A COMPARATIVE STUDY TO DETERMINE THE RELATIONSHIP BETWEEN THE EXISTING PRACTICES OF SELECTED MIDDLE SCHOOLS AND STUDENT PERFORMANCE ON A STANDARDIZED ATTITUDINAL MEASURE

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSTIY
HENRY S. SIENKIEWICZ
1973

This is to certify that the

thesis entitled

A COMPARATIVE STUDY TO DETERMINE THE RELATIONSHIP BETWEEN THE EXISTING PRACTICES OF SELECTED MIDDLE SCHOOLS AND STUDENT PERFORMANCE ON A STANDARDIZED ATTITUDINAL MEASURE

presented by

Henry S. Sienkiewicz

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Education

William F. Walsh
Major professor

Date February 8, 1973

O-7639

ABSTRACT

A COMPARATIVE STUDY TO DETERMINE THE RELATIONSHIP BETWEEN THE EXISTING PRACTICES OF SELECTED MIDDLE SCHOOLS AND STUDENT PERFORMANCE ON A STANDARDIZED ATTITUDINAL MEASURE

Henry S. Sienkiewicz

This study was conducted 1) to determine and compare the relationship between suggested practices observed in ten randomly selected middle schools scoring in the lowest quartile and ten randomly selected middle schools scoring in the highest quartile on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7, 2) to observe and describe the degree to which suggested practices were implemented in ten ransomly selected middle schools scoring in the lowest quartile on the student attitude test, 3) to observe and describe the degree to which suggested practices were implemented in ten randomly selected middle schools scoring in the highest quartile on the student attitude test.

A jury selected two authorities, William Alexander and Donald Eichorn, from whose works an interview questionnair was constructed. In addition, questions were included on school size, social classification of the school population and events which may have affected student attitude.

The ten randomly selected Michigan middle schools in each of the two quartiles were visited and responses were elicted and recorded for each of the survey items and a composite analyses of the survey results was made. Using contingency tables at the .05 level of significance, an analysis was drawn of the practices of the schools scoring either low or high on student attitudes. Comparisons of these scorings were made as were the development of individual item profiles by the use of these tables.

A simple correlation was used in questions asked administrators and teachers in order to indicate the similarity or lack of similarity in perception to five identical practices. The correlation was also used to evaluate five responses reported by administrators and students.

Findings

The findings of the study indicated that there were no significant differences in the practices followed by middle schools scoring in the lowest quartile and highest quartile on the state test of student attitude. These practices encompassed the areas of staff and organization; student activiteis; guidance; instructional program; school plant and equipment.

There also were no significant differences between Michigan middle schools scoring low and high and the school size, social class of the student populations and events which may have affected student attitude.

Schools scoring in the lowest and highest quartiles on student attitude only implemented slightly more than one-half of the practices recommended by the national middle school authorities.

Teachers and students agreed with administrators in their perception of the practices of their respective middle schools.

A COMPARATIVE STUDY TO DETERMINE THE RELATIONSHIP BETWEEN THE EXISTING PRACTICES OF SELECTED MIDDLE SCHOOLS AND STUDENT PERFORMANCE ON A STANDARDIZED ATTITUDINAL MEASURE

By

Henry S. Sienkiewicz

A THESIS

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

DOCTOR OF PHILOSOPHY

College of Education

1973

ACKNOWLEDGMENTS

The writer wishes to express his sincerest appreciation to Dr. William Walsh, who, as chairman of his doctoral committee, was a constant guide and source of encouragement. His counsel and genuine interest made the completion of the program a possibility and finally a reality.

Appreciation is also extended to the other members of the committee, Dr. William Joyce, Dr. Ann Olmsted and Dr. Roy Wesselman, for their professional advice and assistance throughout the program.

A special expression of gratitude is made to my colleagues at the Warren Woods Public Schools for their support during the writer's studies.

Finally, in appreciation for their patience and encouragement a special thanks to the members of my family, my wife Janet and children, Suzanne, John, and Craig.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
LIST OF APPENDICES	xi
Chapter	
I. INTRODUCTION	1
Statement of the Problem	5
Need	6
Definition of Terms	8
Assumptions of the Study	9
Limitations of the Study	9
Objectives	10
Procedures	11
Survey Instrument	11
Selection of Study Schools	12
Statistical Treatment	13
Conclusions and Recommendations	13
II. REVIEW OF THE LITERATURE	15
A Search for Identification	16
A Semantic Distinction	16
Definitions of Middle Schools	23
Rationale for Its Existence	25
The Predecessor: The Junior High School	25
Physiological Basis for Middle School	27
Psychological Basis for Middle School	29
Social Science Basis for Middle School	31
Physiology, Psychology and Social Science are Integrated Reasons	33
A New Clientele: Transescents	34
The Current Status of the Middle School	38
Theoretical Basis	38
Studies of Middle School	42
Studies Involving Planning and Preparation	45
Studies of Student Achievement and Attitudes	48
Summary	51

Chapter Page

III. DESIGN OF THE STUDY 54

The Selection of the Authorities by the Jury. 54
Alexander and Eichorn Selected. 55
The Development of the Questionnaire . . . 56
A Fixed-Alternative Interview Instrument . 57
An Attempt at Clarity of Interpretation . 59
The Need for Special Treatment Questions . 59
Pre-testing 61
The Selection of the Sample 61
The School Code Master List Reviewed . . 62
Random Selection of Sample 63
Community Type 64
Visitations to the Sample Schools 66
Interview of the Administrator 66
Interview of the Teacher 67
Interview of the Student 68
Observation of Facility and Equipment . . 68
Length of Interviews and Observations . . 68
Null Hypotheses 69
Objectives of this Study. 69
Statistical Treatment Used 71
The Test Statistic: Chi-square 71
Description of Schools Studied 72
Coefficient Correlations 72
Summary 73

