

A STUDY OF THE BELIEF SYSTEMS OF
ADMINISTRATORS AND TEACHERS IN
INNOVATIVE AND NON-INNOVATIVE
SCHOOL DISTRICTS

Thesis for the Degree of Ph. D.

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John W. Childs

1965

THESIS



This is to certify that the

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IN INNOVATIVE AND NON-INNOVATIVE
SCHOOL DISTRICTS

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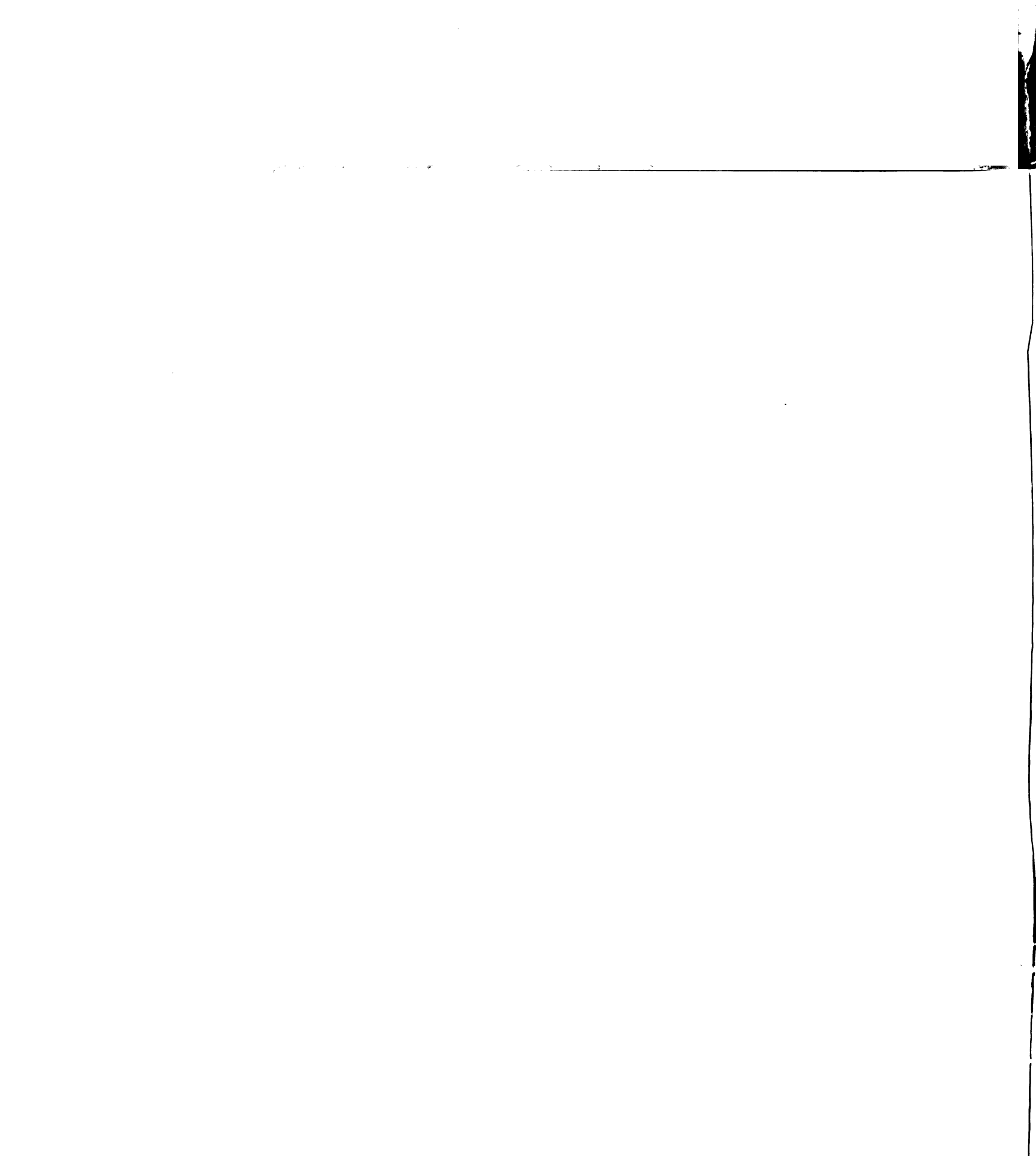
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ABSTRACT

A STUDY OF THE BELIEF SYSTEMS
OF ADMINISTRATORS AND TEACHERS IN
INNOVATIVE AND NON-INNOVATIVE SCHOOL DISTRICTS

by John W. Childs

The purpose of the study was to collect and examine empirical evidence relevant to the idea that there was a relationship between the nature of the belief systems of individuals in school districts and the adoption of new educational practices. Previous completed research dealing with belief systems and innovation had not dealt with an educator population. However, open belief systems had been related to the adoption of new farm practices in a study of Iowa farmers.¹

Eight school districts were selected for study using a constructed innovativeness scale based on data reported to the Michigan Department of Public Instruction in the Five Year Survey of Progress in Michigan School Districts. Four cost factors were used to select the districts from the extreme ends of the innovativeness scores distribution. The cost factors were: size, expenditure, state equalized evaluation, and operational

4



John W. Childs

millage. Districts were identified as being innovative or non-innovative and as being high cost factor districts or low cost factor districts.

The hypotheses in general form were:

1. A greater number of administrators who are in innovative school systems will have open belief systems than is the case with administrators in non-innovative school systems.
2. A greater number of teachers who are in innovative school systems will have open belief systems than is the case with teachers in non-innovative school systems.

Empirical data were gathered concerning three additional questions. They were:

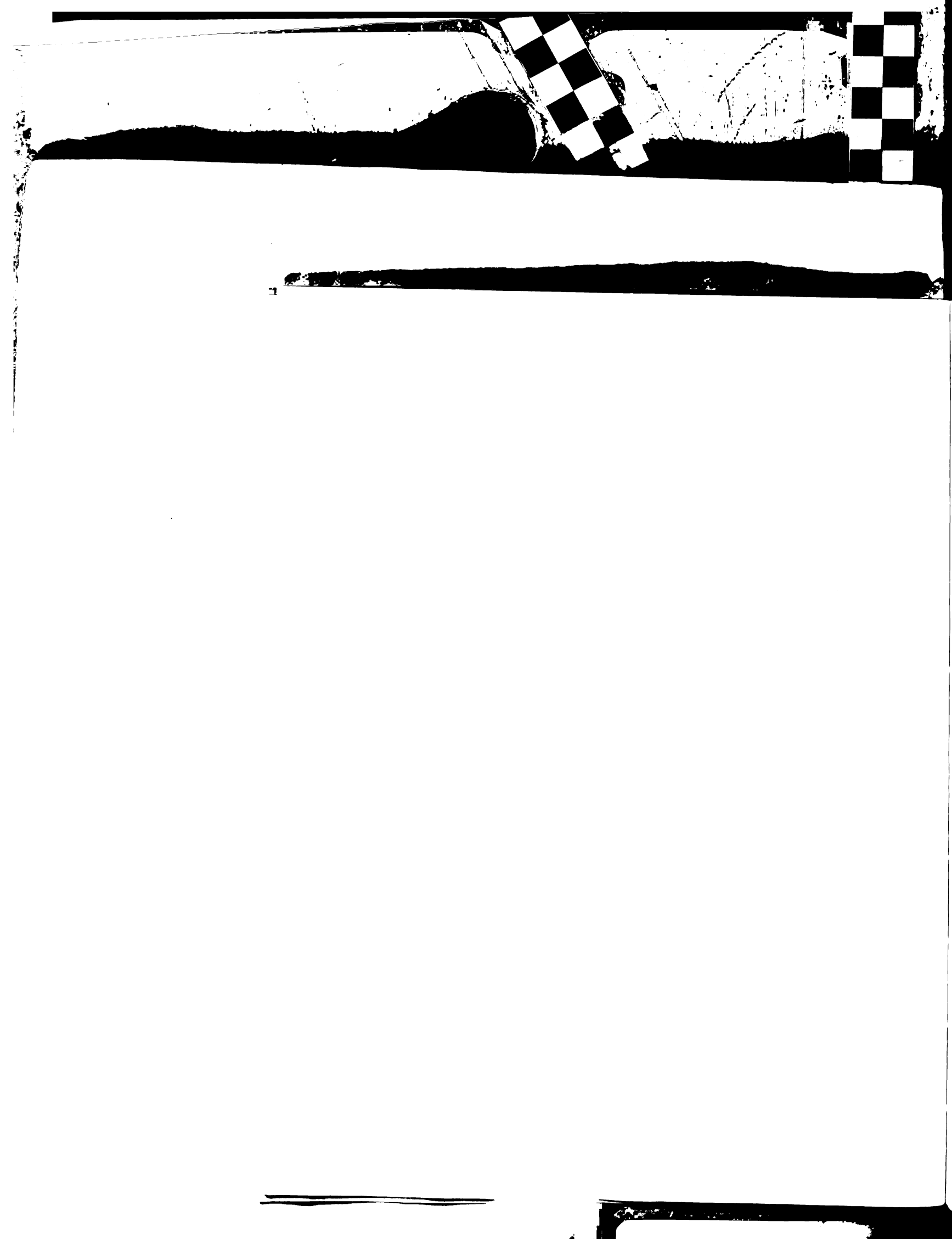
1. What is the distribution of scores obtained on a measure of open-closed belief systems for administrators and for teachers?
2. How does the adoption rate for the school districts in this study compare with the adoption rate graphed in the Associated Public School Systems 1955 Time Scale study?
3. Can the school districts utilized in this study be described so as to permit identification of like systems in which to replicate the study in future research based on this study?

Fisher's Exact Probability Test and chi-square analysis were used to test the hypotheses. The first hypothesis was neither supported nor rejected. The second hypothesis was supported. The chi-square obtained was significant at the .01 level. Innovative school districts had a larger proportion of open belief system teachers than did the non-innovative school districts.

The distribution of dogmatism scores for an educator population was slightly leptokurtic. However, normal curve statistics could still be used.

Difficulty in the collection of data from school superintendents concerning the date when an individual practice was introduced in their district precluded comparison of adoption curves with those found in the 1955 Associated Public School Systems study. The Associated Public School Systems Time Scale did provide data which confirmed the classification of the school districts as innovative or non-innovative.

The descriptive effort was hampered by the vast amount of variation between school districts with respect to innovation. The districts were described in terms of the four cost factors, administrative tenure, geographical location, and population density. Further efforts to apply the findings of this study should be tempered by the experimental use of the Dogmatism Scale.





John W. Childs

Confidence interval estimates for the mean scores of teachers and administrators on the Dogmatism Scale were computed. Examination of the estimates showed that the obtained means were unlikely occurrences under the hypothesis that they were from the same population.

¹Everett M. Rogers, "Personality Correlates of the Adoption of Technological Practices," Rural Sociology, XX, pp. 267-268.

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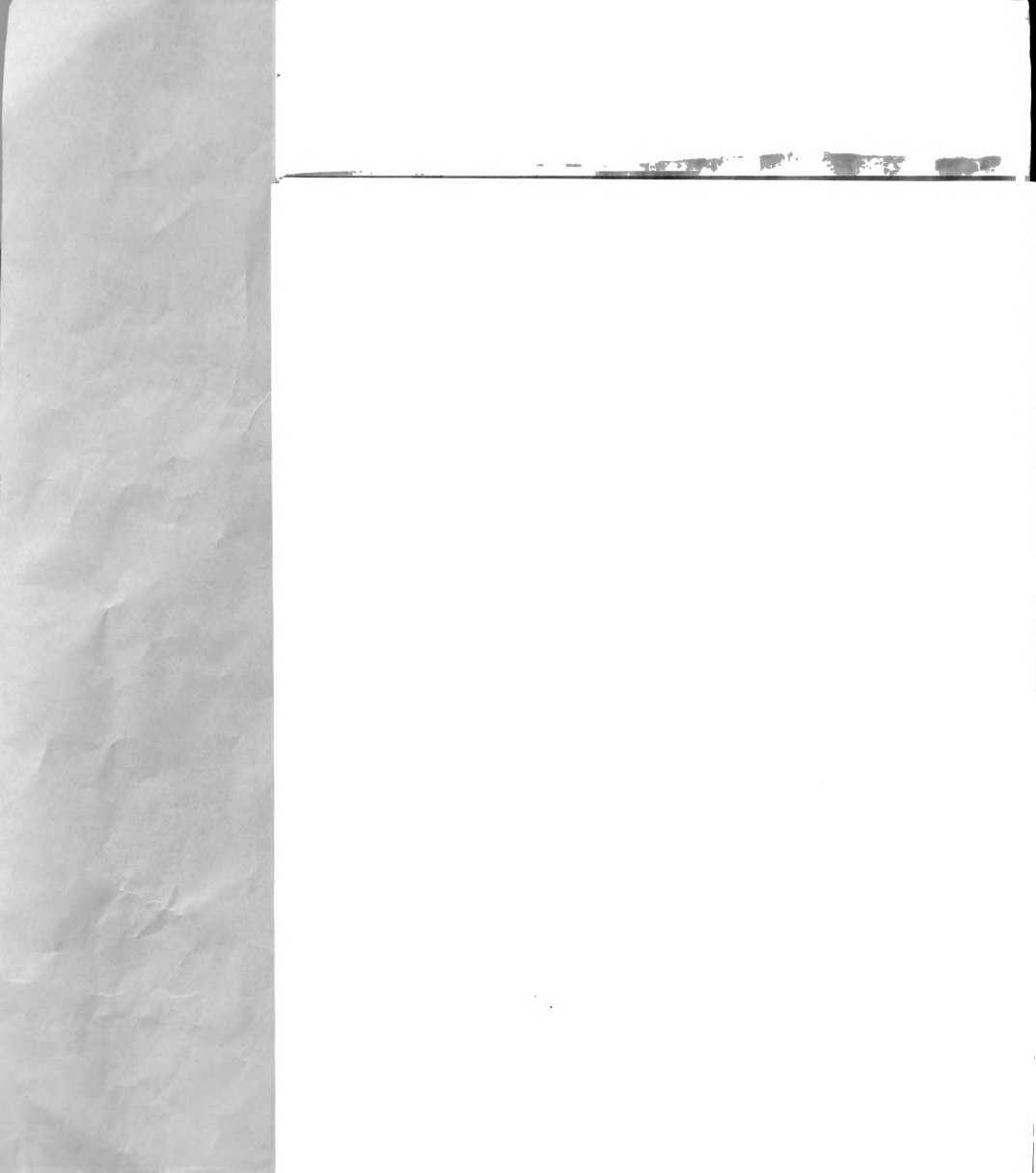
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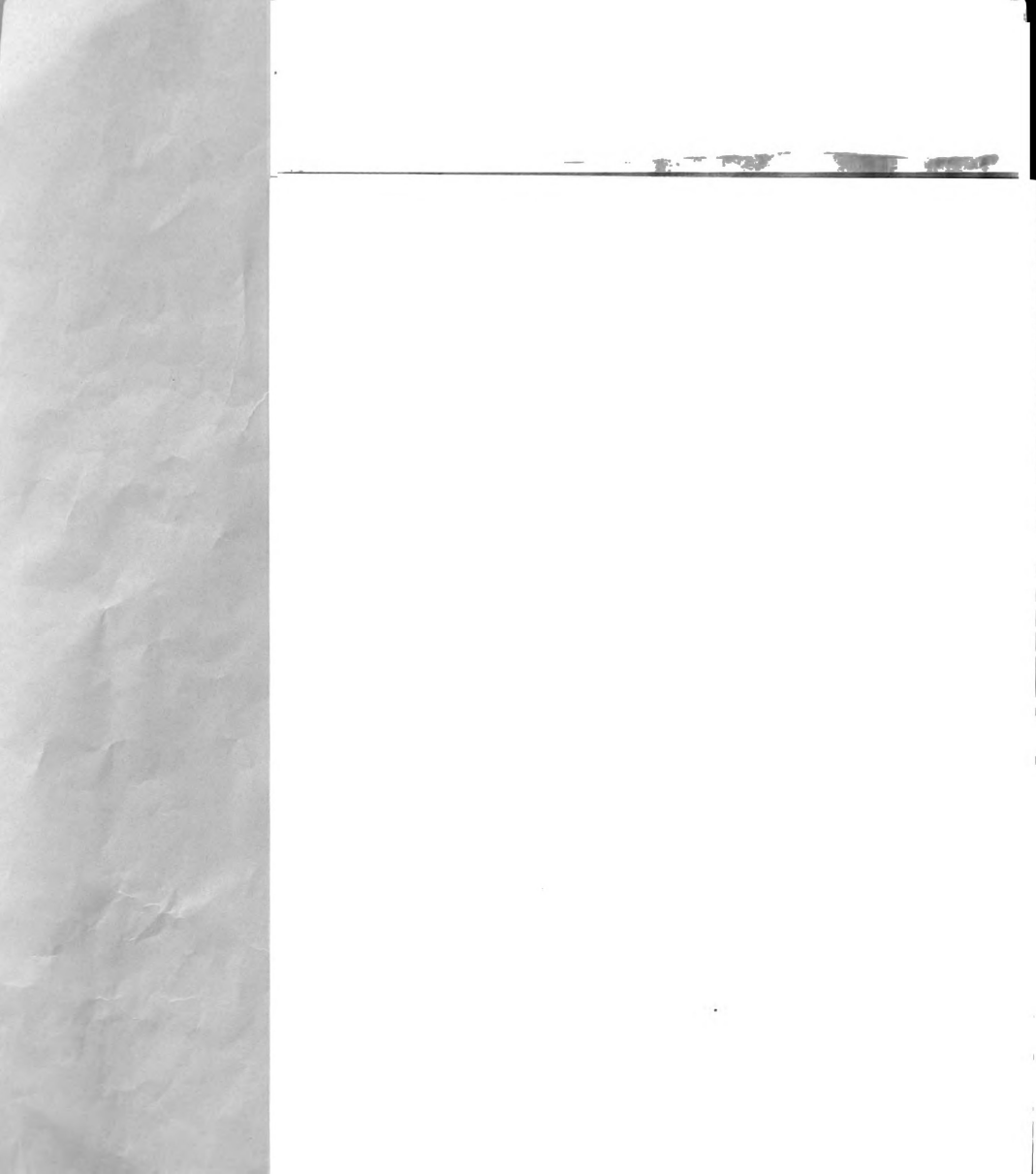
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The spiritual, emotional, and intellectual support given without reservation by my wife, Colene, and my children, Cynthia and Kurt, made this period of study one of learning and growth. In addition, credit is due my wife for the many hours of labor in typing drafts, final copy, and proofing all the material.

