a short pencil and paper exercise concerning how you view the relative importance of the goals of American education. You have been selected at random as a respondent in a research project I am conducting as a part of advanced study in education at Western Michigan University.

Please take the five minutes or so that are necessary and complete the exercise and return it to me. A stamped envelope has been provided for your convenience. Please remember that your response is to be anonymous, although general basic respondent data are requested for analysis purposes. Please do not return this cover letter.

This research project has been explained to your district superintendent and this exercise is being distributed with his approval. General findings only will be provided him prior to the end of the current school year.

Thank you, in advance, for your kind consideration and cooperation in filling out and returning this exercise.

Sincerely,

Elvin F. Peets
Dept. of Educ. Leadership
Western Michigan Univ.

GOALS OF AMERICAN EDUCATION
Respondent Data Sheet

District _____ Date _____

Respondent please fill the appropriate spaces below:

1. Position: Teacher _____
   Administrator _____
   Board of Education Member _____

2. Number of Years of Experience:

   As Teacher _____
   As Administrator _____
   As Board of Education Member _____

3. Years with Present District: _____

4. Education Level: (Check highest attained)

   Less than High School Diploma _____
   High School Diploma _____
   Less than BA or BS Degree _____
   Bachelor's Degree (BA or BS) _____
   BA or BS Degree plus 15 Semester Hours _____
   Master's Degree (MA, MS, ME, etc.) _____
   Master's Degree plus 15 Semester House _____
   Specialist's Degree or Master's + 30 SH _____
   More than a Specialist's Degree _____

5. Sex: Male _____
   Female _____

6. Age: 20 to 29 years _____ 40 to 49 years _____
   30 to 39 years _____ 50 to 59 years _____
   60 or more years _____

GOALS OF AMERICAN EDUCATION
Ordering Exercise

This is an exercise in which you will have the opportunity to express how you view the tasks of the public schools. Below are listed fifteen common goals of American education. All have been included in statements by national commissions. All are desirable and most teachers, administrators, and board of education members would hope all would be attained. However, some goals may be more important than others. Please order the goals listed below by their importance for your district, as you view them, by placing "1" before the goal you deem most important, "2" by the next most important goal, "3" by the next most important, "4" by the next, "5," "6," "7," "8," etc.

_____ Courses designed to promote safety. These include instruction in driving automobiles, swimming, civil defense, etc.

_____ A general education as good as or better than that offered in the past, with increased emphasis on the physical and social sciences.

_____ Organized recreational and social activities.

_____ Programs designed to develop patriotism and good citizenship.

_____ Programs designed to foster wholesome family life.

_____ Programs designed to foster mental health.

_____ Vocational education tailored to the abilities of each pupil and to the needs of the community and the nation.

_____ Programs designed to acquaint students with countries other than their own in an effort to help them understand the problems America faces in international relations.

_____ Courses designed to teach domestic skills.

_____ Instruction to meet the needs of abler students.

_____ Training in leisure-time activities such as music, dancing, avocational reading, and hobbies.

_____ Physical education, ranging from systematic exercises, physical therapy, to intramural sports, to interscholastic competition.

_____ A variety of health services for all children, including both physical and dental inspections, and instruction aimed at bettering health knowledge and habits.

_____ Special treatment for children with speech and/or reading difficulties and other handicaps.