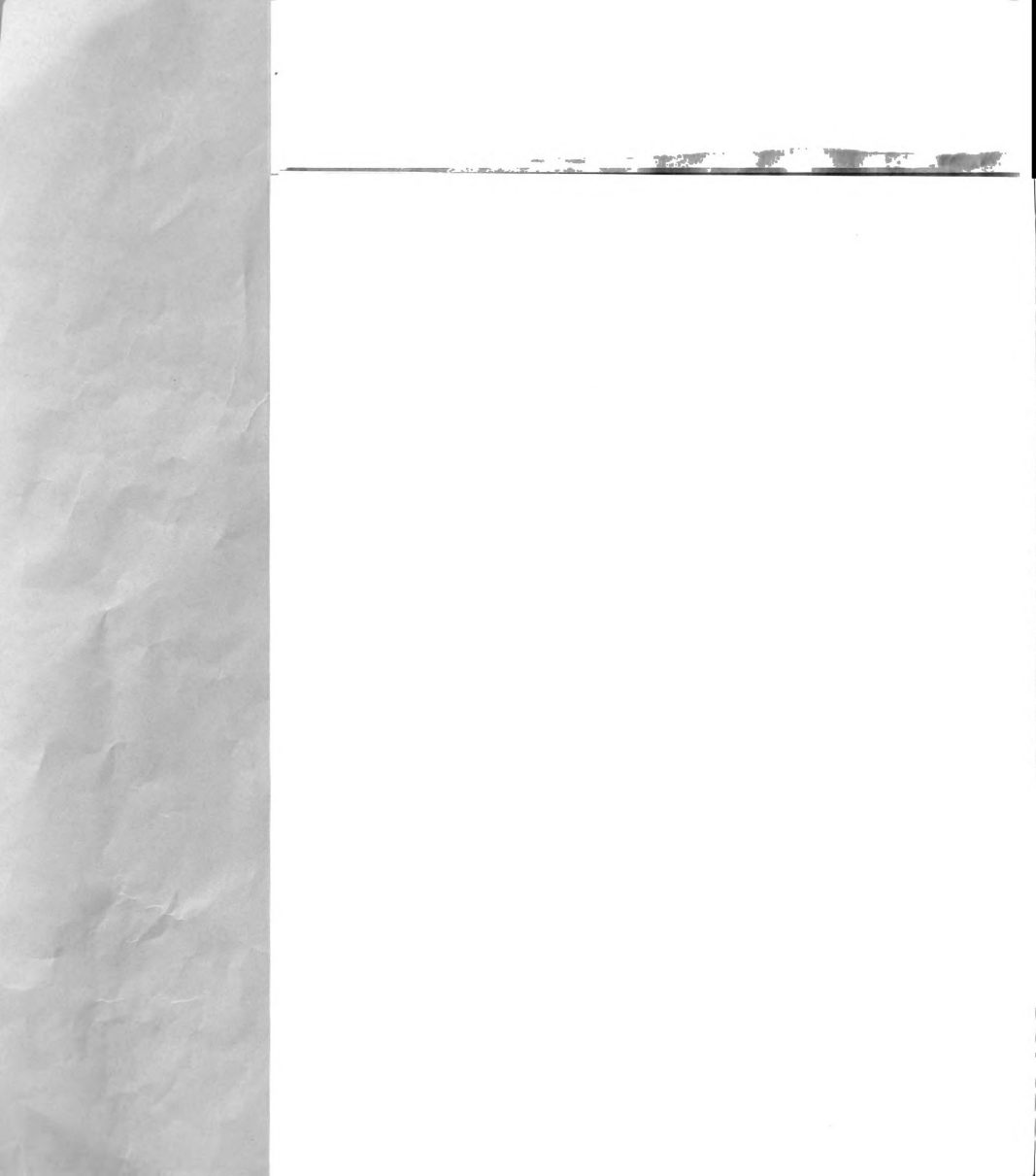
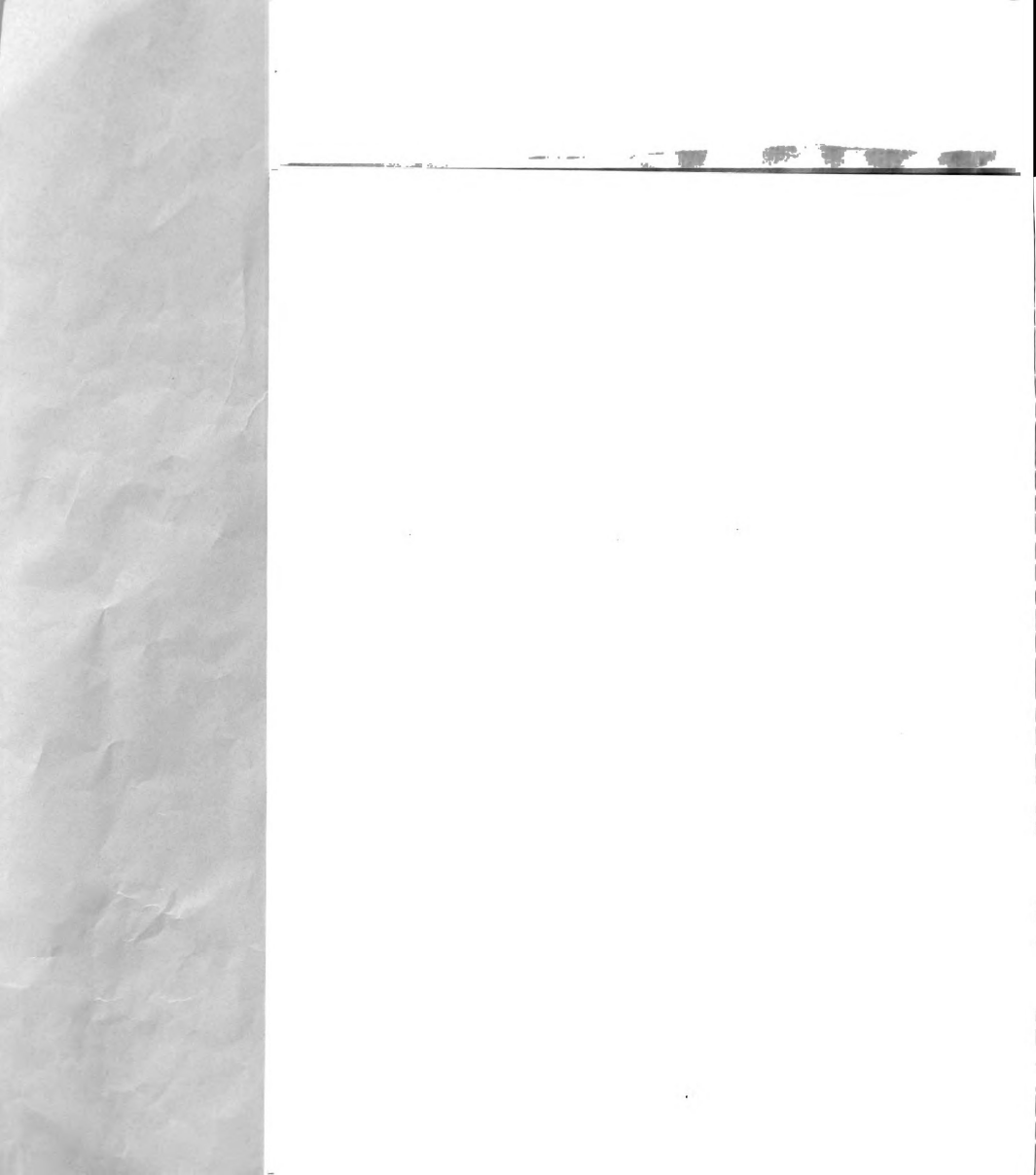


TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	11
LIST OF TABLES.	vi
LIST OF EXHIBITS IN THE APPENDIX.	vii
 Chapter	
I. THE PROBLEM	1
Need for the Study	2
Purpose of the Study	3
Importance of the Study	4
Scope and Delimitation of the Study	8
Definition of Terms.	9
Hypotheses.	11
Overview	12
II. RELATED LITERATURE	14
Review of Closely Related Studies	14
Innovation Studies that Dealt with Belief Systems	15
Studies that Dealt with Belief Systems	17
Review of Studies of General Innovation	22
General Innovation.	22
Innovation in Education	27
Summary.	32
III. PROCEDURES.	33
Selection of Schools	34
Instrumentation	37
Statistical Hypotheses.	41
Analysis	42
Summary.	43



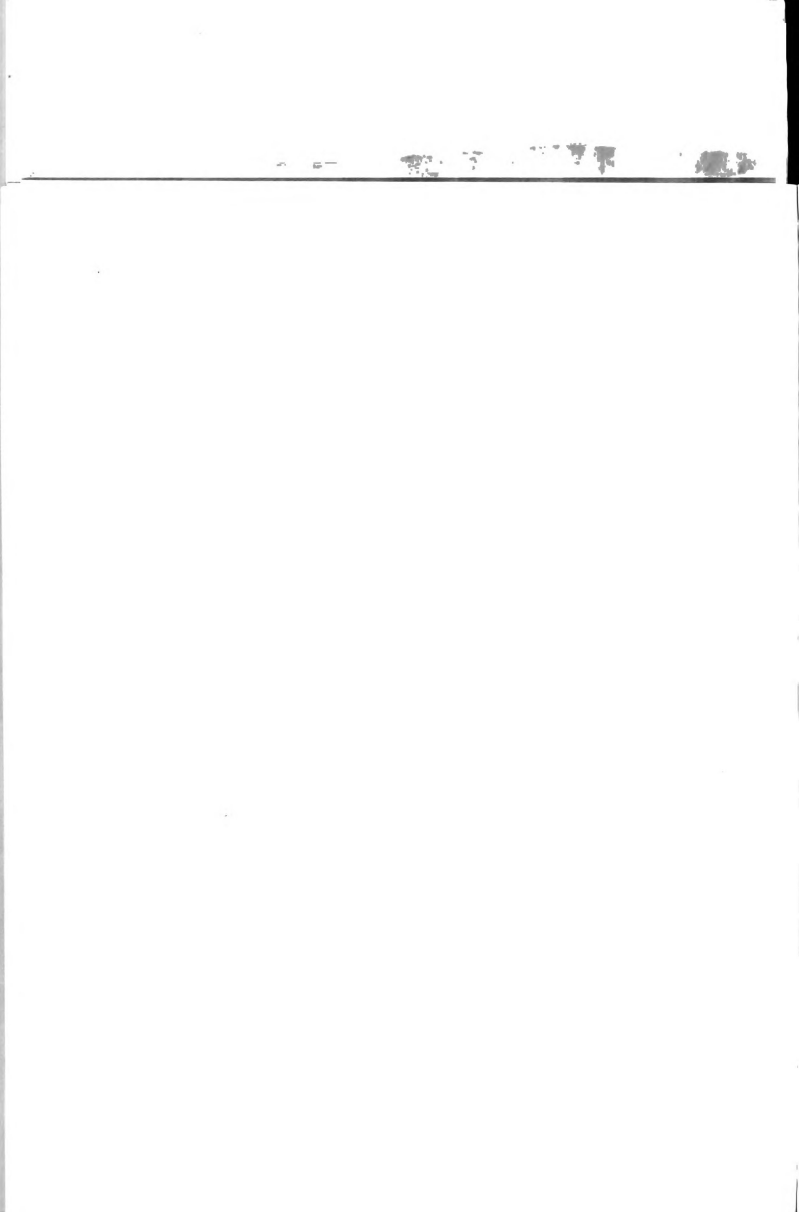
Chapter	Page
IV. ANALYSIS OF RESULTS.	45
Summary and Analysis of the Data	45
Hypothesis Testing.	46
Adoption Patterns in the School Districts Studied	50
Interview Data	51
Associated Public School Systems 1955 Time Scale Data.	53
Dogmatism Scores Distribution	54
The Distribution in the Total Popula- tion	55
Descriptive Characteristics of the Selected Schools	57
Length of Tenure of Administrators.	57
Educational Expenditures and Cost Fac- tors	58
Location of the School Districts Stud- ied.	60
School District Population	61
Interpretation of Results	61
Interpretation of Hypothesis Testing	61
Distribution of Dogmatism Scores	64
Comparison of Adoption Rates.	65
Description of School Districts.	66
Summary.	67
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	69
Conclusions	73
Recommendations	80
APPENDIX.	83
BIBLIOGRAPHY	121

LIST OF TABLES

Table	Page
1. Distribution of administrators with open and closed belief systems in innovative and non-innovative schools	47
2. Distribution of teachers with open and closed belief systems in innovative and non-innovative schools	48
3. Percentage of teachers classed as open or closed in innovative or non-innovative school districts	49
4. Associated Public School Systems 1955 Time Scale data on adoption summary	53
5. Summary of data reflecting adoption of the thirteen practices added to the Adler Time Scale.	54
6. Frequency distribution for scores of all subjects on Dogmatism Scale	55
7. Descriptive statistics for the scores of all segments of the population tested with the Dogmatism Scale	56
8. Summary of correlations between dogmatism and age	57
9. School superintendent tenure	58
10. Summary of educational expenditures and cost factors	59
11. Simple correlations between cost factors and innovation scores.	60
12. Confidence interval estimates for means on Dogmatism Scale for teachers and administrators	65

LIST OF EXHIBITS IN THE APPENDIX

Exhibit	Page
1. Michigan Five Year Survey of Progress in Michigan Schools	83
2. Letter of Introduction to School Superinten- dent	99
3. Interview Format	100
4. Twenty Item Dogmatism Form.	113
5. Frequency Polygon for 604 School Districts' Adoption of New Practices	116
6. Frequency Polygon of Dogmatism Scores of All Subjects.	117
7. Envelcpes	118
8. Direction Sheets	119





CHAPTER I

THE PROBLEM

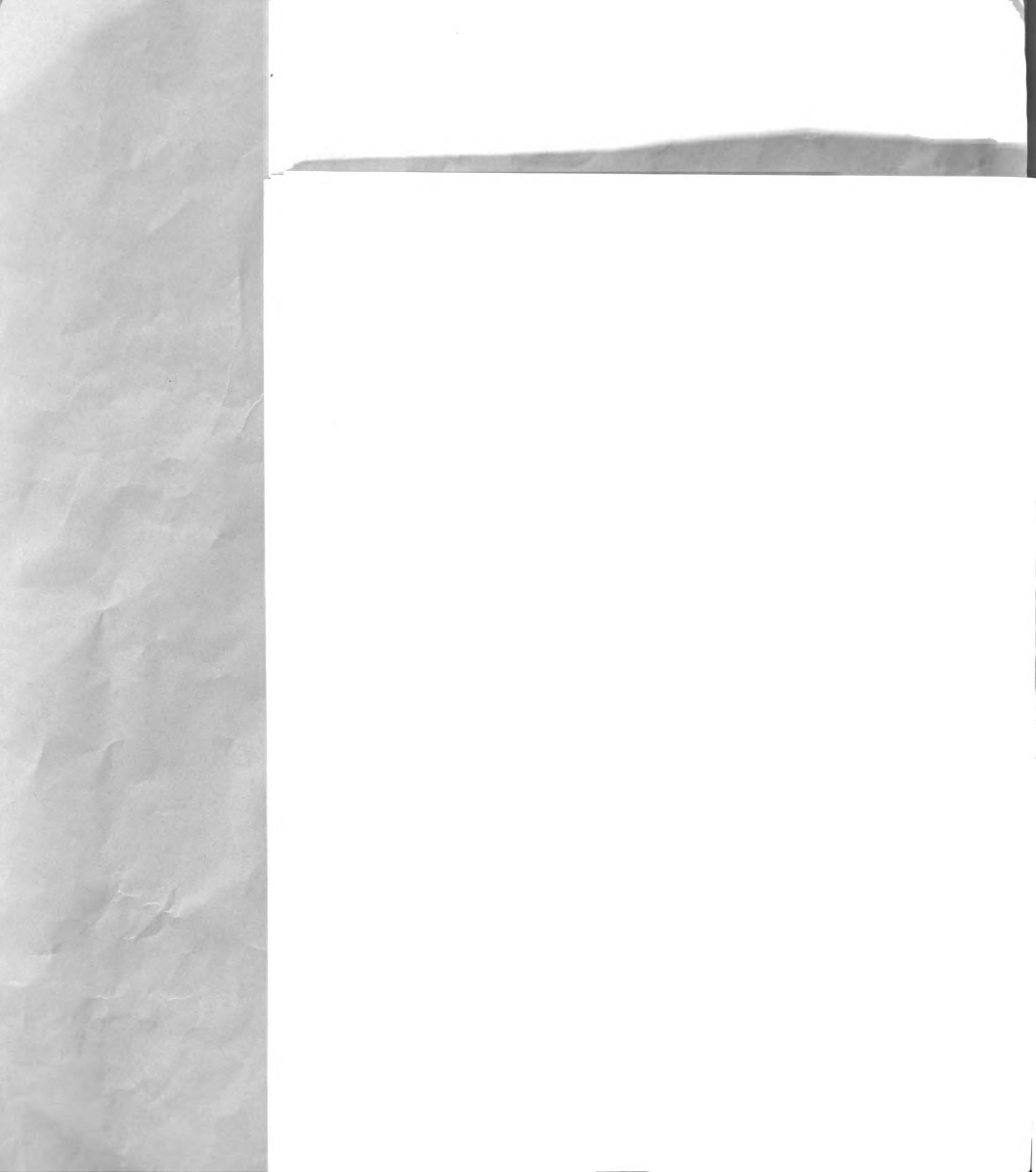
Educational innovation is discussed at all levels of education today. Many new educational practices are being invented, yet they are not being diffused rapidly to a majority of schools. Mort raises two questions which effectively specify the desired end product for the output of research dealing with educational innovation. He says:

1. How can specific change be brought about in education when it is clear that this change is needed?
2. How can a quality of readiness for change--poisedness--be developed in school systems so that they will be ready to respond to whatever changes may be needed?¹

Along with the research already completed on educational innovation, the research reported in this study continues to add to the evidence that may be the basis for answers to the above questions.

The specific questions and hypotheses of this study are presented in the following sections of this

¹Paul R. Mort, "Foreward," Administration for Adaptability, ed. Donald H. Ross (New York: Metropolitan School Study Council, Teachers College, Columbia University, 1958), p. vi.



chapter. The rationale and theory appropriate to these questions and hypotheses are discussed.

Need for the Study

This study comes from the general literature on diffusion of new practices and from the study of educational innovations. Much of the literature holds up the optimistic belief that change is possible in education. If the adoption of new practices is to be increased, evidence is required to form a basis for the diffusion of new practices in the schools. In a number of studies several different factors have been related to educational innovation, such as costs, size, and amount of available information. There is an absence of information about the personality of educational adopters of new practices. In compiling material for the review of literature only two studies of belief systems and innovation were found.

Rogers suggests that there are four profitable approaches to the research needed. One of these approaches is the study of "the personality of the school staff as it affects innovativeness."² He points out that little has been done in this area so far. Information about the personality of innovators and non-innovators is needed for the

²Everett M. Rogers, Innovations: Research Design and Field Studies, A paper presented at the Conference on Novel Strategies and Tactics for Field Studies Involving New Educational Media, May 10-12, 1965 (Columbus, Ohio: The Conference, 1965).



development of theory about the nature of the change process. Such information would be useful to change agents, institutions, and other research efforts.

A statement by C. P. Snow indicates the difficulty of implementing change and the need for the study of innovation:

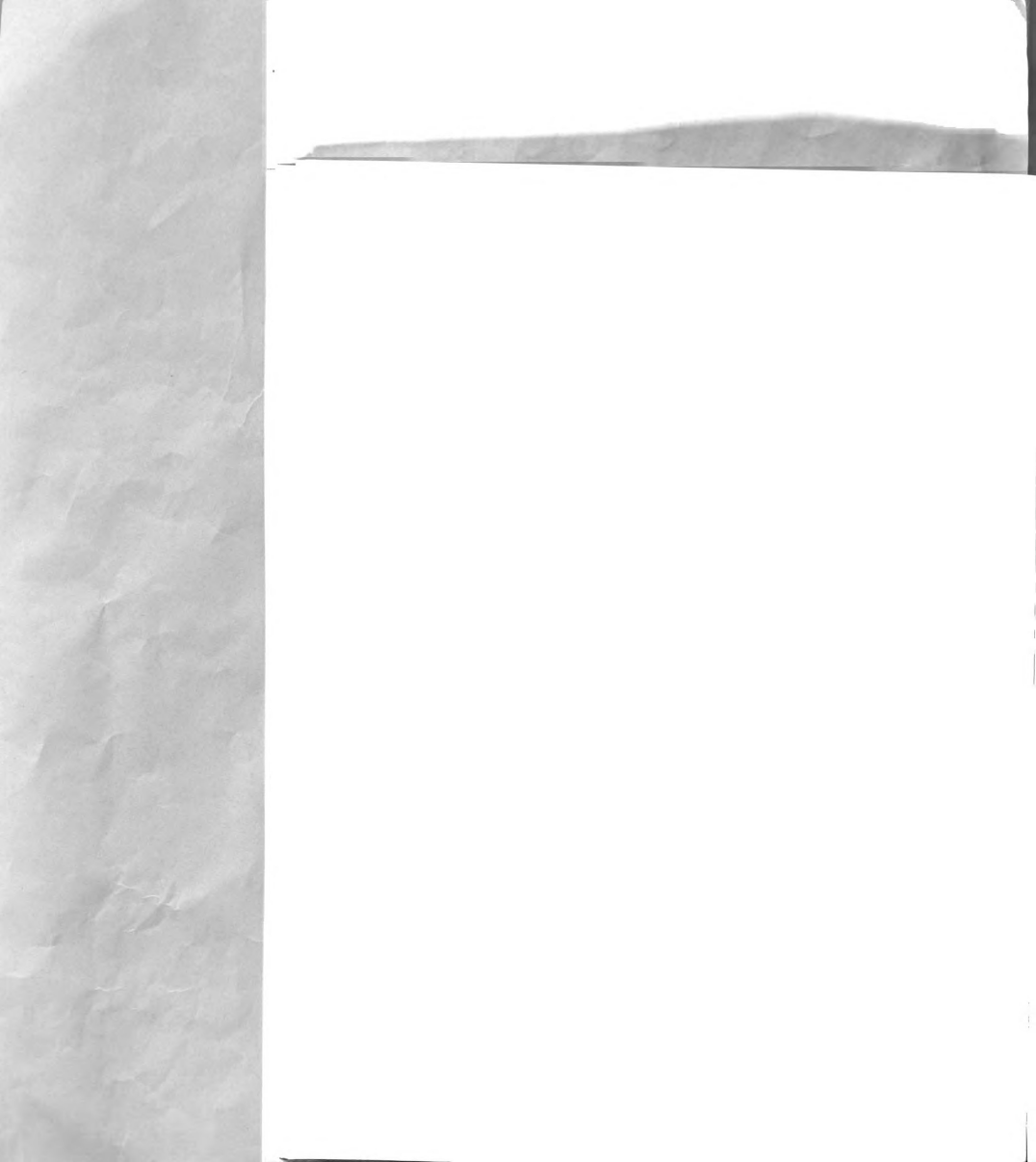
In a society like ours, academic patterns change more slowly than any others. In my lifetime, in England, they have crystallized rather than loosened. I used to think that it would be about as hard to change, say, the Oxford and Cambridge scholarship examination as to conduct a major revolution. I now believe that I was over-optimistic.³

This statement seems to characterize the findings of much of the research dealing with educational innovation. It is essential that researchers investigating change maintain an awareness of the necessity for increasing change rates. Evidence which can be used to increase change rates is needed if education is to meet the demands placed upon it today.

Purpose of the Study

It is the purpose of this study to gather empirical evidence relevant to the idea that there is a relationship

³C. P. Snow, "Miasma, Darkness and Torpidity," New Statesman, XLII (1961).

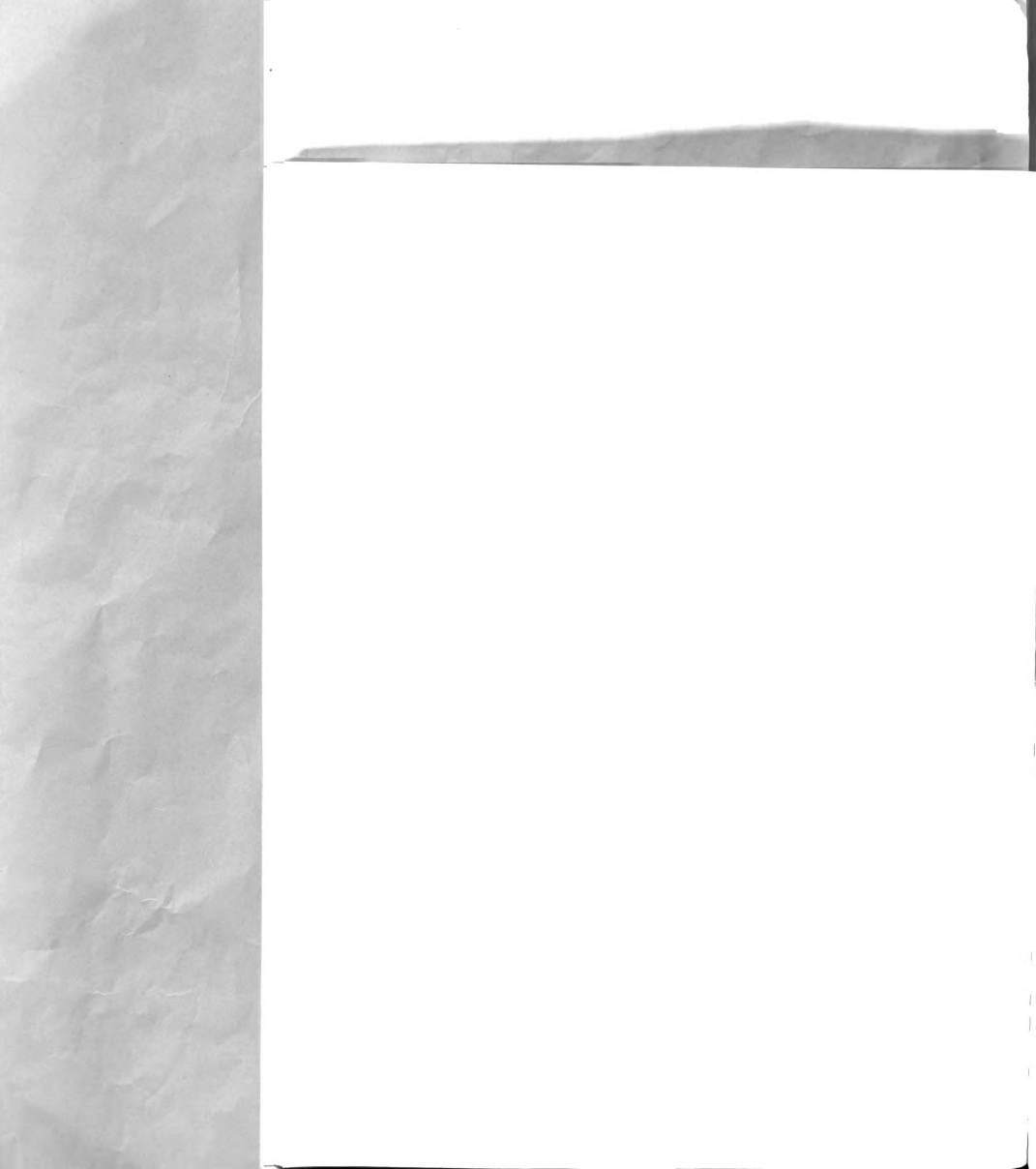


between the nature of the belief systems* (as described by Rokeach) of individuals in school districts, and their adoption of new educational practices.

Importance of the Study

Support for the position which holds that change is necessary is evident in both professional and popular publications. Frequently, demands for change at increased rates are premised upon the growth of population and the growth of knowledge. From the basis of the current explosion in these two areas, much recent criticism has been leveled at education. This criticism both assails the present status of the establishment, and demands and defines the need for increased rates of innovation to deal with the resulting problems. These matters have been the subject of frequent discourse for many writers, e.g. Finn, Ramo, Price, Wiles, and others (See Bibliography). These writers seem to suggest today that if new practices are to be implemented in short periods of time (less than fifty years), then research must provide some answers concerning the nature of the resistance to educational innovations.

*The belief system is used here to denote all the beliefs, sets, expectancies, or hypotheses that a person at a given time accepts as true of the world in which he lives.



A considerable amount of study has already gone into the making of a large bank of data and preliminary evidence on the diffusion of innovations. A recent bibliography lists some 678 entries,⁴ yet little effort has been expended to develop tools for the educational practitioner to use in stepping up the change process. Several researchers have demonstrated the importance of change agents in such areas as medicine and agriculture.⁵ A number of innovative process models are available. Various categorization systems have been developed for "innovators," "innovations," and various steps in the diffusion of ideas, objects, and practices have been identified. Out of these efforts have come numerous suggestions for further research. This literature on the diffusion of educational practices, and on diffusion in general, provides the basis for the development of the innovation variable as one of the constructs of interest in this study.

The other variable in this study comes in part from working with public schools, teachers, college faculty, and fellow graduate students. One observation seems to occur frequently: some people are more open to experience than

⁴Everett M. Rogers, Bibliography of Research on the Diffusion of Innovations (Michigan State University, Dept. of Communication, College of Communication Arts, 1964).

⁵Everett M. Rogers, Diffusion of Innovations (New York: The Free Press of Glencoe, 1962), pp. 254-284.

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others, new ideas appeal to some individuals more than others, and new or different information is acquired more readily by some than by others. From this observation comes the idea that the degree of open or closed belief systems might explain the different ways individuals in public school systems behave toward new practices. At this point in the development of this study a search was initiated for various theoretical constructs dealing with the idea of open or closed individuals.

Rokeach⁶ has presented the primary findings dealing with the open and closed mind construct. Evidence reported by him supports the idea that open and closed belief systems might affect the adaptiveness of individuals in school systems. From this source the concepts that serve as the theoretical base for the open-closed belief system variable are drawn.

The use of the instrumentation developed by Rokeach offers the possibility of applying already documented tools to the assessment of the degree of open and closed belief systems present among teachers and administrators in school districts with different innovation rates. In this study new depth is added to the study of belief systems and belief system theory by providing empirical information on the

⁶Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960).



Dogmatism Scale distribution of scores for teachers and administrators.

Support for the need to examine the relationship of the above variables is evident in the writing of Rogers. He indicates that one of the current needs is "for more fruitful research on predicting innovativeness."⁷ The prediction of innovativeness has utility for three groups: (1) research organizations, (2) commercial companies, and (3) change agents. Educators need to be able to predict in advance the course of various new practices during their diffusion. Two national conferences⁸ have suggested that the Educational Media Specialist, along with others engaged in implementing new practices in the schools, should fulfill the role of a change agent. Change agents cannot fulfill their role on inadequate evidence now available. Rogers⁹ suggests that the study of innovation from a predictive viewpoint needs to move in the direction of a priori selection of independent variables for correlation with the

⁷Rogers, Diffusion of Innovations, pp. 62, 296.

⁸Paper developed by an audiovisual task force assembled by the NEA Division of Audiovisual Instructional Service (Washington, D.C.: September 6-8, 1962).

Papers presented at the Symposium on Identifying Techniques and Principles for Gaining Acceptance of Research Results of Use of Newer Media in Education (Lincoln, Nebraska: Nov. 24-27, 1963).

⁹Rogers, Diffusion of Innovations, p. 296.



adoption rates constructed for various groups, individuals, and institutional entities. In this study the variables, "open-closed belief systems" and "rate of adoption of new practices," are specified before examining the subjects.

Through the evidence presented in this study, several elements of the study of innovation are drawn together, providing an evidential base for the design of further research testing various propositions. The testing of these propositions may move the study of innovation along to the practical use stage.

Scope and Delimitation of the Study

Within the bounds of this area of investigation, numerous variables could be studied. This section delimits the variables, analysis, sample and extent of generalization intended for treatment in this study.

1. The variables of the study are limited to those derived from the instrumentation used to identify open or closed belief systems and to identify innovative and non-innovative school districts.

2. The statistical analyses performed in this study are limited to: testing the reliability of the measure of open or closed belief systems among teachers and administrators, testing the significance of different frequencies of open or closed belief systems among individuals in innovative or non-innovative school systems, testing for association



between the two variables, and the description of the distribution of scores on the measure of open or closed belief systems among teachers and administrators.

3. This study is limited to the selected school districts used in the study. Their selection is not random nor necessarily representative. No attempt is made to generalize the findings beyond the population used in the study.

4. The research is designed to control for selected educational cost factors of size, effort, ability, and expenditure per pupil as a single composite financial factor. The cost factor controlled for is not intended to be inclusive.

5. The conclusions of this study regarding the relationships between the major variables, belief systems, and innovation are not interpreted to indicate a causal relationship, but merely to indicate a direct association.

Definition of Terms

The terms defined in this section are those that are used to form the operational hypotheses, those that do not bear a common referent to the literature of the educational field, or those which are used in a particular and limited sense in this study.

"Administrators in school districts:" Superintendents of schools, assistant superintendents, principals, and other persons officially designated by the controlling body of the school district as administrators.

"School district:" Legally recognized school district under the School Code of the State of Michigan.

"Innovative school district:" A school district which ranks in the upper one per cent of all school districts on the number of new practices reported in the Five Year Survey of Progress in Michigan Schools.

"Non-innovative school district:" A school district which ranks in the lower twenty per cent of the districts on the number of new practices reported in the Five Year Survey of Progress in Michigan Schools.

"Open belief system administrator:" An administrator who scores one standard deviation or more above the mean score for all administrators in the study on the Rokeach Dogmatism Scale.

"Closed belief system administrator:" An administrator who scores one standard deviation or more below the mean score for all administrators in the study on the Rokeach Dogmatism Scale.

"Open belief system teacher:" A teacher who scores one standard deviation or more above the mean score for all teachers in the study on the Rokeach Dogmatism Scale.

"Closed belief system teacher:" A teacher who scores one standard deviation or more below the mean score for all teachers in the study on the Rokeach Dogmatism Scale.



"Size:" The average daily public school membership expressed in the number of children of a school district from K-12.

"Average daily membership (ADM):" The aggregate days membership for the school district divided by the number of days school was in session.

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

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

"Current expenditures per pupil:" The amount expended per pupil computed by dividing the total current operating expense by the average daily membership.

Hypotheses

The hypotheses presented here are in general research form. Each is operationalized and presented in testable form in Chapter III.

H_1 : A greater number of administrators who are in innovative school systems will have open belief systems than is the case with administrators in non-innovative school systems.

H₂: A greater number of teachers who are in innovative school systems will have open belief systems than is the case with teachers in non-innovative school systems.

In addition to the above hypotheses in this study, descriptive statistics on the following questions are reported:

1. What is the distribution of scores obtained on a measure of open-closed belief systems for administrators and for teachers?

2. How does the "adoption rate" for the school districts in this study compare with the "adoption rate" graphed in the Associated Public School Systems 1955 Time Scale study?

3. Can the school districts utilized in this study be described so as to permit identification of like systems in which to replicate the study in future research based on this study?

Overview

In this chapter a statement of the problem, the purpose of the study, the importance of the study, the scope and delimitation of the study, definition of terms, and the general hypotheses have been presented.

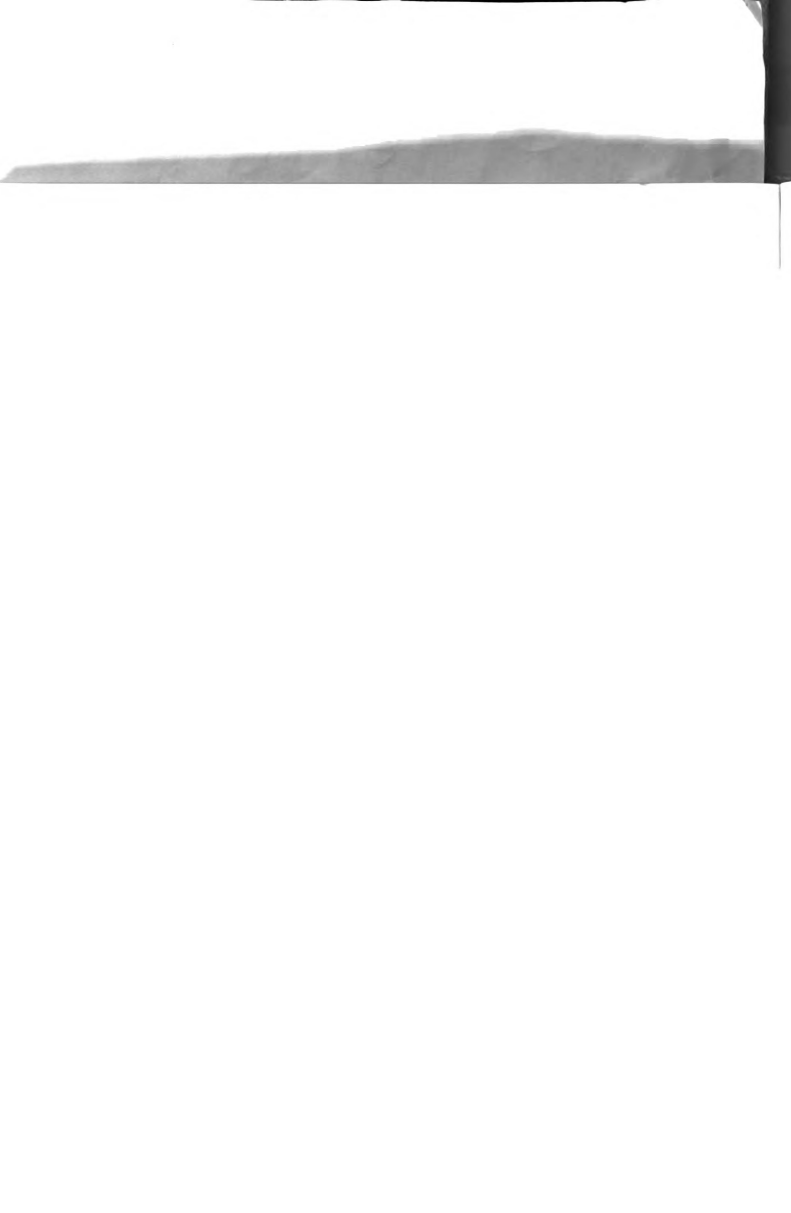
In Chapter II, a review of related literature is presented. The review includes theory related to each of the variables, studies dealing with the instrumentation, and

the pertinent findings of related empirical studies of innovation and belief systems.

In Chapter III, the procedure and methodology of this study are presented. The detailed description includes source of the data, application of the research instruments, the plan of the intensive structured interviews, selection of the school districts for study, research design, and proposed statistical treatment.

In Chapter IV, analysis of the data is reported.

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





CHAPTER II

RELATED LITERATURE

The literature specifically relating to the problem being investigated in the current study is not extensive; however, a considerable amount of writing has been done in the general area of innovation and diffusion, and also in the area of adoption of new educational practices. The literature reviewed will be summarized in two sections, namely: (1) closely related studies and (2) studies in the general problem area. The first category will contain the results of several studies that dealt with belief systems and variables other than innovation. The second section will treat two major compilations dealing with general innovation and two compilations dealing with educational innovation.

Review of Closely Related Studies

Very little study has been devoted specifically to the study of belief systems as they relate to innovative behavior. Considerable study, however, has been devoted to the study of belief systems and variables such as concept formation, organizational structure of an institution, the

formation of new belief systems, the formation of new perceptual systems, and problem solving.

The most frequently used instrument in innovation studies that dealt with belief systems was the Rokeach Dogmatism Scale. The Dogmatism Scale Form E consisted of forty statements to which subjects responded on the basis of six categories ranging from a minus three (I disagree very much) to a plus three (I agree very much).¹ Various researchers have used all or part of the items in Form E.

Innovation Studies that Dealt with Belief Systems

Rogers² discussed the personality correlates concerning the adoption of technological practices. He reported the results of a study of twenty-three farm operators residing in a Central Iowa rural community. The ten items in the Dogmatism Scale that correlated most highly with the total dogmatism scores were used to assess the degree of dogmatism. The correlation between dogmatism and the adoption scale reported was $-.15$. This was in the expected direction but was not significant. The results may have been conditioned by the small size of the sample or by the nature of the innovations considered for adoption.

¹Milton Rokeach, The Open and Closed Mind, (New York: Basic Books, Inc., 1960), pp. 73-80.

²Everett M. Rogers, "Personality Correlates of the Adoption of Technological Practices," Rural Sociology, XX (1957), pp. 267-268.



In the current study a broad range of practices were used to create the innovativeness scale, or adoption index, and a large number of individual subjects were involved. Thus, any association found during the current investigation might be expected to differ considerably from the results obtained in the research cited above.

Further research directed at correlating dogmatism scores with innovative behavior was not conducted until quite recently. Jamias³ completed a doctoral study of dogmatism, tradition, and general innovativeness among farmers in eight townships in Lapeer County, Michigan. One of the hypotheses tested was that dogmatic farm operators would have a lower rate of adoption of new practices than the less dogmatic farmers. The measurement of dogmatism was by the twenty item short form of the Rokeach Dogmatism Index developed by Troidahl and Powell.⁴ General innovativeness was measured by the number of practices a person had adopted at a given point in time. A Pearson product-moment correlation of $-.235$ was found to be significant at the $.01$ level.

³Juan F. Jamias, "The Effects of Belief System Styles on the Communication and Adoption of Farm Practices," (unpublished Ph.D. dissertation, Michigan State University, 1964).

⁴Verling C. Troidahl and Fredric A. Powell, "A Short-Form Dogmatism Scale for Use in Field Studies," (unpublished manuscript, Department of Communication, Michigan State University, 1964).



The correlation was in the expected direction indicating that those persons with higher adoption scores would tend to have more open belief systems.

Studies that Dealt with Belief Systems

Conway, in a study of decision making in small groups and the personality variables of the group members, conceptualized the decision making group as a small problem solving group. Three classifications of groups were formed based on the scores obtained on the Rokeach Dogmatism Scale: (1) predominantly open group, (2) predominantly closed group, and (3) equally mixed group. He stated "that group problem-solving was, in some respects, a function of the belief systems of the group members."⁵ In addition to this finding he suggested that groups of closed minded teachers, when placed in new situations requiring the adoption of new practices, would resist changes in their belief systems. They would, in effect, resist changes in their common everyday methods of instruction.

The foregoing findings suggested the importance that belief systems of teachers in a school district played in that school district's rate of adoption of new practices.

⁵James A. Conway, "Personality Variables and Problem-Solving Groups," Administrator's Notebook, XII (September, 1963).

An implication drawn by Conway⁶ was that a knowledge of the belief systems of a decision making group would be a first step toward working effectively with that group.

Halpin and Croft, beginning with the observation that the organizational climate of school districts differ, devised an instrument to assess the differences. In testing their instrument they found that schools could be ranked by their scores to characterize six climates ranging from open to closed. They stated that "the concept of openness versus closedness in Organizational Climates is directly related to similar concepts about the openness or closedness of the individual's personality."⁷

The current study will provide data on the individual belief structure along the open to closed continuum of educators in school districts. This may provide evidence that will be helpful in confirming the findings of the Halpin and Croft study.

Rokeach⁸ made numerous references to the relationship that may exist between change processes in individuals or groups and the individual belief systems. He indicated that

⁶Ibid.

⁷Andrew W. Halpin and Don B. Croft, "The Organizational Climate of Schools," Administrator's Notebook, XI (March, 1963), p. 4.

⁸Rokeach, The Open and Closed Mind, p. 10.



one of the principal differences which might be distinguished by the open-closed continuum was the difference between change and resistance to change in behavior. While change was frequently discussed using terms like "flexibility," "independence," and "open-mindedness," resistance to change was usually discussed with terms such as "conformity," "closed-mindedness," and "tolerance." These terms implied a positive regard or evaluation for change and a negative evaluation of resistance to change. By using the open-closed belief system as the descriptive term for change or resistance to change it should be possible to identify and to discuss differences in degree of both change and resistance to change. Also, it should be possible to examine relationships between change or resistance to change with respect to particular belief changes, and, more importantly, with respect to belief system changes.

In drawing distinctions between open belief systems and dogmatic belief systems, Rokeach⁹ suggests that the dogmatic mind is extremely resistant to change. This may be true because the dogmatic person has the same need to know that the open person has, thus his system must narrow and distort reality in order to preserve itself. In being resistant to change, the system removes anxiety and convinces

⁹Ibid., p. 68.



itself that it has rejected change by knowing, evaluating, or studying the change. The school district which has a staff that is made up of a larger proportion of individuals with closed belief systems may screen out new instructional practices in order to preserve the belief system of the individual.

Another way of looking at the belief system as related to change was suggested by Rokeach¹⁰ in discussion of dogmatic thinking versus rigid thinking. In drawing this distinction he indicated that rigidity dealt first with the change of a single belief, whereas dogmatic thinking referred to the resistance to change of belief systems. The result of an experiment conducted to test this conception provided support for it.

Rokeach concluded that the findings of several different studies indicated that the Dogmatism Scale measured reasonably well two related ways of cognitive functioning (open or closed belief systems). Each way could be discussed using terms such as those indicated previously in this chapter.

The review of the literature indicated that in the past, numerous personality variables had been correlated with innovation. Some of these variables may have included

¹⁰Ibid., p. 183.



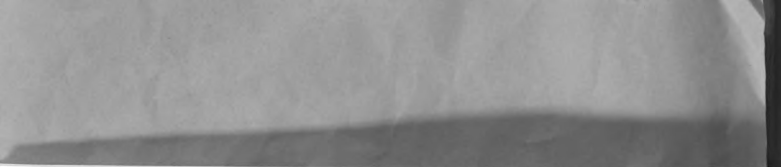
aspects of the open-closed belief system. One such study, which was the most successful of those reviewed, was that by Carter and Williams¹¹ in England. They pooled a number of separate variables related to innovativeness in business firms. The scores accounted for 64.0 per cent of the variation in innovativeness scores.

Another study relating other variables to open-closed belief systems was conducted by Hough.¹² He investigated the effects of dogmatism on the learning of human relations skills. While the results were not conclusive, he reported that people with closed belief systems were less likely to make gains in human relations skills.

Again the above study suggested the relationship that might exist between the rate of intake of new information into the structure of the belief system and the extent to which the system was open or closed. Hough pointed out, as did Rokeach, that one of the functions of the belief system might be to distort or screen out potentially available stimuli. By so doing, the system would be protected and the need to know satisfied. The foregoing findings

¹¹C. F. Carter and B. R. Williams, "The Characteristics of Technically Progressive Firms," Journal of Industrial Economics, VII (1959), pp. 87-104.

¹²John B. Hough, "The Dogmatism Factor in Human Relations Training of Pre-Service Teachers," Paper presented at the annual meeting of the American Educational Research Association, (Chicago, Illinois, February, 1965).



seemed to indicate that the dogmatic person faced with the adoption of a new practice would resist change.

Review of Studies of General Innovation

Several compilations of studies dealing with innovation are available. Most of the studies of innovation have been conducted by rural sociologists. More recently, however, several other disciplines have shown concern for research in the area. One such discipline was represented by the work of Miles¹³ and Ross.¹⁴ The several comprehensive works mentioned here are discussed in the following sections.

General Innovation

Rogers has stated that the prediction of innovative behavior is valuable theoretically and will produce, when possible, practical consequences. The principal tool for discovering relationships has been multiple correlation. In past studies by rural sociologists on prediction of innovativeness, five types of variables were most common. Rogers stated that the variables were: "individual attitudes, nature of the business operation, social structure, group

¹³Matthew B. Miles, Innovation in Education (New York: Bureau of Publications, Teachers College, Columbia University, 1964), p. 660.

¹⁴Donald H. Ross, Administration for Adaptability, Revised Edition, (New York: Metropolitan School Study Council, 1958), p. 19.



relationships of the respondent, and communication behavior."¹⁵ He cautioned that comparison among these studies was difficult and uncertain due to the use of differing definitions and measures. The amount of variance in innovativeness explained by variables used by Rogers ranged from seventeen per cent to fifty-six per cent.

The literature reflected a need for studies that would help in the prediction of the adoption of new practices in the future. In education, few if any prediction studies have been conducted. The review of literature indicated that initially, evidence needed to be collected that would permit the selection of variables with relatively high association with innovativeness to be used in predicting the future course of new practices.

An alternate approach to prediction, the configurational approach, was suggested by Rogers.¹⁶ This method of analysis divided the subjects into homogeneous sub groups. Each sub group was analyzed as an independent unit. This method was designed to predict on the basis of rather imprecise measures. It had particular merit with relatively small numbers of subjects where each variable could be traced for each subject.

¹⁵Everett M. Rogers, Diffusion of Innovations (New York: The Free Press of Glencoe, 1962), p. 285.

¹⁶Ibid., p. 292.





The above method might have utility for the analysis of the adoption of new practices within a single school district. When trying to predict from one district to another, the problems of keeping track of the behavior of each adopter would be great.

Rogers made several recommendations for future prediction efforts. He suggested that the independent variables for the prediction should be selected on theoretical grounds. The variables used in this study were selected on such grounds. The suggestion also was made that efforts should be directed toward explaining higher percentages of the variance in innovativeness. This might be accomplished either by the addition of variables or by more accurate measures of significant variables. Rogers stated, "Future research might include independent variables which measure how individuals perceive the characteristics of an innovation, as well as variables measuring the individuals' social characteristics, attitudes, and group relationships."¹⁷ The variable "open-closed belief systems" has been shown by Rokeach¹⁸ to measure the extent to which individuals are able to perceive the characteristics of a new problem, change, or situation.

Rokeach demonstrated that individuals with open and closed belief systems did not differ in their ability to

¹⁷Ibid., p. 296.

¹⁸Rokeach, The Open and Closed Mind, p. 267.



perceptually analyze a new problem, but they did differ with respect to incorporating the new perceptual information into their belief systems. Perceptual synthesis occurred more rapidly for open belief system individuals than for closed belief system individuals.

The Diffusion File compiled by Rogers and others at Michigan State University was reviewed. It was a most useful source for many studies of innovation. Studies in the file which had a bearing on this project are presented where appropriate in this chapter.

Rogers¹⁹ has suggested several cautions concerning the application of the diffusion findings of other disciplinary traditions to the organized educational setting. He indicated that many adoption decisions were not individual matters in education. In order to take the above factor into account, two procedures were used in the study. First, the unit of adoption was the school district. Second, the items in the adoption scale used to create innovativeness scores were made up of practices that could be adopted by entire units as well as individuals.

While the innovation process had been previously conceptualized as consisting of five identifiable steps,

¹⁹Everett M. Rogers, Innovations: Research Design and Field Studies, Paper presented at the Conference on Novel Strategies and Tactics for Field Studies Involving New Educational Media, May 10-12, 1965 (Columbus, Ohio: The Conference, 1965), p. 4.



Rogers²⁰ indicated that he preferred the following three:

(1) knowledge, (2) attitude change, and (3) behavioral change. The degree to which the individual of the collective group of individuals was open to information could be a significant factor in the course of the adoption or rejection of an innovation.

Rogers defined innovativeness as "the degree to which an individual is relatively earlier than his peers in a social system in adopting new ideas."²¹ He also indicated that innovative behavior tended to reoccur for different innovations. Thus the need to predict particular social systems or individuals who would be innovative could not be met by measures of innovativeness unless the past behavior with respect to particular innovations was known. If other variables could account for innovative behavior, then they could be put to practical use in the selection of initial innovative elements of a given social system.

Rogers suggested that personality variables of individual members of the school staff might account for or explain innovativeness. He felt that this would be particularly true with respect to the adoption of new practices, the adoption of which did not represent forced compliance.

²⁰Ibid., p. 5.

²¹Ibid., p. 7.



Innovation in Education

Two excellent compilations of studies dealing with innovation in education by Ross and by Miles are available. These works facilitated the location of material relevant to the current study. Where necessary, original works were obtained and reviewed for accuracy and completeness as presented in the compilations.

Ross²² drew together the results of some 150 studies of the adaptability of schools. Most significant for the current study were the findings that size of school district and educational expenditures were positively correlated with adaptability, or the higher rate of adoption of new practices. Ross stated, "While innovations may emerge anywhere on the scale of expenditure in a state which varies in expenditure level from community to community, we would expect to find a proportionately greater number in communities of higher expenditure."²³ In support of this contention Ross cited a number of studies which reported correlations ranging from .42 to .71 when the variables were "number of practices adopted" and "financial expenditure."²⁴

²²Ross, Administration for Adaptability, p. 19.

²³Ibid., p. 363.

²⁴Ibid., p. 385.



Of particular importance to this study was the report by Ross of the Adler study.²⁵ Adler's study provided the basis for the development of the check on the constructed innovativeness scores used and the use of school district size as a control variable in the financial cost factors.

Adler²⁶ indicated that his study had four purposes: (1) to find the national patterns of diffusion for selected educational practices, (2) to set this investigation in the light of previously completed studies of adaptability, (3) to contrast the data found from previous study to existing activities in the Associated Public School Systems, and (4) to gain new information about the process of diffusion.

The methodology used by Adler held merit for adapted use in the current study. The instrument he developed to determine the adoption of new educational practices was the Associated Public School Systems 1955 Time Scale.²⁷ This instrument was an updating of the "Time Scale" developed by Mort and Pierce²⁸ in 1947. It consisted of thirty-three

²⁵Ibid., pp. 108, 183, and 567.

²⁶David S. Adler, "An Analysis of Quality in the Associated Public School Systems Through a Study of the Patterns of Diffusion of Selected Educational Practices," (unpublished Ed. D. project, New York: Teachers College, Columbia University, 1955), p. 8.

²⁷Ibid., Appendix.

²⁸Paul R. Mort and Truman M. Pierce, "A Time Scale for Measuring the Adaptability of School Systems," (New York: Metropolitan School Study Council, 1947).



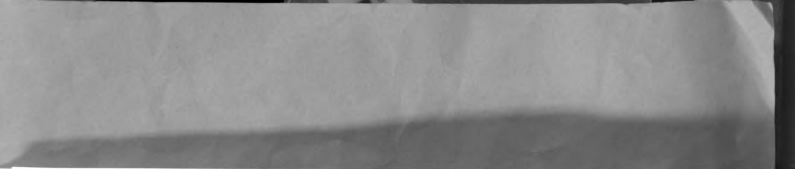
practices drawn from a large number of suggested practices. The criteria for drawing the items according to Adler were: (1) a definite educational value which would contribute to the quality of an educational program and (2) a rate of diffusion sufficiently great to insure a total number of introductions in excess of 3.0 per cent of the participating schools.²⁹

Based on the patterns of diffusion of these practices in the Associated Public School Systems, Adler assigned point values for each reported introduction of a practice. The conclusions reached by Adler as a result of the analysis of the data collected were as follows: (1) larger school systems tended to score higher on the scale, (2) regional differences in the "Time Scale" scores were insignificant, and (3) there were wide differences within school districts after the initial introduction of a practice in its spread throughout the school system.

The finding that size of school district was related to the innovation scores was used as a basis for adding this variable to the cost factors controlled in the current study. In Chapter IV the results of the analysis of the cost factor variables are reported.

Throughout the review of the diffusion studies compiled by Ross, the reader should be aware that the studies

²⁹ Adler, "An Analysis of Quality in the Associated Public School Systems Through a Study of the Patterns of Diffusion of Selected Educational Practices," p. 7.



conducted at Columbia for the most part were more interested in the quality of education than the patterns of diffusion of various educational practices. The studies, while helpful in indicating relevant variables, did not provide any comprehensive pattern results. The only exception to this is indicated in the next compilation to be reviewed.

Miles, in a compilation of works on innovation, drew together a number of interesting case studies, research theory, and writing describing innovation in the American educational system. Most significant for the current study was one of his closing comments. He stated, "This book was designed to stimulate more inquiry into the nature of educational innovation, and to widen the range of coherent possibilities for innovative practice."³⁰ The book did just this. It served to draw a framework around the entire study of innovation.

Specifically, Miles³¹ pointed up the patterns of diffusion found by Mort in the 1930's. The period for complete adoption of an innovation was about 100 years. He also pointed out that present rates were more rapid than those found by Mort, though no study comparable to that done by Mort had been conducted on a national scale.

³⁰Miles, Innovation in Education, p. 660.

³¹Ibid., p. 649.



Miles indicated that "further attention to the innovative personality is undoubtedly desirable."³² The interpretation that he gave for various factors of personality which various studies had found related to innovativeness suggested that the personality variables came to have the most decisive force when the innovation being studied was particularly susceptible to individual adoption. The studies compiled by Miles and on which he based the foregoing position may have resulted in these conclusions because they were biased toward large systems.

The staff of the Michigan Department of Public Instruction surveyed the patterns of innovation in Michigan Schools. From 1958 to 1962 each school district was asked to supply data dealing with their adoption of seventeen practices at the elementary and secondary levels. The summary of the Five Year Survey graphed the statewide patterns of adoption for nine different practices. In the introduction to the report, State Superintendent Lynn M. Bartlett stated that the study "is illustrative only of the magnitude of change underway in Michigan elementary and secondary schools."³³

³²Ibid., p. 642.

³³Five Years of Change in the Public Elementary and Secondary Schools in Michigan (Lansing, Michigan: The Department of Public Instruction, 1964), p. 1.

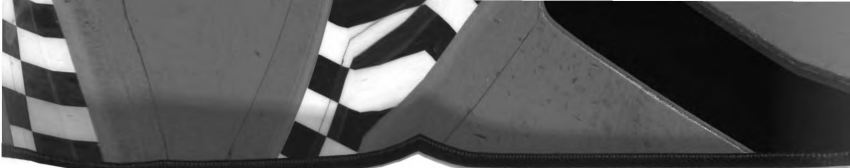


Summary

Studies which offer information, data, or reported results bearing on the design of this study have been reviewed in this chapter. The review indicated that one of the significant variables in the innovation process was the personality variable of open or closed belief systems as defined by Rokeach.

In addition, the review of studies in the areas of general innovation and educational innovation indicated that among the significant factors associated with innovation were those of expenditures in and size of school districts.

The review of literature has served to provide the disciplinary framework in which this study was designed and carried out.



CHAPTER III

PROCEDURES

The objectives of this study will be examined in three ways, namely: (1) by compilation of tabular data on adoption, (2) by analysis of the Dogmatism Scale, and (3) by statistical tests of the hypotheses.

The parameters of the scores on "open-closed belief system" within the group of school districts in which subjects were tested and their association with the scores on "rate of adoption of new practices" are tested against the hypotheses using Fisher's exact probability test, chi-square, and the Contingency Coefficient. The school systems which are classed as innovative, those which are classed as non-innovative, the administrators that have open belief systems, and the administrators that have closed belief systems will be cast into a suitable table for the chi-square test. The same procedure will be used to examine the data gathered from the teachers.

There will be a systematic examination of the data gathered by giving the Dogmatism Scale, a measure of open-closed belief systems. The information will be arranged

into a table to show the frequency of distribution of the subjects' scores by category. The examination of this table will provide information for the testing of the hypotheses. Based on this table, the nature of the distribution of the dogmatism scores for administrators and teachers will be determined.

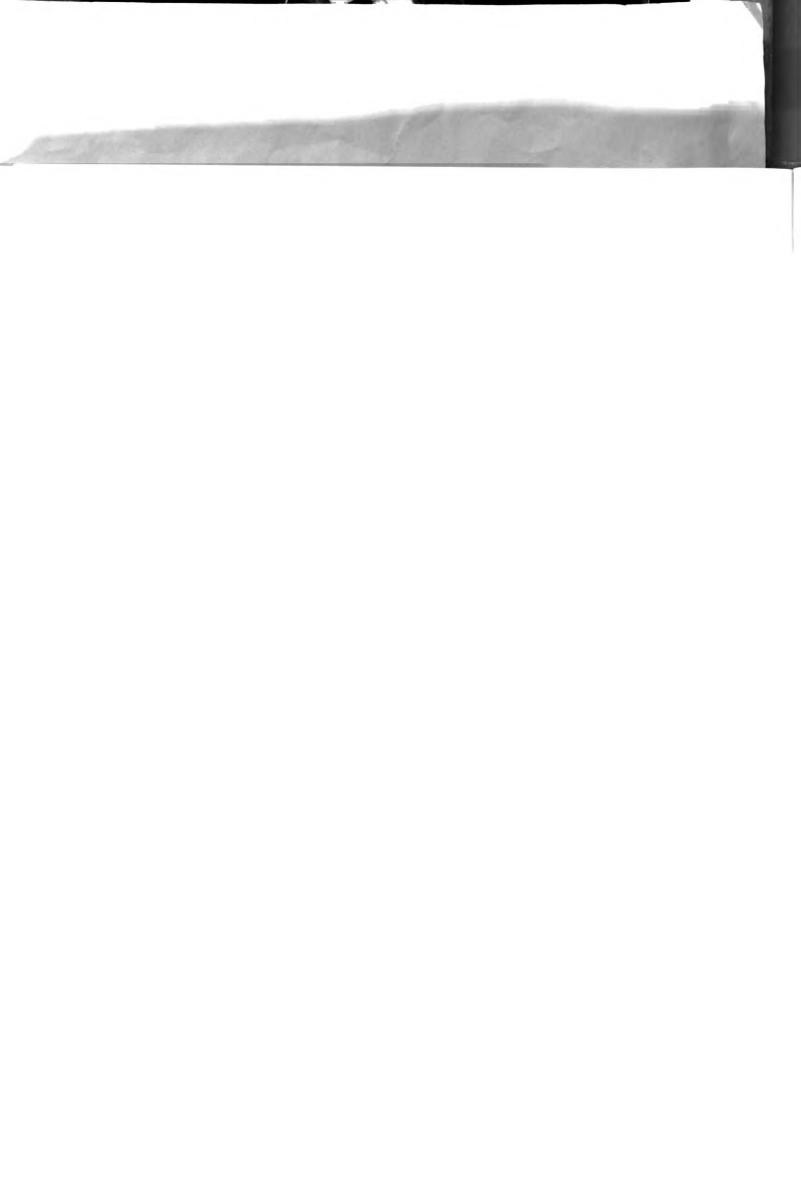
Selection of Schools

The minimum number of school districts needed to allow for control on the cost factor variable was eight. The use of the cost factor control indicated a need for high and low cost districts in each of the innovative and non-innovative categories. The use of two high cost and two low cost districts also permitted greater geographical distribution of the districts.

The eight school districts were selected systematically, using the data reported to the Michigan Department of Public Instruction in the Five Year Survey of Progress in Michigan.¹ Superintendents of the eight school districts selected agreed that the administrators and teachers would participate in the study.

Information taken from IBM cards punched to summarize the Five Year Survey of Progress in Michigan Schools consisted

¹Five Years of Change in the Public Elementary and Secondary Schools in Michigan (Lansing, Michigan: The Department of Public Instruction, 1964).



Of check and no-check responses indicating the presence or absence of seventeen practices at the elementary and secondary levels in each school in each school district in Michigan. A copy of the form used to collect the data appears in the Appendix, Exhibit 1. The responses were recorded for each school year beginning in 1957-58 and continuing through 1962-63.

An innovativeness scale was constructed for each school district using the above data. Since the practices included in the Five Year Survey of Progress in Michigan Schools were dissimilar and some were mutually exclusive, (For example: Departmental vs. Core program) the weighting system used in the study gave equal weight to each practice. Equal weight was given for each year a practice had been adopted in the district during the period of time covered by the survey. The scores were then totaled. The score range had a maximum possible value of eighty-five (seventeen practices times five years) for any one school.

The time period covered by the Five Year Survey of Progress in Michigan Schools was one in which many new practices were tried out by school districts. Thus it was desirable to use more than one school year to study instructional change. The initial summary of the school district adoption scores ranked the school districts on the total number of practices adopted in the district. Since the design of the survey made it possible for a school district

with many individual schools to obtain a higher score simply by virtue of its size than a district with only a few individual schools, each total score for a district was divided by the number of schools reporting in the district. This procedure equalized the scoring potential of districts with different numbers of school units. The average for each district was placed in rank order. In the resulting list, school districts were ranked from high constructed innovative scores to low constructed innovative scores. The range was from a score of 0 to 56. Six hundred and four (604) school districts were ranked from innovative to non-innovative. A frequency polygon for the constructed innovation scores appears as Exhibit 5 in the Appendix.

Individual school districts for study were selected from this list by identifying those districts with high and low cost factors in the extreme ends of the distribution of innovativeness scores. Since previous studies of educational adaptation had shown a relationship between the amount of adoption and size and expenditures, these variables were combined into a cost factor control. Data on the four cost factors were obtained from the Department of Public Instruction for the 1962-63 school year.

The four innovative school districts were selected from the upper one per cent of all school districts. They were selected by choosing the two districts which were as high as possible on the rank ordering on innovation and had

the highest possible combination for the following cost indicators: (1) size, (2) effort, (3) expenditure, and (4) ability.

The two low cost factor districts were chosen by selecting the two highest possible districts on innovation with the lowest possible combination of cost factors. The selected non-innovative schools came from the lower one-fifth of the innovative scores distribution. The schools were selected by the same method used for selecting the innovative districts. Using the cost factors criterion, the two lowest cost districts and the two highest cost districts were chosen.

All school districts selected by the above procedure were contacted by the researcher through the letter of introduction from the Department of Public Instruction which appears in the Appendix, Exhibit 2. The administrators of schools selected by the above procedure agreed to participate in the study.

In Chapter IV the selected group of school districts will be carefully described in terms of the following characteristics: (1) length of administrators' tenure, (2) educational costs factors, (3) regional geographic location, and (4) population density.

Instrumentation

In each selected school district structured interviews were conducted to determine the validity of data reported in the Five Year Survey of Progress in Michigan Schools.



The interviews were used to gather demographic data, and to glean descriptive information relative to the process of innovation within the school district. The interview format used appears in the Appendix, Exhibit 3.

As a cross check on the categorization of the schools as innovative or non-innovative, the innovativeness scale developed by Adler² in the 1955 Associated Public School Systems Study was applied to the schools in the current study. The thirty-three items in the Associated Public School Systems 1955 Time Scale were maintained intact and thirteen additional practices were added to the scale. The new practices were representative of current changes taking place in schools and served to update the instrument. They were drawn from a recent Association for Supervision and Curriculum Development publication³ and from other practices currently being adopted in some Michigan schools.

The data for the revised Associated Public School Systems 1955 Time Scale were collected during structured interviews with the superintendents in each school district. In two cases, one innovative and one non-innovative, the

²David S. Adler, An Analysis of Quality in the Associated Public School Systems Through a Study of the Patterns of Diffusion of Selected Educational Practices (Unpublished Ed. D. project, Teachers College, Columbia University, 1955), p. 7.

³Association for Supervision and Curriculum Development, NEA, Using Current Curriculum Developments, A Report of ASCD's Commission on Current Curriculum Developments (Washington, D.C.: Association for Supervision and Curriculum Development, NEA, 1963).



superintendent designated the person who had completed the Five Year Survey of Progress in Michigan Schools forms as the interviewee. All interviews were recorded on tape and later transcribed for purposes of analysis. The responses obtained in the interviews to the 1955 Time Scale were scored in accord with the procedures originally utilized with the instrument. Revised portions were scored on the basis of the data reported within the current study.

The instrument for measuring the extent of open or closed belief systems was the Rokeach Dogmatism Scale. A short form of this instrument consisting of twenty items was used. The short form was developed by Troidahl and Powell⁴ to facilitate the use of the scale in field studies. The Rokeach Form E of this instrument had a reliability of .84 in two applications by Troidahl and Powell. They reported a reliability for the twenty item form of .79.

"The primary purpose of this scale is to measure individual differences in openness or closedness of belief systems."⁵ The scale was designed in such a way as to avoid assessing the content of beliefs. Its aim was to measure the formal and structured aspects of all ideological positions.

⁴Verling C. Troidahl and Fredric A. Powell, "A Short-Form Dogmatism Scale for Use in Field Studies" (unpublished manuscript, Department of Communication, Michigan State University, 1964), p. 13.

⁵Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960), p. 71.



A copy of the twenty item form as used in this study appears in the Appendix, Exhibit 4.

The scoring procedure for the instrument was developed by Rokeach.⁶ He added a constant of four to each item score, thus producing a scale ranging from one to seven. The individual items were summed to produce the total score for differentiating individuals. A high score indicated a relatively dogmatic personality and a low score a relatively open personality.

The data on open and closed belief systems were collected by an envelope system. Each school district received envelopes marked "teacher form" and "administrator form" containing the Dogmatism Scale. The envelopes carried the necessary instructions for self-administration of the instrument. A separate direction sheet was supplied to each person in the school district responsible for the collection of the envelopes and their return to East Lansing. A sample of the envelopes and direction sheets have been included in the Appendix, Exhibits 7 and 8. Response rates were high: of 53 possible administrators, 51 replied; of 806 possible teachers, 757 responded. Two teacher forms returned were not complete. A total of 755 usable teacher responses were obtained.

Reliability estimates for administration of the Dogmatism Scale were established by drawing a ten per cent

⁶Ibid., p. 88.



random sample of the 755 teacher forms and applying split-half reliability techniques to the sample. A reliability of .63 was found. A reliability of .66 was established for the administrators by applying the split-half reliability technique to all administrator forms. A reliability of .64 resulted from an analysis of both the teacher sample and the administrator sample.

Statistical Hypotheses

The following hypotheses, in accord with the operational definitions, were formulated for testing purposes.

- H_{01} There is no difference between the proportion of administrators having open belief systems in innovative school districts and the proportion of administrators having open belief systems in non-innovative school districts.
- H_{02} There is no difference between the proportion of teachers having open belief systems in innovative school districts and the proportion of teachers having open belief systems in non-innovative school districts.
- H_1 The proportion of administrators having open belief systems in innovative school districts is greater than the proportion of administrators having open belief systems in non-innovative school districts.

- H₂ The proportion of teachers having open belief systems in innovative school districts is greater than the proportion of teachers having open belief systems in non-innovative school districts.

In addition to the above hypotheses the following questions were answered using descriptive statistics:

1. What is the distribution of scores obtained on a measure of open-closed belief systems for administrators and for teachers?
2. How does the "adoption rate" for the school districts in this study compare with the "adoption rate" graphed in the 1955 Associated Public School Systems Study?
3. What are the characteristics of the school districts in this study, which, when described, might permit identification of like school districts in which to replicate the study?

Analysis

The analysis performed to test the null hypotheses presented above was chi-square and Fisher's exact probability method. Appropriate methods taken from Edwards,⁷ Hayes,⁸ and

⁷Allen L. Edwards, Statistical Methods for the Behavioral Sciences (New York: Holt, Rinehart and Winston, 1962), pp. 366-398.

⁸William L. Hayes, Statistics for Psychologists (New York: Holt, Rinehart, and Winston, 1963).

Siegel⁹ were used. Cost factors were used as controls.

In addition to the above analysis, correlation between each of the cost factors used and the constructed innovation scores were computed for all Michigan school districts on which data were available. Data for each factor were supplied by the Michigan Department of Public Instruction.

The data in this study were assumed to be of the following level of measurement:

Innovative - Non-innovative--Nominal Data

Open-closed belief systems--Ordinal Data

The distribution of data used to classify schools into the two categories, innovative-non-innovative, was skewed toward non-innovativeness. The distribution of data used to establish the open-closed categories was normal.

Summary

In this chapter the design, methodology, and procedures of the current study have been set forth. The selection procedures for the school districts used in the study were not random. The districts were selected on pre-existing data. The instrumentation used consisted of a short form of the Rokeach Dogmatism Scale, the Associated Public Schools Systems 1955 Time Scale (with current revisions), and structured interviews. The reliability of the short form of the

⁹Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1956), pp. 104-111.



Rokeach Dogmatism Scale was established between .63 and .66. The null hypotheses presented, along with the alternative hypotheses and additional questions, set the objectives for the analysis of the data collected. The analysis will reflect the results of appropriate statistical tests, chi-square, and descriptive statistics.

Chapter IV is organized to present the results in two sections: (1) the summary of data and (2) rejection or failure to reject the hypotheses. The second section contains the interpretation of the results.



CHAPTER IV

ANALYSIS OF RESULTS

In the first section of this chapter an attempt is made to analyze the data collected concerning belief systems of teachers and administrators in selected innovative and non-innovative school districts in Michigan. The findings will parallel the hypotheses and questions specified in Chapter I. These were: (1) testing of the hypotheses of the study, (2) relating the nature of the data reflecting the adoption patterns in the school districts studied, (3) describing the distribution of dogmatism scores in the population under study, and (4) describing the characteristics of the school districts.

The second section of this chapter contains the interpretation of results. It also contains suggestions for improving the research instruments and methodology in future studies.

Summary and Analysis of the Data

The basis for assessing the extent of the relationship between belief systems and innovation rate in school districts is derived from analysis of the data. It provides

initial basis for designing further research to establish the predictive value of the Dogmatism Scale in estimating the rate of innovation.

Hypothesis Testing

The first hypothesis stated that a higher proportion of administrators in innovative school districts would be open minded than in non-innovative school districts.

H_{01} There is no difference between the proportion of administrators having open belief systems in innovative school districts and the proportion of administrators having open belief systems in non-innovative school districts.

H_1 The proportion of administrators having open belief systems in innovative school districts is greater than the proportion of administrators having open belief systems in non-innovative school districts.

The data collected by administering the Dogmatism Scale to fifty-one administrators showed a range of scores from twenty-eight to ninety-seven. The mean score for all administrators was 59.29. The standard deviation, 14.25, was obtained. Based on this mean and standard deviation and under the operational definition of open and closed belief system given in Chapter I, the frequency of individu-

als with open or closed belief systems in innovative and non-innovative schools was determined. Tabulation of the frequencies appears in Table 1.

TABLE 1.--Distribution of administrators with open and closed belief systems in innovative and non-innovative schools

Belief Systems	Innovative	Non-Innovative
Open	6	3
Closed	4	1

The null hypothesis was tested with Fisher's exact probability test following procedures specified by Siegel.¹ The hypothesis could not be rejected at the $\alpha=.05$ level of significance. Fisher's exact probability test was used in preference to chi-square because of the small frequencies.

The second hypothesis predicted that a higher proportion of teachers in innovative school districts would have open belief systems than in non-innovative school districts.

H_{02} There is no difference between the proportion of teachers having open belief systems in innovative school districts and the proportion of

¹Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw Hill Book Co., 1956), pp. 96-104.

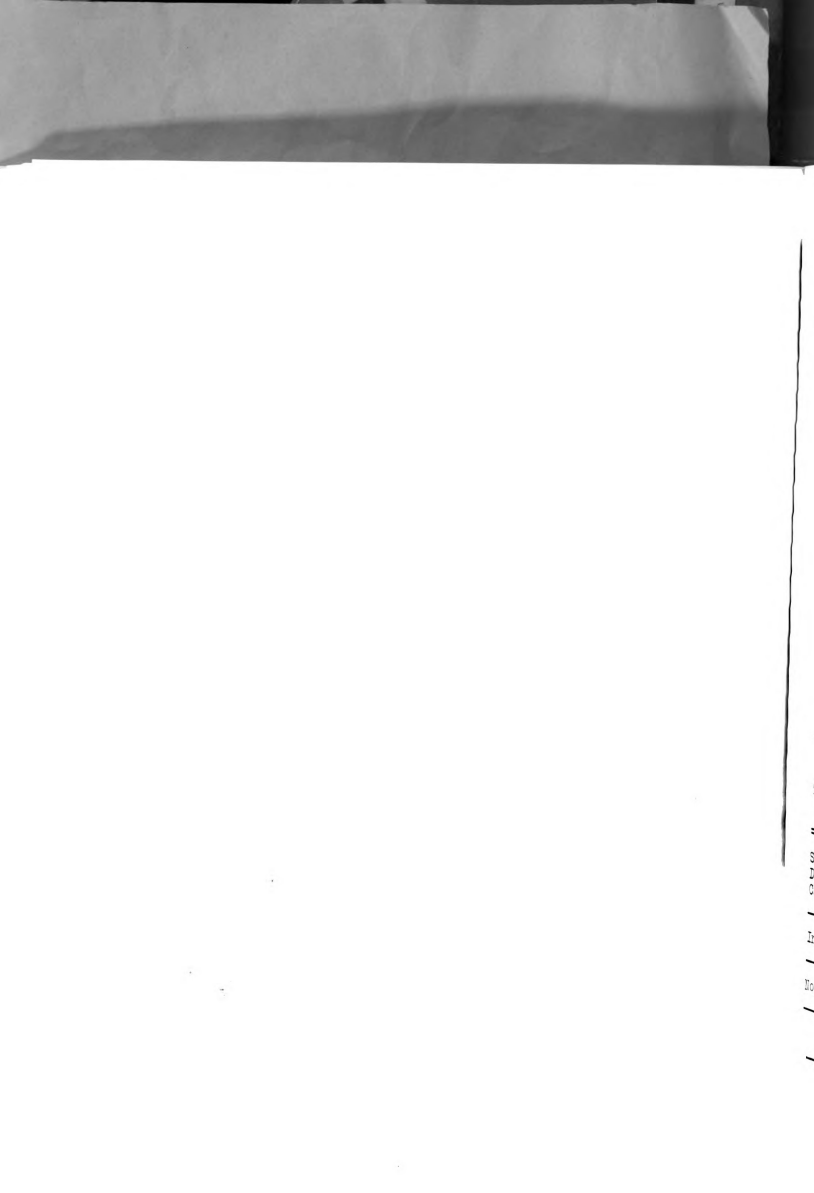
teachers having open belief systems in non-innovative school districts.

- H₂ The proportion of teachers having open belief systems in innovative school districts is greater than the proportion of teachers having open belief systems in non-innovative school districts.

The data collected by the Dogmatism Scale for 755 teachers showed a range of scores from 25 to 107. The mean score for all teachers was 64.23. The standard deviation was 14.19. Based on this mean and standard deviation, and under the operational definition of open and closed belief system given in Chapter I, the frequency of individuals with open or closed belief systems in innovative and non-innovative school districts was determined. Table 2 shows the frequencies.

TABLE 2.--Distribution of teachers with open and closed belief systems in innovative and non-innovative schools

Belief Systems	Innovative	Non-Innovative
Open	92	71
Closed	120	120



The null hypothesis was tested with the chi-square test for two independent samples arranged in a 2 X 2 table following procedures specified by Siegel.² The chi-square obtained was 8.42. At the specified level of significance, $\alpha=.05$, a chi-square equal to or greater than 3.84 with one degree of freedom was needed to reject the null hypothesis. Since the obtained value was greater than that needed for rejection, the hypothesis was rejected.

By observing the arrangement of data in Table 3, it may be seen that the discrepancy from the expected frequencies was in the predicted direction. There was a greater proportion of teachers with open belief systems in innovative schools than in non-innovative schools. Expressed in percentages, the data were as shown in Table 3. The percentages were based on the entire population of teachers.

TABLE 3.--Percentage of teachers classed as open or closed in innovative or non-innovative school districts

School District Category	Per Cent Open	Per. Cent Closed
Innovative	18.0	11.0
Non-Innovative	14.0	20.0

²Ibid., p. 107.



Sixty-eight per cent of the subjects were in the mixed middle group. This was expected, due to the use of the first standard deviation as the basis for classifying the open and closed belief system groups.

The application of the contingency coefficient to the 2 X 2 chi-square table giving the proportion of open and closed belief system individuals in innovative and non-innovative school districts showed a positive coefficient of .182. Statistical research had shown that the contingency coefficient was limited to a maximum value of approximately .7 in the case of a 2 X 2 table. Thus, the result obtained with the foregoing data showed more than a slight degree of association between innovation and the number of individuals having open belief systems.

Adoption Patterns in the School Districts Studied

Original selection procedures discussed in Chapter III under the heading "Selection of Schools," indicated that the original selection categorized the schools as innovative or non-innovative. This classification was based on seventeen practices surveyed by the Michigan Department of Public Instruction. The validity of the classification on the above basis was categorized under the structured interviews and the Associated Public School Systems 1955 Time Scale.



Interview Data

The structured interviews tended to confirm the classification system. The interview document is included in the Appendix, Exhibit 3. The responses to the items in the interview outline were obtained by the researcher through direct questioning of the superintendent of schools or the person designated by him as having been responsible for completion of the Five Year Survey of Progress in Michigan Schools. The interviews were recorded on tape and later transcribed for the purpose of analysis. Responses to item one in the interview instrument indicated that in six cases the school districts were still using the practices indicated in the five year survey. In two school districts changes had occurred. One district had discontinued the use of educational television and homogeneous grouping. Another district had changed from a departmentalized program to a core program.

Responses to items two and three in the interview helped to assess advantages or disadvantages attached to the various practices by the school districts. Each school district was able to specify some advantages and disadvantages for each practice being used. The volume of information recorded from the interviewees in the innovative districts was much greater than that recorded from the interviewees in the non-innovative districts with respect to the advantages of various innovations. The number of advantages or disadvantages given for an innovation by administrators in innovative



school districts were more numerous than those given by administrators in non-innovative districts.

Item four questioned the reasoning behind discontinuance of an adopted practice. In the case of educational television the district indicated that the lack of adequate programs and technical difficulties in reception played an important role in discontinuance. However, the administrator indicated some teacher reluctance to use educational television and some parents also objected to its use.

The deletion of homogeneous grouping had come about as a result of community pressure. The administration and teaching staff had felt that the practice was successful in terms of facilitating instruction. In the one innovative district in which a structural change had occurred in the organizational pattern, the district had moved from departmentalization to a core program.

The interview data dealing with the original categorization instrument tended to indicate that the original classification of school districts was valid. The interviews in the schools selected did confirm the existence of a marked difference in the number of practices in the Five Year Survey of Progress in Michigan Schools that were adopted by non-innovative and innovative schools.

of two

Associated Public School Systems 1955 Time Scale Data

The second check on the adaptiveness of the selected districts was the Associated Public School Systems 1955 Time Scale which was explained in Chapters I and II. The instrument was applied at the time of the interview. Data for the thirty-three items used in the original study by Adler are summarized in Table 4.

TABLE 4.--Associated Public School Systems 1955 Time Scale *
data on adoption summary

School District Category	Number of Practices Adopted				Totals
	Experimental	Occasional	Widespread	Not Adopted	
Innovative	3	14	88	27	132
Non- Innovative	4	22	48	58	132

The table shows that widespread usage was made of sixty-six per cent of the possible adoptions by the innovative schools compared with thirty-six per cent by the non-innovative schools. The non-innovative schools failed to adopt forty-three per cent of the practices while the innovative schools failed to adopt twenty per cent of the practices.



Data from the thirteen items added to the original Associated Public School Systems 1955 Time Scale are summarized in Table 5.

TABLE 5.--Summary of data reflecting adoption of the thirteen practices added to the Adler Time Scale

Number of Practices Adopted					
School District Category	Experimental	Occasional	Widespread	Not Adopted	Totals
Innovative	10	3	16	23	52
Non-Innovative	19	0	6	27	52

The data tabulated in Table 5 showed that widespread usage was made of thirty-one per cent of the possible adoptions by the innovative schools compared with eleven per cent by the non-innovative schools. The non-innovative schools failed to make fifty-two per cent of the adoptions while the innovative schools failed to make forty-four per cent of the adoptions.

Dogmatism Scores Distribution

Another major concern to be dealt with in the current study was to examine the characteristics of an educator population with respect to the distribution of dogmatism scores. The segments included were innovative and non-innovative teachers and administrators.



The Distribution in the Total Population

The mean, median, standard deviation, and N for all teachers and all administrators who participated in this study were: mean, 63.92; median, 63.13; and standard deviation, 14.24. The mean and median were nearly identical and fell within the same class interval.

In Table 6 the frequency distribution has been charted for all subjects based on a class interval of seven. For further study of the frequency polygon, a graph has been prepared and is presented as Exhibit 6, in the Appendix. Examination of Table 6 shows a nearly normal distribution. The range is from 107-17. The possible range of scores on the dogmatism scale would be 140-20. Thus, this application did not show any subject to be restricted by the ceiling or floor of the scale.

TABLE 6.--Frequency distribution for scores of all subjects on dogmatism scale

Class Interval	Midpoint	Frequency
107-101	104	5
100-94	97	12
93-87	90	34
86-80	83	54
79-73	76	105
72-66	69	136
65-59	62	172
58-52	55	138
51-45	48	85
44-38	41	38
37-31	34	19
30-24	27	5
23-17	20	1



In Table 7 descriptive data consisting of N's, means, and standard deviations for all segments of the population are presented. By examining the table, differences between the means for teachers and administrators (59.29, 64.23) and for innovative and non-innovative teachers (63.15, 66.49) were observed. Confidence interval estimates are presented for these findings on page 55 under Interpretation of Results.

TABLE 7.--Descriptive statistics for the scores of all segments of the population tested with the Dogmatism Scale

Subject Group	Administrators			Teachers		
	Number	Mean	Standard Deviation	Number	Mean	Standard Deviation
Innovative School Districts	29	59.31	16.33	511	63.15	13.80
Non-Innovative School Districts	22	59.27	11.30	244	66.49	14.75
All School Districts	51	59.29	14.25	755	64.23	14.19

Table 8 summarizes the results of Pearson r correlation runs on the variables "dogmatism" and "age of the subjects." Previous findings have indicated a negative relationship between dogmatism and age in the general population. However, Rokeach found no such relationship among college students.



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TABLE 8.--Summary of correlations between dogmatism and age

School District Category	Administrators	Teachers
Innovative	$r=.17$	$r=.13$
Non-Innovative	$r=.19$	$r=.19$

Descriptive Characteristics of the Selected Schools

For convenience, the individual schools are identified by number. The numbering system permits listing the districts for comparative purposes. Information for this section was drawn from the interview data and from records in the Department of Public Instruction files on the Five Year Survey of Progress in Michigan Schools

Length of Tenure of Administrators

The school systems studied were relatively stable with respect to the time period during which the administrative staff had held tenure in the school districts. In all of the school districts the person or persons who had completed the original Five Year Survey of Progress in Michigan Schools forms was/were still present in the school district.

The following table presents the data on superintendent tenure in each of the school districts. The numbers assigned to each school district do not represent any systematic assignment based on innovativeness.

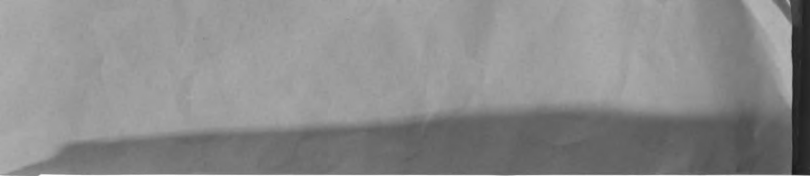


TABLE 9.--School superintendent tenure

School	Length of Tenure
# 1	The superintendent had held office for two years. He had been promoted from within the school district.
# 2	The superintendent had held office for more than seven years.
# 3	The structured interview was conducted with the elementary supervisor and curriculum director and with the high school principal. The superintendent had held office for five years. The interviewees had held office for more than seven years.
# 4	The superintendent had held office for more than seven years.
# 5	" " " " " "
# 6	" " " " " "
# 7	" " " " " "
# 8	" " " " " "

Educational Expenditures and Cost Factors

Table 10 summarizes the range of values for four cost factors used in selecting the innovative and non-innovative districts from the extreme ends of the innovativeness scores.



TABLE 10.--Summary of educational expenditures and cost factors

Cost Factor	Innovative	Non-Innovative
State Equalized Evaluation/Student	\$15,647-6,232	\$14,540-6,724
Student Membership	5783-1100 students	2445-953 students
Current Expenditures Per Pupil	\$531.62-279.50	\$366.64-267.64
Mills for Operation	18.75-12.00	14.36-8.13

As a check on these control measures, Pearson product-moment correlations were computed for all school districts in Michigan between the four cost factors and the school district's innovation score. These correlations are summarized in Table 11. They show a slight positive relationship. No single factor accounts for more than 4.8 per cent of the variance on innovation.



TABLE 11.--Simple correlations between cost factors and innovation scores

	Sev/Res*	Membership	P/c Oper. Exp.**	Op. Millage	Innovation
Sev/Res	1.0	.09	.66	-.09	.12
Member- ship		1.00	.16	.11	.10
P/c Oper. Exp.			1.00	.45	.22
Millage				1.00	.14
Innovation					1.00

Location of the School Districts Studied

The school districts studied represented the regional areas of the state. Two of the innovative schools were located in suburbs of the Detroit metropolitan area, one was a district in a medium sized city, and one was a small rural town consolidated with the surrounding rural area. Two of the non-innovative school districts were located in medium sized rural towns, one was a small city district, and one a small resort town.

*State Equalized Evaluation Per Resident Pupil

**Current Expenditure Per Pupil



Three of the schools in the innovative group and three of the non-innovative schools were located in the southern half of the lower peninsula. Two school districts were located in the northern tip of the lower peninsula.

School District Population

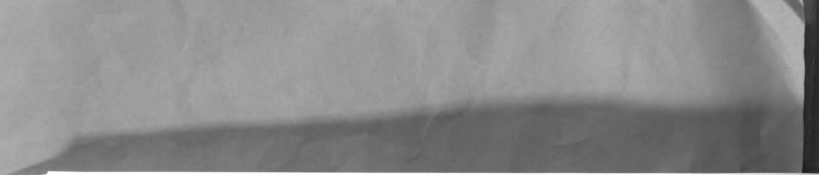
The population range in the innovative category was 76,657 to 617. The range in the non-innovative category was 6,375 to 2,015. The district referred to as "number two," which was located in a community of 76,657, was only one of three school districts in the community and its population represented less than one-third the total population for the city.

Interpretation of Results

In the paragraphs which follow, the results of the data analysis are discussed. The discussion follows the hypotheses and questions raised in Chapter I. The intent here is to present alternative interpretations as well as to indicate those interpretations that seem most productive as the basis for future research.

Interpretation of Hypothesis Testing

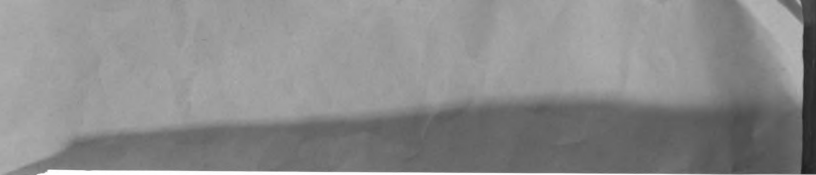
The research hypothesis for administrators was neither supported nor rejected by the data collected. The proportion of open belief system administrators in the school districts studied appeared to be about equal in both innovative and non-innovative districts.



This result may be examined from several different viewpoints. First, the sample of administrators was relatively small. This was largely due to the number and size of the districts studied. Second, examination of the dogmatism scores of administrators showed that they tended to score, as a group, somewhat lower than the teachers. As a result of the small size of the non-innovative administrative group and the tendency for the administrators as a group to score lower on the Dogmatism Scale, differences between administrators in innovative and non-innovative school districts may have been masked. Third, administrators might be open to new adaptation, but might be faced with relatively closed faculties which prevented adaptive behavior on their part at a rate comparable to other administrators who were less open, but who had open faculties.

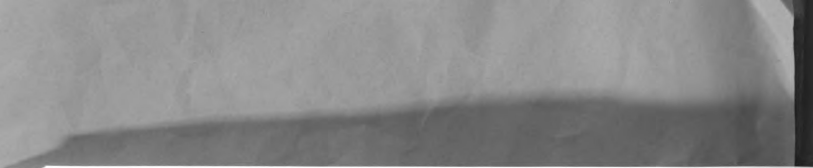
Due to the failure to reject the first null hypothesis, the current study does not make any statement about the relationship that open or closed administrators may have with the rate of adoption of new practices. Further research is needed in an experimental setting placing administrators in a situation calling for adaptation and predicting in advance the behavior of various subjects on the basis of pre-treatment testing for dogmatism.

The research hypothesis predicting that more teachers in innovative schools would have open belief systems than teachers in non-innovative schools is supported by



the data collected. The result may be viewed in several ways. If the result is viewed as conclusive, that is, that a relationship does exist between the adoption of a new practice and the degree to which an individual has an open belief system, then in areas where rapid change to new practice is desired, teachers might be screened by use of the Dogmatism Scale. However, it seems advisable that any such uses of the Dogmatism Scale should be tempered by the use of other techniques for assessing the effectiveness of any given individual with respect to the adoption of new instructional practices.

If the result is viewed as a tentative basis for further research, then further samples need to be drawn to replicate the crucial elements of these findings. Situations need to be structured in which individuals with known dogmatism scores can be observed over time for their adaptive behavior. Experimental use might be made of the finding of a higher proportion of open belief system teachers in the innovative school districts by selecting one or more such districts for a trial adoption of a specific practice and the selection of a similar non-innovative district and subsequently studying the progress of adoption in each district.



Distribution of Dogmatism Scores

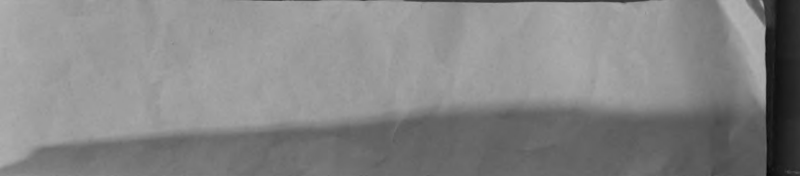
The distribution of dogmatism scores in an educator population was for all practical purposes considered normal. By reviewing the frequency polygon shown in the Appendix, Exhibit 6, one would note that it was slightly peaked and that the curve was similar to that found by Rokeach.³

The deviation from a normal curve was not enough to preclude the use of normal curve statistics for analysis of this data. The means and standard deviation obtained in this study were somewhat less than might be expected from the means and standard deviations obtained in other studies using the forty item scale. This might be due to the general level of education of all subjects. Troidahl and Powell⁴ found that a negative correlation existed between dogmatism and education.

The discrepancy between the mean score of the administrators and the mean score of teachers strongly indicated that the two groups differed with respect to dogmatism. This difference was irrespective of the group (innovative or non-innovative) to which they were assigned. Ninety-five per cent confidence interval estimates for each group indicated

³Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960), p. 90.

⁴Verling C. Troidahl and Fredric A. Powell, "A Short-Form Dogmatism Scale for Use in Field Studies" (unpublished manuscript, Department of Communication, Michigan State University, 1964), p. 14.



that the two means obtained were unlikely to occur in samples from the same population. Table 12 gives the confidence interval for each mean.

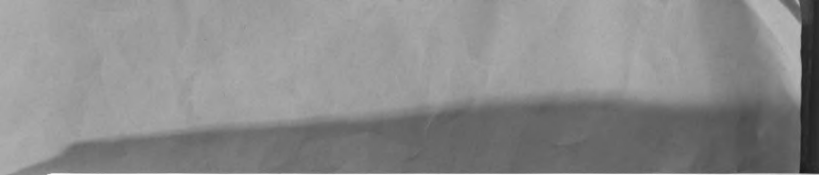
TABLE 12.--Confidence interval estimates for means on Dogmatism Scale for teachers and administrators

Subjects	Means	Standard Deviation	95% Confidence Interval
All Teachers	64.23	14.19	$63.22 \leq \mu \leq 65.24$
All Administrators	59.29	14.25	$56.39 \leq \mu \leq 62.92$

Comparison of Adoption Rates

Several improvements need to be made in the means for assessing innovation rates and innovative behavior of individuals. The data reported in the Five Year Survey of Progress in Michigan Schools suffered from some inaccuracy in a number of respects. The interview data, which attempted to validate the data reported in the Five Year Survey of Progress in Michigan Schools, showed that there was considerable misunderstanding in the eight school districts of just what was meant by each practice included in the Five Year Survey.

A comparison of the total number of practices adopted by a district produced an unequal weight between small and large districts. Dividing the total number of practices by the number of individual units completing the forms helped



eliminate this problem. However, some inequity still existed in as much as some districts lumped all elementary units into one report and did not report the number of elementary units in which the practices had been adopted.

The Associated Public School Systems 1955 Time Scale instrument served to confirm the differences that existed between the two groups of school districts used in the current study. However, considerable difficulty was experienced by the interviewees in arriving upon an accurate date for the adoption of a specific practice. At best the date estimates were "ball park guesses."

The data on the adoption of various educational practices indicated that the schools classed as innovative and those classed as non-innovative were different with respect to the variable mentioned in the preceding paragraph. A good estimate of which schools were adopting many new practices could be derived from survey data such as the Five Year Survey. The Associated Public School Systems 1955 Time Scale could serve to provide a basis for the confirmation of initial data used to classify school districts as innovative or non-innovative.

Description of School Districts

The school districts in the state of Michigan are changing rapidly with respect to their rate of adoption of new practices. School districts in identical circumstances with respect to innovation probably don't exist. In order



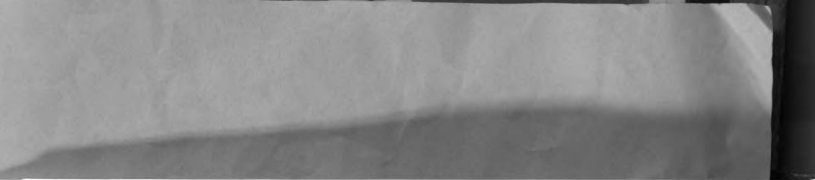
to apply the findings of the current study to other districts, the measures used in it should be administered. The instruments should be used experimentally with the view of determining specifically the relationship that may exist between the variables of this study and like variables in the district to which the results are being applied.

Summary

In this chapter data were presented which made possible the testing of two hypotheses and the answering of three questions requiring descriptive information. Alternate hypothesis one stated that the proportion of administrators with open belief systems would be larger in innovative school districts than the proportion of administrators with open belief systems in non-innovative school districts. Statistical analysis of data resulted in lack of support for this hypothesis.

Alternative hypothesis two stated that the proportion of teachers with open belief systems would be larger in innovative school districts than the proportion of teachers with open belief systems in non-innovative school districts. Statistical analysis of the data collected allowed rejection of the null hypothesis at the $\alpha=.05$ level. The research hypothesis was supported.

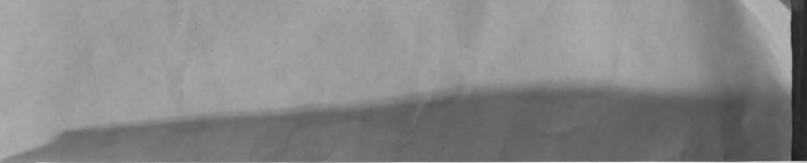
Data were reported which permitted several approaches to the three questions presented in Chapter I as additional objectives of this study. The dogmatism distribution for an educator population appeared normal. However, the mean for



administrators (59.29) was lower than the mean for teachers (64.23). Confidence interval estimates showed the means to be unlikely occurrences from the same population. The correlation between dogmatism and age was .15 for teachers and .17 for administrators.

The data reported for adoption classification of school districts as innovative or non-innovative showed some error in both the Five Year Survey of Progress in Michigan Schools and in the Associated Public School Systems 1955 Time Scale. However, for purposes of this study the methods used in the above two studies did serve to differentiate two distinctly different groups of school districts with respect to the rate of adoption of new practices. Correlations computed between constructed innovativeness scores and four cost factors showed a slight positive relationship. However, only 4.8 per cent of the variance in innovation could be accounted for by any single cost factor.

The description of the school districts in sufficient detail to permit generalization of the results to other "like" districts was not successful. The individual variation between school districts on many factors did not permit application of the results of this study directly to any other district. Experimental application of the Dogmatism Scale in any given school district was recommended where use of the results of this study were contemplated.





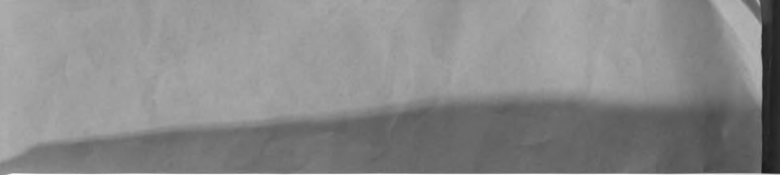
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to collect empirical evidence relevant to the idea that there is a relationship between the nature of the belief systems of individuals in school districts and their adoption of new educational practices. The study arose from the general innovation literature and the current popularly expressed need for increased innovation rates in the schools. Of particular concern were increased rates of adoption of new instructional practices.

A review of the literature of innovation showed a need for study of additional personality variables as they related to the adoption of new ideas, practices, and instructional tools. The variables treated in this study were derived from the instrumentation used to identify open or closed belief systems and to identify innovative and non-innovative school districts.

The study was limited to selected school districts at the extreme ends of the distribution of innovation scores constructed from the Five Year Survey of Progress



in Michigan Schools.¹ The selection procedures were structured to control for selected educational cost factors of size, effort, ability, and expenditure per pupil as a single composite financial factor.

Two hypotheses were formulated for statistical testing. In general form, the hypotheses stated that a greater proportion of teachers with open belief systems would be found in innovative school districts than in non-innovative school districts. Three questions were formulated and descriptive answers were sought. The questions were: (1) What is the distribution of scores obtained on a measure of open-closed belief systems for administrators and for teachers?, (2) How does the "adoption rate" for the school districts in this study compare with the adoption rate graphed in the 1955 Associated Public School Systems study?, and (3) Can the school districts in this study be described so as to permit identification of like systems in which to replicate the study in future research based on this study?

The design used to test the hypotheses and to collect descriptive data for the three questions consisted of appropriate statistical tests (chi-square procedures, Fisher's exact probability test, Pearson correlation techniques, and confidence interval estimates for the mean) and struc-

¹Five Years of Change in the Public Elementary and Secondary Schools in Michigan (Lansing, Michigan: The Department of Public Instruction, 1964).



tured interviews with administrative personnel in the selected school districts.

Reliability estimates computed by split-half methods for the short form of the Rokeach Dogmatism Scale were established between .63 and .66 for the educator population in this study.

The results of the data analysis showed that no statement could be made about the first hypothesis. The null hypothesis for administrators could not be rejected at the $\alpha=.05$ level. The second hypothesis which predicted a larger proportion of open belief system teachers in innovative school districts than in non-innovative school districts was supported. The null hypothesis was rejected at the $\alpha=.05$ level. Several interpretations of this result were presented in the discussion section of Chapter IV.

Descriptive data on the three questions raised as partial objectives of this study provided several answers to the questions. The dogmatism distribution for the educator population treated in this study was slightly peaked at the mean (leptokurtic). This result agreed with studies by Rokeach. However, the degree of divergence from normality did not preclude the use of normal curve statistics. The mean for administrators (59.29) was lower than the mean for teachers (64.23). Confidence interval estimates indicated that it was unlikely that the two means were from the same population. The correlation between dogmatism and age was .15 for teachers and .17 for administrators.



The data reported for adoption classification of school districts as innovative or non-innovative showed some error in both the Five Year Survey of Progress in Michigan Schools and in the Associated Public School Systems Time Scale. However, for purposes of this study the methods used in the two studies did serve to differentiate two distinctly different groups of school districts with respect to the rate of adoption of new practices. The control factor of educational costs was found to be relatively insignificant as related to innovation. Correlations were computed for each of the factors and the innovation scores constructed from the Five Year Survey of Progress in Michigan Schools. However, only 4.8 per cent of the variance in innovation could be accounted for by any single cost factor.

Comparison of adoption patterns in the selected school districts with adoption patterns in the Adler study using the Associated Public School Systems 1955 Time Scale proved impossible. The superintendents and other administrators interviewed in this study were unable to give specific dates when adoption of a practice occurred in their districts. Their estimates were only "ball park guesses."

Description of the school districts in sufficient detail to permit generalization of the results to other "like" districts was a tenuous enterprise. Each school district varied considerably. Generalizing the results to other districts should be based upon experimental application



of the instrumentation to other districts and the consequent replication of the results obtained in this study.

Conclusions

The Five Year Survey of Progress in Michigan Schools has provided for this study a means of identifying innovative and non-innovative school districts. While it has served effectively as an operational definition for the conduct of research, there is a need to arrive at a common means of defining innovation that would be acceptable across different research projects and disciplines. The problem of coming to a common definition appears to involve the answering of two questions: (1) Is the adoption of a particular practice, idea, or object sufficient to be classed as a sign of innovation?, and (2) What constitutes adoption?

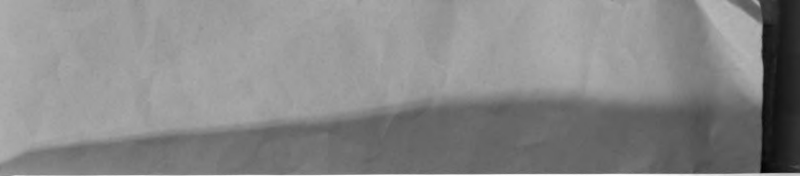
The first question may be a moot point. Common practice in the study of innovation has been to define innovation as the adoption of a new practice, idea, or object earlier than the bulk of all adopters. This method, then, is always a post facto judgement on past events. The real crux of the question arises when judgements of innovativeness are applied to future behavior. This study has attempted to link the nature of individual belief systems with such innovative or non-innovative judgements. Since the results of this study appear to link the belief systems of individual teachers to the innovative behavior of school districts with respect to the particular practices included in the innovative assessment,



it seems reasonable to suggest that knowledge of the belief systems of individual teachers might provide a cue to increasing innovation rates by selecting open belief system teachers for the initial trial of new instructional practices.

The second question, addressing itself to what constitutes adoption, can elude any definition given for it. Any definition given for "innovation" can be questioned on the basis of the criteria used to decide whether or not a specific instance fits the definition. While the operational definition used in this study is the statement of the administrator regarding the adoption of a practice followed by interview questioning about the presence of the practice, it may be argued that only observation of the practice in use will constitute a valid assessment of adoption. If observation is the criterion for adoption, then the observation can be questioned on the basis of the observer's perception of the event, the quality of the observed adoption, or the time selected for making the observation. Extensive interviews with individuals reporting adoption data have provided added confidence in the validity of their reports. Supporting data supplied to confirm adoption reports include numbers of teachers and students affected and a listing of advantages and disadvantages encountered in the adoption of new practices.

Future studies should attempt to resolve both of the above questions. They may be resolved by further discussion



of the meaning of innovation within education. This discussion may take the direction of operational specification used in this study or it may take a more general approach to definition. The problem of deciding when adoption has occurred seems to be one that can best be handled by operational definition within any given research effort. Those studies which are interested in overall patterns of adoption can afford to use a less precise operational definition of adoption because errors made in any one unit of adoption will tend to be cancelled out by random error across all the adoption units. Those studies that deal with the pattern of adoption within a single unit of adoption and are interested in making changes in the rate of adoption within the single unit need to be more precise in the definition of when adoption has occurred.

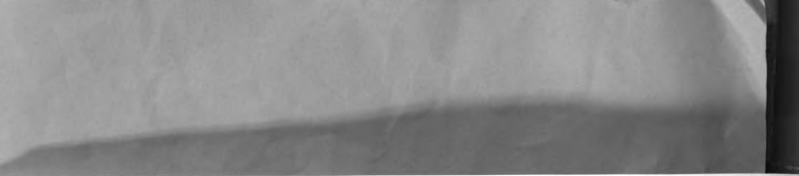
In summarizing this discussion, the Five Year Survey of Progress in Michigan Schools has effectively identified schools at the extreme ends of a distribution of adoption scores that could be classed as innovative or non-innovative. While the individual schools selected might in some respects resemble schools located at other points within the distribution, it is reasonably safe to consider them as representative of the extreme end from which they have been drawn.

The Associated Public School Systems 1955 Time Scale used in this study was an effective method of classifying school districts as innovative or non-innovative on the



basis of use being made of a selected list of practices. In school districts classed as innovative on the basis of the Five Year Survey of Progress in Michigan Schools, the proportion of practices in widespread use was considerably larger than the proportion of practices in widespread use in non-innovative school districts. This served to confirm the classification made on the basis of the Five Year Survey of Progress in Michigan Schools.

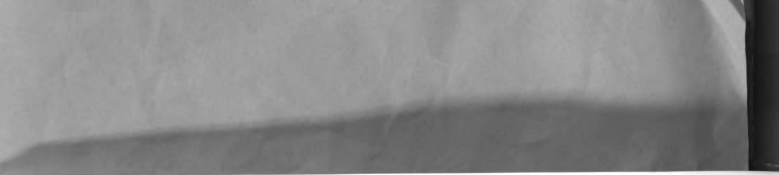
The application of the Associated Public School Systems 1955 Time Scale showed the need for a more commonly accepted method of defining adoption. Nevertheless, this application did show that the definition of innovativeness based on the Associated Public School Systems 1955 Time Scale produced the same classification of districts as the use of constructed innovation scores based on the Five Year Survey of Progress in Michigan Schools. In other words, the two scales produced the same classification of districts. Since this was the case, the evidence supported the position that when large numbers of practices were used as the criterion, the individual misinterpretation of some practices by the person judging adoption did not distort the classification. While a more common definition of adoption would help, the use of several practices that could be adopted in different ways and be judged as adoption did not distort the classification of districts. Superintendents and other administrators supplying data on the Associated Public School Systems



1955 Time Scale did have difficulty assigning a definite year to their adoption of a new practice when the practice had been adopted more than five years before the interviews.

It would seem desirable to study adoption as it occurs over time, or during a relatively short previous time span. However, where adequate records exist, verification of adoption can rest on those records. Time and point of an innovation accompanied by adequate records would be highly desirable in determining the degree to which a practice represents an innovation. Such consideration should be included in any operational definition of adoption and innovation in future research.

The hypotheses tested led to the conclusion that, while there were more open belief system teachers in innovative districts than in non-innovative districts, the same was not true of administrators. The small sample of administrators made it extremely hazardous to draw any conclusions about the extent to which the number of open or closed administrators affected the innovation rate of a school. Since administrators as a group had lower Dogmatism Scale scores than teachers as a group, perhaps the administrator's influence toward the use of new instructional practices was thwarted by his closed belief system faculty in the non-innovative school districts. If this were true, then the administrator who faced such a situation might well use instruments that would help him select open belief system teachers.



Another valuable investigation of this finding would be a study of selected administrators faced with closed faculties. The question most in need of an answer in such a study would be: What is the most effective way to move a closed faculty to adopt new practices? Jamias² found that where closed individuals were faced with a suggestion for adoption, adoption was most likely to occur if the suggestion came from an authority figure. This needs verification in the field of education.

The result of the testing of the hypothesis concerning teachers suggested that future experimental studies of these variables might be conducted while the subjects were assigned to different treatment groups on the basis of their Dogmatism Scale scores. The groups would then be observed for differing approaches to the adoption of new practices.

The normal distribution of Dogmatism Scale scores in the total educator population studied makes feasible the future use of this scale in studies of teachers and administrators employing normal curve statistics. A number of other instructional variables might well be linked with the scores of educators on the Dogmatism Scale. For example, teacher-student interaction might either be inhibited or encouraged by closed or open individuals; the instructional

²Juan F. Jamias, "The Effects of Belief System Styles on the Communication and Adoption of Farm Practices," (unpublished Ph. D. dissertation, Michigan State University, 1964).



methodology used by teachers might be associated with their open or closed belief system as it had reference to their beliefs about the structure of knowledge; or the community setting for a particular school district might be related to the type of teacher employed in the district with respect to the open or closed belief system dimension.

Work needs to be done to discover ways to structure pre-service teacher education so that it produces teachers who face new teaching situations, methodology, and concepts with essentially open belief systems. Such an instructional program conceivably could succeed in altering and updating the program of the educational establishment more rapidly than any amount of federal funds supplied to tradition-bound school systems. Any such concerted effort would have to begin with a refinement of belief system theory and experimental investigation of methods to alter already structured belief systems. Initially, experimentation might be directed toward discovering what happens to the belief system of pre-service teachers when they are confronted in their training with a multiplicity of conflicting instructional methodologies and forced to select their own belief system concerning how instruction should be conducted.

The current study has been designed to provide descriptive data for the school districts selected so that their differences and similarities might be examined. Such description, while adequate for providing evidence that the



schools used were similar in the desired areas, lacks adequacy when one attempts to select similar schools outside the study. The variation between districts, with respect to all the factors described in this study, is great. A considerable range of districts with respect to the four cost factors have been selected. The districts vary over a wide geographical area and have large differences in terms of the type of community they serve. Thus, when school districts outside the study can be identified as being within the limits of the variable values for the factors controlled for, then the findings can be applied to new districts.

The conclusions presented in the preceding paragraphs have been reached as a result of analysis of the variables treated in this research project. They represent one possible interpretation of the data reported. Other interpretations are possible; however, those suggested seemed most feasible. In the last analysis it is possible to use the Dogmatism Scale as a tentative indicator of those teachers most likely to adopt a new instructional practice.

Recommendations

1. It is recommended that innovation rates be determined by taking into consideration not only the presence and tenure of a practice, but also the extent to which the practice has contributed to instructional quality.



2. It is recommended that this study be replicated with the following improvements in its methodology: a) Random selection of school districts, and b) Identification of school districts as innovative by response to new practices after their selection, not on past behavior. In other words, select the districts, state an operational definition of innovation, define the practices and the time period for adoption, then study the adoption that occurs.

3. It is recommended that the Dogmatism Scale be applied to educator populations in studies that assess variables other than innovation to determine the relationship between the open and closed belief systems and such variables as teacher-student interaction, teaching methodology, community setting, and other related variables.

4. It is recommended that a sample of teachers and administrators be studied, using the Dogmatism Scale to predict future response to a particular new practice. Subsequent assessment of their responses to particular new practices would indicate the value of this procedure in the selection of introductory points for new practices.

5. It is recommended that the relationship of large scale federal educational spending to innovation, the instructional setting, and belief systems be examined.

6. It is recommended that extensive research be undertaken to further develop the concept of open and closed belief systems.



7. It is recommended that future studies of innovation and personality factors include the open and closed belief system dimension.





APPENDIX

S.A.

**INSTRUCTIONS FOR COMPLETING THIS
SURVEY OF FIVE YEARS OF PROGRESS IN
PUBLIC EDUCATION IN MICHIGAN
ELEMENTARY FORM**

THESE INSTRUCTIONS ARE TO BE USED TO COMPLETE THIS QUESTIONNAIRE FORM

PART I

Page 2. Simply check the appropriate column year (or years) when a change was made in organization in your school as indicated by classifications (a) through (q). If there are any organization changes which do not appear on the list, add them to the list and check appropriate year (or years) in effect.

Example—If Team Teaching was begun in 1960-61 and is still practiced then check (h) Team Teaching in columns 1960-61, 1961-62, 1962-63.

Page 3. Complete Columns (A) through (I) to indicate details regarding organizational changes made.

Example—If Team Teaching (h) was practiced in Science classes, see line (h) under first column (marked Part I, Page 2, Code No.). For this, under Column A, write in "Science" alongside (h). Continue along the same line to indicate information called for with regard to Team Teaching (h) in Science under columns (B), (C), (D), and (E). Under (F) and (G), use code details on page 4 and indicate code number in each column. Complete columns (H) and (I) according to your judgment.

Page 4. Items (3) and (4), Self-explanatory.

PART II

Page 5. Simply check the appropriate column year (or years) when a curriculum change was made in your school as identified by classifications (a) through (i). If there were any curriculum changes which do not appear on the list, add them to the list and check appropriate year (or years) in effect.

Page 6. Complete Columns (B) through (J) to indicate details regarding curriculum changes made.

Example—If Foreign Languages was checked on page 5, check and indicate number if special personnel were hired, column (B) and complete columns (C), (D) and (E). Under (F) and (G), use code details on page 7 and indicate code number in each column. Complete columns (H), (I) and (J) according to your judgment.

Page 7. Items (3) and (4), Self-explanatory.

PART III

Page 8. A project which is more research oriented than those identified on previous pages may have been completed or is in process in your school. Indicate here the title of the project, its nature (briefly) and the name of the individual(s) actually involved in the planning or implementation. While the Superintendent or Principal may have overall responsibility for the project, what is wanted here is the person(s) actually responsible for conducting the research. Please supply other data requested.

Name of School

Grade Range

Enrollment

Person Completing Report

**A SURVEY OF FIVE YEARS
OF
PROGRESS IN PUBLIC EDUCATION IN MICHIGAN**

ELEMENTARY FORM

Part I—ELEMENTARY ORGANIZATION

1. Have there been any notable organization changes in the elementary school program in your building since the 1957-58 school year?

Yes _____ No _____

Note: Here we are concerned primarily with changes which have affected the organizational structure of the elementary school program. Listed below are examples of changes which you may have introduced:

(Check year for which changes were made. If new practice was dropped, indicate by circling check for that year.)

	1957-58 Or Earlier	1958-59	1959-60	1960-61	1961-62	In Process 1962-63
a. Departmentalization - - -						
b. Self-contained Classrooms -						
c. Ungraded Classrooms - - -						
d. Change from Semi-Annual to Annual Promotion - - -						
e. Extended School Year - - -						
f. Longer School Day - - -						
g. Staggered Sessions - - -						
h. Team Teaching - - -						
i. Additional Staff Specialist (counselor, foreign language teacher, etc.) - - -						
j. Educational TV Classes - - -						
k. Accelerated Classes - - -						
l. Counseling and Guidance - -						
m. Special Education - - -						
n. Elementary Curriculum Study Committees - - -						
o. Homogeneous Grouping - - -						
p. Programmed Instruction - - -						
q. Others (Specify) _____						
r. _____						
s. _____						



3. Please complete the appropriate squares below for those innovations checked on Page 2. These responses should be for the latest year checked:
(Please note the left column is coded to the innovations on Page 2.)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)			
Part I Page 2, Code Number	Where Appropriate, Indicate Subject Area Such as English, Science, Etc.	Specify if Special Person- nel Were Hired for Project	Actual Number of Students Involved	Estimate Number of Students Involved	School Minutes per Week for this Activity. Indicate where Ap- propriate	Indicate from Code the Agency Most Helpful*	Indicate from Code Group Most Respon- sible for Sustaining Program to Begin*	Check those Innova- tions which are to be Con- tinued	Indicate Judgment of the Effectiveness of Program			
								Ex- cellent	Good	Fair	Not Work- ing as Planned	Pro- gram Dis- continued
a.												
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r.												
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*Code details to complete Columns "F" and "G" listed on Page 4.

4. If you wish to describe in greater detail any innovation

Code Details—Column F

Agency which provided most consultative assistance to local school with special projects.
Place the appropriate number from the list below in the appropriate squares on the previous page.

- (1) Department of Public Instruction
- (2) State Curriculum Committee of the Department of Public Instruction
- (3) Colleges or Universities
- (4) County Education Office
- (5) Other School Districts
- (6) Others (Specify).....
- (7)
- (8)

Code Details—Column G

Individual or group most responsible for causing program changes.
Place the appropriate number from the list below in the appropriate squares on the previous page.

- (1) School Board
- (2) Teachers
- (3) Pupils
- (4) Community Group
- (5) Department of Public Instruction
- (6) Colleges and Universities
- (7) Superintendent
- (8) Principal
- (9) County Education Office
- (10) Others (Specify).....
- (11)

3. Please send any reports, materials, studies or articles which would support your appraisal that the innovations have improved the elementary program. Please indicate below what materials are being sent:

- a.
- b.
- c.
- d.

4. If you wish to describe in greater detail any elementary organization changes named herein, please do so on additional pages.



Part II—ELEMENTARY CURRICULAR OFFERINGS

Since the school year 1957-58, many local school systems have worked to up-date specific sections of their elementary school programs. Please specify below for the year or years involved, which of the following subject areas have been strengthened in your school.

1. Have there been any notable curriculum changes in the elementary school program in your building since the 1957-58 school year?

Yes _____ No _____

Note: Here we are concerned primarily with changes which have affected the curriculum of the elementary school program. Listed below are examples of changes which you may have introduced:

(Check year for which changes were made. If new practice was dropped, indicate by circling check for that year.)

	1957-58 Or Earlier	1958-59	1959-60	1960-61	1961-62	In Process 1962-63
a. Arithmetic - - - - -						
b. Comparative Government -						
c. Economic Education - - -						
d. Foreign Languages - - -						
e. Other Language Arts - -						
f. Physical Education - - -						
g. Reading - - - - -						
h. Science - - - - -						
i. Social Studies - - - -						
j. Special Education (Specify Type) _____						
k. Writing - - - - -						

Have there been any notable curriculum changes in other areas? If so, indicate below.

l. _____	
m. _____	
n. _____	

(C)

ran complete Column

2. Please complete the appropriate squares below for those innovations checked on Page 5. These responses should be for the latest year checked:
(Please note the left column is coded to curricular offerings on Page 5.)

Art II Page 5, Code number	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)				
	Specify if Special Program Was Filed for Project	Actual Number of Grades Involved	Estimate Number of Students Involved	School Minutes per Week for this Activity. Indicate where Ap- propriate	Indicate from Code the Agency Most Helpful*	Indicate from Code Group Most Responsible for Causing Program to Begin*	Check those Innova- tions Which are to be Con- tinued	Specify if Program is Accelerated or for Slow Learners	Indicate Judgment of the Effectiveness of Program				
									Ex- cellent	Good	Fair	Not Work- ing as Planned	Pro- gram Dis- continued
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*Code details to complete Columns "F" and "G" listed on Page 7.

Please mail any reports, materials, or other articles, when, would support the program that the staff should have prepared the elementary program. Please indicate below what materials you are using now.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

If you wish to describe in greater detail any elementary materials checked on the above, attach a separate page.

1. Name—City
or state, pro-
for the app-

1. Name—Column
initial or group no.
for the appropriate

1. Name and any report
number. Please indicate

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99. _____
100. _____

1. Name and any report
number. Please indicate

Code Details—Column F

Agency which provided most consultative assistance to local school with special projects.
Place the appropriate number from the list below in the appropriate squares on the previous page.

- (1) Department of Public Instruction
- (2) State Curriculum Committee of the Department of Public Instruction
- (3) Colleges or Universities
- (4) County Education Office
- (5) Other School Districts
- (6) Others (Specify) _____
- (7) _____
- (8) _____

Code Details—Column G

Individual or group most responsible for causing program changes.

Place the appropriate number from the list below in the appropriate squares on the previous page.

- (1) School Board
- (2) Teachers
- (3) Pupils
- (4) Community Group
- (5) Department of Public Instruction
- (6) Colleges or Universities
- (7) Superintendent
- (8) Principal
- (9) County Education Office
- (10) Others (Specify) _____
- (11) _____

3. Please send any reports, materials, studies or articles which would support your appraisal that the innovations have improved the elementary program. Please indicate below what materials are sent:

- a. _____
- b. _____
- c. _____
- d. _____

4. If you wish to describe in greater detail any elementary curriculum changes named herein, please do so on additional pages.



Part III—ELEMENTARY EDUCATIONAL RESEARCH ACTIVITIES

Name and position of person filling out this report _____

Name of school building and school system _____

Range of grades covered by this report _____

1. Please list below any educational research or studies conducted in your school since the 1960-61 school year. Be as specific as possible, e.g. "A study of the effect of television instruction on the achievement of pupils in U. S. History." Include any completed reports or demonstration project materials that you have available. Mention grade level and number of students involved. Please list here even though activity may have been referred to in Parts I or II of this questionnaire.

a. _____ Date Study Began _____

Name of person in your school conducting study _____

Grades Involved _____

_____ Number of students involved _____ Completed _____ In progress _____ Written report available

b. _____ Date Study Began _____

Name of person in your school conducting study _____

Grades Involved _____

_____ Number of students involved _____ Completed _____ In progress _____ Written report available

2. Please list below any educational research or studies in process or contemplated in your school during the 1962-63 school year. Please mention grade level and number of students involved.

a. _____ Date Study Began _____

Name of person in your school conducting study _____

Grade _____

Students _____

b. _____ Date Study Began _____

Name of person in your school conducting study _____

Grade _____

Students _____

3. Please name the staff member in your school you feel most competent and most interested in educational research, innovations or studies.

Name _____

Title _____

USE ADDITIONAL SHEETS IF NECESSARY

Please include any completed research or study reports that are available.

**INSTRUCTIONS FOR COMPLETING THIS
SURVEY OF FIVE YEARS OF PROGRESS IN
PUBLIC EDUCATION IN MICHIGAN
SECONDARY FORM**

THESE INSTRUCTIONS ARE TO BE USED TO COMPLETE THIS QUESTIONNAIRE FORM

PART I

Page 2. Simply check the appropriate column year (or years) when a change was made in organization in your school as indicated by classifications (a) through (q). If there are any organization changes which do not appear on the list, add them to the list and check appropriate year (or years) in effect.

Example—If Team Teaching was begun in 1960-61 and is still practiced then check (h) Team Teaching in columns 1960-61, 1961-62, 1962-63.

Page 3. Complete Columns (A) through (I) to indicate details regarding organizational changes made.

Example—If Team Teaching (h) was practiced in Science classes, see line (h) under first column (marked Part I, Page 2, Code No.). For this, under Column A, write in "Science" alongside (h). Continue along the same line to indicate information called for with regard to Team Teaching (h) in Science under columns (B), (C), (D), and (E). Under (F) and (G), use code details on page 4 and indicate code number in each column. Complete columns (H) and (I) according to your judgment.

Page 4. Items (3) and (4), Self-explanatory.

PART II

Page 5. Simply check the appropriate column year (or years) when a curriculum change was made in your school as identified by classifications (a) through (i). If there were any curriculum changes which do not appear on the list, add them to the list and check appropriate year (or years) in effect.

Page 6. Complete Columns (B) through (J) to indicate details regarding curriculum changes made.

Example—If Foreign Languages was checked on page 5, check and indicate number if special personnel were hired, column (B) and complete columns (C), (D) and (E). Under (F) and (G), use code details on page 7 and indicate code number in each column. Complete columns (H), (I) and (J) according to your judgment.

Page 7. Items (3) and (4), Self-explanatory.

PART III

Page 8. A project which is more research oriented than those identified on previous pages may have been completed or is in process in your school. Indicate here the title of the project, its nature (briefly) and the name of the individual(s) actually involved in the planning or implementation. While the Superintendent or Principal may have overall responsibility for the project, what is wanted here is the person(s) actually responsible for conducting the research. Please supply other data requested.

Name of School

Grade Range

Enrollment

Person Completing Report

**A SURVEY OF FIVE YEARS
OF
PROGRESS IN PUBLIC EDUCATION IN MICHIGAN**

SECONDARY FORM

Part I—SECONDARY ORGANIZATION

1. Have there been any notable organization changes in the secondary school program in your building since the 1957-58 school year?

Yes _____ No _____

Note: Here we are concerned primarily with changes which have affected the organizational structure of the secondary program. Listed below are examples of changes which you may have introduced:

(Check year for which changes were made. If new practice was dropped, indicate by circling check for that year.)

	1957-58 Or Earlier	1958-59	1959-60	1960-61	1961-62	In Process 1962-63
a. Departmentalization - - -						
b. Core or Block Time - - -						
c. Ungraded Classrooms - - -						
d. Change from Semi-Annual to Annual Promotion - - -						
e. Extended School Year - - -						
f. Longer School Day - - -						
g. Staggered Sessions - - -						
h. Team Teaching - - -						
i. Additional Staff Specialist (counselor, foreign language teacher, etc.) - - -						
j. Educational TV Classes - - -						
k. Advanced Placement - - -						
l. Counseling and Guidance - - -						
m. Special Education - - -						
n. Secondary Curriculum Study Committees - - -						
o. Homogeneous Grouping - - -						
p. Programmed Instruction - - -						
q. Others (Specify) _____						
r. _____						
s. _____						



3. Please complete the appropriate squares below for those innovations checked on Page 2. These responses should be for the latest year checked:
(Please note the left column is coded to the innovations on Page 2.)

Part I Page 2 Code Number	(A) Where Appropriate, Indicate Subject Areas Such as English, Science, Etc.	(B) Specify if Special Person- nel Were Hired for Project	(C) Actual Number of Grades Involved	(D) Estimate Number of Students Involved	(E) School Minutes per Week for this Activity Indicate where App- ropriate	(F) Indicate from Code the Agency Most Helpful*	(G) Indicate from Code Group Most Respon- sible for causing Program to Begin*	(H) Check those Innova- tions which are to be Con- tinued	(I) Indicate Judgment of the Effectiveness of Program				
									Ex- cellent	Good	Fair	Not Work- ing as Planned	Pro- gram Dis- con- tinued
a.													
b.													
c.													
d.													
e.													
f.													
g.													
h.													
i.													
j.													
k.													
l.													
m.													
n.													
o.													
p.													
q.													
r.													
s.													

*Code details to complete Columns "F" and "G" listed on Page 4.

Write-Column F

get this provided
for the appropriate

in Details—Col

initial or group
Place the app

1. Please send any
program. Please

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____

Code Details—Column F

Agency which provided most consultative assistance to local school with special projects.
Place the appropriate number from the list below in the appropriate squares on the previous page.

- (1) Department of Public Instruction
- (2) State Curriculum Committee of the Department of Public Instruction
- (3) Colleges or Universities
- (4) County Education Office
- (5) Other School Districts
- (6) Others (Specify).....
- (7)
- (8)

Code Details—Column G

Individual or group most responsible for causing program changes.
Place the appropriate number from the list below in the appropriate squares on the previous page.

- (1) School Board
- (2) Teachers
- (3) Pupils
- (4) Community Group
- (5) Department of Public Instruction
- (6) North Central Regional Accrediting Association
- (7) Colleges and Universities
- (8) University of Michigan Bureau of School Services (Accreditation)
- (9) Superintendent
- (10) Principal
- (11) County Education Office
- (12) Others (Specify).....
- (13)

3. Please send any reports, materials, studies or articles which would support your appraisal that the innovations have improved the secondary program. Please indicate below what materials are being sent:

- a.
- b.
- c.
- d.

4. If you wish to describe in greater detail any secondary organization changes named herein, please do so on additional pages.



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in
out
1. 2m
1m
Note

Part II--SECONDARY CURRICULAR OFFERINGS

Since the school year 1957-58, many local school systems have worked to up-date specific sections of their secondary school programs. Please specify below for the year or years involved, which of the following subject areas have been strengthened in your system:

1. Have there been any notable curriculum changes in the secondary school program in your building since the 1957-58 school year?

Yes..... No.....

Note: Here we are concerned primarily with changes which have affected the curriculum of the secondary program. Listed below are examples of changes which you may have introduced:

(Check year for which changes were made. If new practice was dropped, indicate by circling check for that year.)

	1957-58 Or Earlier	1958-59	1959-60	1960-61	1961-62	In Process 1962-63
a. Comparative Government	-					
b. Economic Education	-					
c. English	-					
d. Foreign Languages	-					
e. Mathematics	-					
f. Physical Education	-					
g. Science	-					
h. Social Studies	-					
i. Special Education (See Instructions)	-					

Have there been any notable curriculum changes in other areas? If so, indicate below.

j. _____

k. _____

l. _____



2. Please complete the appropriate squares below for those innovations checked on Page 5. These responses should be for the latest year checked:
(Please note the left column is coded to curricular offerings on Page 5.)

	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)				
Part II Page 5. Code number	Specify if Special Personnel Were Hired for Project	Actual Number of Grades Involved	Estimate Number of Students Involved	School Minutes per Week for this Activity. Indicate where Ap- propriate	Indicate from Code the Agency Most Helpful*	Indicate from Code Group Most Responsible for Causing Program to Begin*	Check those Innova- tions Which Are to be Con- tinued	Specify if Program is Accelerated or for Slow Learners	Indicate Judgment of the Effectiveness of Program				
									Ex- cellent	Good	Fair	Not Work- ing as Planned	Pro- gram Dis- continued
a.													
b.													
c.													
d.													
e.													
f.													
g.													
h.													
i.													
j.													
k.													
l.													
m.													
n.													

*Code details to complete Columns "F" and "G" listed on Page 7.

Code Details—Column F

Agency which provided most consultative assistance to local school with special projects.
Place the appropriate number from the list below in the appropriate square on the previous page.

- (1) Department of Public Instruction
- (2) State Curriculum Committee of the Department of Public Instruction
- (3) Colleges or Universities
- (4) County Education Office
- (5) Other School Districts
- (6) Others (Specify) _____
- (7) _____
- (8) _____

Code Details—Column G

Individual or group most responsible for causing program change.
Place the appropriate number from the list below in the appropriate square on the previous page.

- (1) School Board
- (2) Teachers
- (3) Pupils
- (4) Community Group
- (5) Department of Public Instruction
- (6) Colleges or Universities
- (7) Superintendent
- (8) Principal
- (9) County Education Office
- (10) Others (Specify) _____
- (11) _____

3. Please send any reports, materials, studies or articles which would support your appraisal that the innovations have improved the secondary program. Please indicate below what materials are being sent:

- a. _____
- b. _____
- c. _____
- d. _____

4. If you wish to describe in greater detail any secondary curriculum changes named herein, please do so on additional pages.

Table III—SECONDARY EDUCATIONAL RESEARCH ACTIVITIES

Name and position of person filling out this report.....

Name of school building and school system.....

Range of grades covered by this report.....

1. Please list below any educational research or studies conducted in your school since the 1960-61 school year. Be as specific as possible, e.g. "A study of the effect of television instruction on the achievement of pupils in U. S. History." Include any completed reports or demonstration project materials that you have available. Mention grade level and number of students involved. Please list here even though activity may have been referred to in Parts I or II of this questionnaire.

a. Name of educational research or study Date Study Began

..... Name of person in your school conducting study Grades Involved

..... Number of students involved Completed In progress Written report available

b. Name of educational research or study Date Study Began

..... Name of person in your school conducting study Grades Involved

..... Number of students involved Completed In progress Written report available

2. Please list below any educational research or studies in process or contemplated in your school during the 1962-63 school year. Please mention grade level and number of students involved.

a. Name of educational research or study Date Study Began

..... Name of person in your school conducting study Grade Students

b. Name of educational research or study Date Study Began

..... Name of person in your school conducting study Grade Students

3. Please name the staff member in your school you feel most competent and most interested in educational research, innovations or studies.

..... Name Title

USE ADDITIONAL SHEETS IF NECESSARY

Please include any completed research or study reports that are available.





MICHIGAN
DEPARTMENT OF PUBLIC INSTRUCTION
LANSING

LYNN M. BARTLETT
SUPERINTENDENT

April 15, 1965

Mr. _____
Superintendent of Schools
Street Address
City, State

Dear Mr. _____:

This is to introduce Mr. John W. Childs, who is a doctoral student and an E.D.E.A. Fellow at Michigan State University. He has undertaken a further study of the data reported in our Research Report No. 1 entitled, "Five Years of Change in the Public Elementary and Secondary Schools in Michigan." This report was the first large-scale study of the educational trends of the last five years conducted in this country.

Mr. Childs' study examines the process of change in Michigan schools and begins to evaluate alternative ways of measuring the change process. The Department of Public Instruction can obtain a measure of the validity of the findings in its study from the data he proposes to collect.

From the data collected in the original survey, Mr. Childs has selected your school for further study. He will be contacting you personally within the next few days to discuss the matter further with you and to answer any questions you might have. We would appreciate it very much if you would cooperate with him in his effort.

Sincerely,

LYNN M. BARTLETT
SUPERINTENDENT





INTERVIEW FORMAT

Section I:

ASK THE FOLLOWING QUESTIONS WITH RESPECT TO EACH ITEM
CHECKED BY THE SCHOOL DISTRICT IN THE FIVE YEAR SURVEY.

1. You have a copy of your responses on the Five Year Survey
of Change, are you still using the checked changes?

Elementary

Secondary

Jr. High

Sr. High



IF CONTINUED USE IS INDICATED:

2. What advantages do you find in the use of this practice?
(EACH PRACTICE RESPONDED TO ABOVE)

3. Are there any disadvantages?
- 



5. Can you reconstruct your experience during the period of time in which you were implementing any of the practices you have mentioned? In each case you had to make decisions. What information, feeling, rationale, etc. did you use to make the decision to adopt these practices?



Section II:

1. What new practices have you used since 1962?
(RECORD ANY PRACTICES THAT WERE ON THE ORIGINAL SURVEY
AS WELL AS ADDITIONAL PRACTICES)

2. What are the advantages in these practices over what
you were doing previously?

Advantage

Practice

Section III:

SPECIFIC QUESTION ABOUT EACH ITEM CHECKED

ELEMENTARY FORM

1. Have you brought in outside resource materials or persons to assist in making this change?

SECONDARY FORM

1. Have you brought in outside resource materials or persons to assist in making this change?

Jr. High School

Sr. High School

2. Have you had persons from other districts in to visit any of the above changes?

IF VISITORS:

3. How did the visitors react to this change or this new practice?

4. Have you, or members of your staff, visited other schools?



Section IV:

ADMINISTRATOR'S SELF-PERCEPTION OF HIS DISTRICT AS INNOVATIVE

1. Compared to all other school districts in the state, do you consider your district an innovative school district? That is to say, do you consider your district to be adopting an above-average number of new practices?

IF YES TO PRECEDING QUESTION:

2. Why do you believe that your district is able to pursue a more adaptive course than that of other districts?

IF NO,

3. Why do you believe that your district has not adopted an average or above-average number of new practices?

Section V.

REVISED A.P.S.S. "TIME SCALE" - 1965

	(1) Pupils affected today*	(2) Year of Introduc- tion	(3) Year Discon- tinued	(4) Point Value
	LEAVE BLANK IF NOT PRESENT			LEAVE BLANK
1. A remedial reading teacher is employed by the school district.				
2. A standardized test of mental ability is given each pupil twice before he reaches the seventh grade.				
3. Diagnostic tests in arithmetic are used to discover areas in which additional study and practice are needed.				
4. A room in the elementary school is used as a library.				
5. A course in personal typing is available. (Course limited to commercial students does not count here)				
6. Calculating machines are available to students. (Course limited to commercial students does not count)				
7. Pupils study the community through trips to such things as factories, newspaper plants, banks, etc.				
8. Exploratory courses to encourage students to explore given areas of knowledge are in the school curriculum.				
9. An exploratory shop course includes working with some or all of the following: wood, steel, sheet metal, copper.				
10. A library of motion picture films is maintained by the school system or co-operatively with other systems.				



Revised A.P.S.S. "Time Scale" - 1965

Practice	(1) Pupils affected today*	(2) Year of Introduc- tion	(3) Year Discon- tinued	(4) Point Value
	Leave Blank if Not Present			Leave Blank
11. A variety of reference books and other materials are used in addition to textbooks.				
12. A unit of study dealing with public education is a part of the high school curriculum.				
13. Elections for student offices are patterned upon adult practices using campaigns and ballots or machines.				
14. The school arranges productive work experience for students who receive pay and school credit.				
15. A career conference is held with a general session presenting the problems of getting and holding a job.				
16. Homemaking is offered for boys.				
17. Homemaking house, cottage, or apartment is provided.				
18. A school nurse is a member of the staff.				
19. Dental inspection is provided.				
20. A school camp is operated by the school district.				
21. "Behind the wheel" driver education is part of the school program.				
22. Pupils participate in safety programs in an annual check of hazards in school or community.				
23. Individual psychological tests are used when necessary to supplement group tests of mental ability.				

24.

25.

26.

27.

28.

29.

30.

31.

32.

33.

34.

Revised A.P.S.S. "Time Scale" - 1965

Practice	(1) Pupils affected today*	(2) Year of Introduc- tion	(3) Year Discon- tinued	(4) Point Value
	Leave Blank if Not Present			Leave Blank
24. The school has a positive program of elimination of factors responsible for the non-promotion of pupils.				
25. Records for each child are accessible to and <u>regularly</u> used by the teacher.				
26. The child's permanent record goes with him from the elementary school to the secondary schools.				
27. There is an organized guidance program, including the services of a psychologist.				
28. There is flexible grouping of children in elementary classrooms, grouping for reading and arithmetic.				
29. Moveable desks are provided for pupils in a regular classroom.				
30. Student officers budget and spend student funds with regulations agreed upon by students and faculty.				
31. The school has a radio or TV workshop which involves script writing, production, and actual broadcasting.				
32. The school keeps and uses a human resources file that lists citizens who serve as lay experts.				
33. The curriculum is organized around a core involving several fields of knowledge in an extended segment of the day.				
34. One or more groups of students make use of programmed texts and/or teaching machines.				



111
Revised A.P.S.S. "Time Scale" - 1965

Practice	(1) Pupils affected today*	(2) Year of Introduc- tion	(3) Year Discon- tinued	(4) Point Value
	Leave Blank if Not Present			Leave Blank
35. One or more subject areas have been treated in a comprehensive way to an instructional system design, combining or consolidating all materials and techniques of instruction.				
36. An instructional materials center has been established for the school system or in each building.				
37. An audiovisual program involving a full time administrator and staff is in operation. It provides most of the following kinds of technological tools and materials of instruction. Film, Filmstrips, Recordings (disc or tape), slides, production of graphic materials (overhead transparencies, charts, graphs, etc), realia, models, programmed instructional materials and devices, television reception facilities, closed circuit TV distribution, electronic teaching lab, listening facilities, etc.				
38. A programmed student response system for analyzing and evaluating instruction in use.				
39. The FSSC materials are in use.				
40. One of the new approaches to chemistry (and its specially prepared materials) is in use.				
41. One of the new approaches to biological sciences is in use. (BSCS, AIBS)				
42. One of the new approaches to mathematics is being used.				
43. A regular program of physical fitness is being conducted K-12.				

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Revised A.P.S.S. "Time Scale" - 1965

Practice	(1) Pupils affected today*	(2) Year of Introduc- tion	(3) Year Discon- tinued	(4) Point Value
	Leave Blank if Not Present			Leave Blank
44. One of the major English projects is in use.				
45. The audio-lingual approach to modern foreign languages is in use.				
46. One or more new programs in the social sciences are in use.				

*E. -(experimentally); O. -(occasionally); W. -(widespread).





OPINIONS ON SOCIAL AND PERSONAL QUESTIONS

We are interested in what the general public thinks and feels about a number of important social and personal questions. 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 people feel the same as you do.



Mark each statement in the blanks under the statement according to how much you agree or disagree with it. Please mark every statement. Use the following depending on how you feel in each case. Check only one blank.

Example:

I DISAGREE VERY MUCH	I DISAGREE ON THE WHOLE	I DISAGREE A LITTLE	I AGREE A LITTLE	I AGREE ON THE WHOLE	I AGREE VERY MUCH
3	2	1	1	2	3

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

3	2	1	1	2	3
---	---	---	---	---	---

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

3	2	1	1	2	3
---	---	---	---	---	---

There are two kinds of people in this world: those who are for the truth and those who are against the truth.

3	2	1	1	2	3
---	---	---	---	---	---

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

3	2	1	1	2	3
---	---	---	---	---	---

Of all the different philosophies which exist in this world there is probably only one which is correct.

3	2	1	1	2	3
---	---	---	---	---	---

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

3	2	1	1	2	3
---	---	---	---	---	---

The main thing in life is for a person to want to do something important.

3	2	1	1	2	3
---	---	---	---	---	---

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

3	2	1	1	2	3
---	---	---	---	---	---

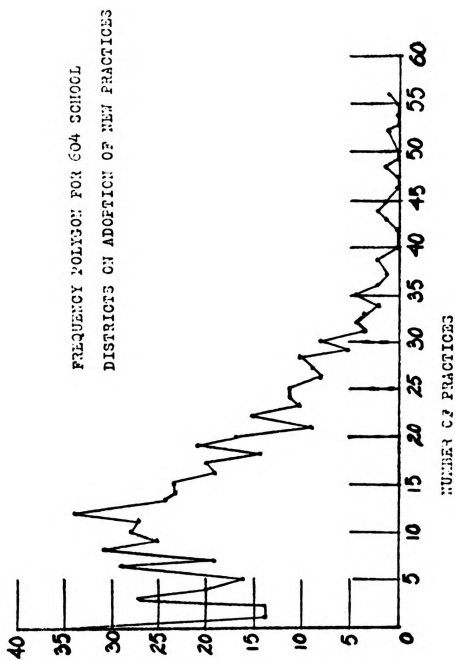
Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

3	2	1	1	2	3
---	---	---	---	---	---

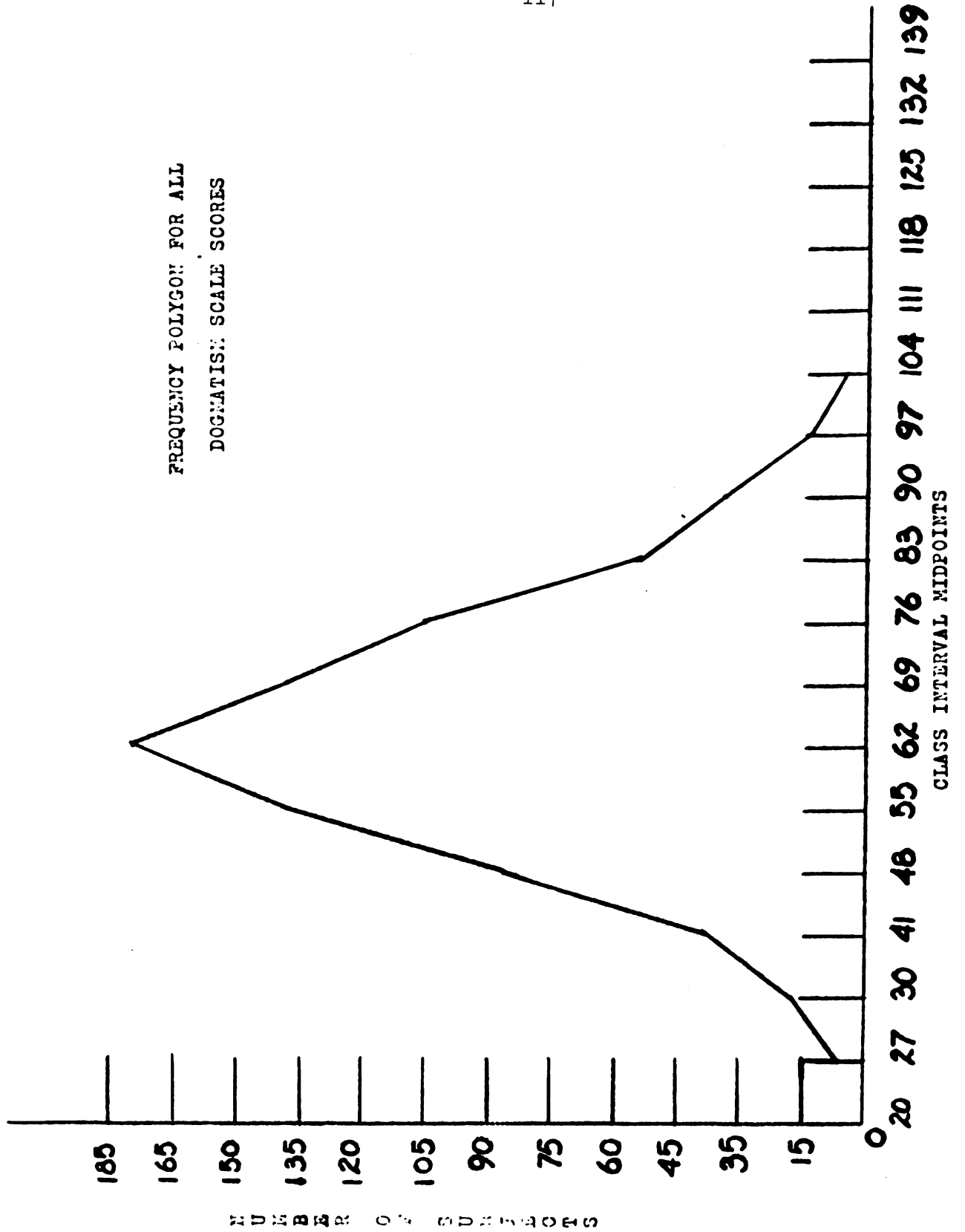




NUMBER OF SCHOOLS









TEACHER
FORM

This envelope contains a research instrument being tested and standardized. Your help in following the instructions carefully will be greatly appreciated.

1. Please complete the instrument some time during the school day and return it to the designated collection point within the next 48 hours.
2. In the interest of accuracy and reliability, please do not discuss the content of this instrument with your colleagues until after the 48 hour period has elapsed.

THANK YOU!

DO NOT PLACE YOUR NAME ON THE INSTRUMENT OR THE ENVELOPE.
RETURN THE INSTRUMENT TO THIS ENVELOPE & SEAL THE ENVELOPE.



To: Superintendents of Participating School Districts in the
Extended Study of Change in Michigan Schools.

From: Mr. John W. Childs, NDEA Fellow, Michigan State University,
Bldg. A-3, Room 18, East Lansing, Michigan.

Subject: General Instructions for Administration and Return of the
Research Instrument.

I. Contents of the Package of Materials left with the school district.

- A. _____ envelopes, each containing one copy of the
Research Instrument, marked TEACHER FORM.
- B. _____ envelopes, marked ADMINISTRATOR, each
containing one copy of the Research Instrument.
- C. One business envelope containing:
 - 1. Return postage from the Superintendent's office
to Michigan State University.
 - 2. Address sticker for returning test materials to
Mr. John W. Childs, Michigan State University,
Bldg. A-3, Room 18, East Lansing, Michigan

II. DISTRIBUTION

- A. Please contact each principal to notify him of the
participation of your school district in this
research project dealing with change in Michigan
schools.
- B. Please give the principal instruction sheets, and the
research instruments in envelopes sufficient for each
teacher he supervises (unless this can more easily be
accomplished through your central office).
- C. Give the principals and other administrators and
supervisor respondents the research instruments marked
ADMINISTRATOR.

III. COLLECTION

- A. It is requested that the collection point of the
research instrument in the sealed envelopes be
clearly specified to all respondents. If the
"Principal," "Principal's Secretary," etc. are as-
signed the duty of collection, the respondents should be
notified as to place and time of collection.



- B. All envelopes, used or unused, with the enclosed research instrument should be collected and checked against the total left with the school district. (See I. A. and B., CONTENTS).
- C. Do not retain any envelopes or instruments for absent teachers. All forms should be returned to your office within 48 hours at the latest. It is hoped that the 48 hour limit will result in better individual responses that may be less influenced by group discussion.

IV. MAILING

- A. The return package should include all the envelopes and research instruments. There should be one package. Postage and stickers are in the business envelope.
- B. If an alternate method of return is desired, please contact John Childs by phone, collect, Area Code 517-355-1150.

I wish to express my appreciation to you, your staff, and your teachers for the cooperation you have given in this project. An abstract of the results will be sent to you upon completion of the project.

John W. Childs
 NDEA Fellow



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