IV. ANALYSIS OF THE DATA 74

Objectives of the Study 74
Contingency Tables 75
Authorities Suggested Practices 75
Analysis of Data 76
Analysis of Data on Staff and Organization . 76
Summary of Staff and Organization . . . 83
Analysis of Data on Student Activity Program. 84
Summary of Student Activity Program . . . 89
Analysis of Data on Guidance 89
Summary of Data on Guidance 92
Analysis of Data on Instructional Program . 92
Summary of Analysis of Instructional Program 104
Analysis of Data on School Plant and Equipment 105
Summary of Analysis of Data on School Plant and Equipment 113
Analysis of Data of Special Treatment Questions 114

Chapter Page

Analysis of Data on Question of Teachers and Students 118
Teachers 118
Students 119
Summary 120
Null Hypothesis 120
Contingency Coefficient 121
Degree of Implementation of the Suggested Practices 121

V. SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS 123

Summary 123
Findings 125
Conclusions 128
Recommendations 129

BIBLIOGRAPHY 132

APPENDICES 141

LIST OF TABLES

Table		Page
1.	Jurors Ranked Nominations for the Three Most Outstanding Authorities on the Middle School .	56
2.	Scores and Population of Sample Schools in Lowest and Highest Quartiles	63
3.	Sample Community Type	65
Contingency Tables for Practice:		
4.	Staff Members Generally Being Assigned to the Total Middle School	78
5.	Contingency Table for Practice: The Faculty Having a Proportionate Number of Males . . .	79
6.	Providing a Reading Specialist in the School .	79
7.	Providing a Modern Foreign Language Specialist in the School	80
8.	The Number of Hours of Orientation Provided for Incoming Faculty Members	81
9.	The Ratio of Students to Total Professional Staff	83
10.	The Percent of the Events Which Were Large Group Participation Activities as Opposed to Couple Type Functions	85
11.	Whether There is a Student Elected Government .	86
12.	Interest Activity Programs Were Schedules as Part of the School Day	87
13.	Separate Instructional Units Ever Developing Their Own Social Activities	87
14.	Whether There is a Student Service Committee .	88

Table		Page
15.	Whether There Was Interscholastic Athletic Competition	88
16.	The Ratio of Students to Counselors	90
17.	Each Student Had a Group and a Teacher Which He Identified as His School Home	91
18.	Students Being Grouped by the Same Sex in Practical Arts	93
19.	The Percent of the Average Student's Time Spent on Independent Study	95
20.	What Part of the Average Student's Day was Spent in Classes That Were Team Taught	95
21.	The Portion of the Total Curriculum Which Can be Termed Non-Graded Continuous Progress Programs	96
22.	The Curriculum Developed Around the Large Concept Areas of Mathematics, Science, Language and Social Studies	98
23.	Whether Individual Student Progress Reporting System Was Used With Parents in Contrast to Pass/Fail Grading Systems	99
24.	The Percent of Students Instructed in Discovery Methods	100
25.	A Program Aimed at Developing Personal Values	101
26.	The Students Participated on a Regular Basis in Planning Daily Instructional Activities	102
27.	There Being a Cultural Studies Program	103
28.	There Was an Established Teacher Supervised Study-Skills Center	104
29.	Allowability of Groups of Students to Work Cooperatively on Research Projects in an Area of the Resource Center Without Restriction on Conversation and Discussion	106
30.	Slides, Filmstrips, or Television Can Be Viewed in the Resource Center	107

Table		Page
31.	Listening Devices Were Provided in the Resource Center	108
32.	The Interior of the School Being Well Illuminated	109
33.	The Interior of the School Being Aesthetically Pleasing	109
34.	Classroom Provided with Adequate Equipment for Student Experiences in the Content Field Being Studied	110
35.	Space of Varying Size Being Available for Use by Large and Small Groups	111
36.	Spaces for Individual Study Being Provided	112
37.	Space for Private Conference Between Pupil and Teacher Being Provided	112
38.	Facility Provides Wings, Clusters or Other Arrangements Which Permit Decentralization	113
39.	The Enrollment in the School	114
40.	The Percent of Student Population in the Lower-Lower Sociological Class	115
41.	The Percent of Student Population in the Upper-Lower Sociological Class	115
42.	The Percent of Student Population in the Lower-Middle Sociological Class	116
43.	The Percent of Student Population in the Upper-Middle Sociological Class	116
44.	The Percent of Student Population in the Lower-Upper Sociological Class	116
45.	Providing a Librarian in the School	168
46.	Providing an Art Specialist in the School	168
47.	Providing a Music Specialist in the School	169
48.	Providing a Home Arts Specialist in the School	169

Table Page

49. Staff Including Teachers with Elementary Certification 170

50. Teachers Being Subject Specialists in One or More Areas of Knowledge 170

51. Providing a Guidance Counselor in the School . 171

52. Providing a Psychologist or Diagnostician at the Building or District Level 171

53. What Hours per Year Were Used for Inservice to Develop Skill in Using a Variety of Teaching Strategies and Methods for the Middle School . 172

54. How Many After School Social Events Were Provided per Year per Youngster 172

55. Whether Students Are Involved in Developing Their Own Activity Programs 173

56. Whether There Was an Intramural Sports Program . 173

57. Teachers Assumed Some of the Responsibility for Guidance by Being Teacher Counselors . . . 174

58. Equivalent Grade Level of the Student Population in the School 174

59. The Percent of Students Completing the Program in the Allocated Time 175

60. To the Percent of the Students' Program Which Was Exploratory 175

61. To the Percent of the Students' Program Which Was Elective 176

62. The Part of the School Day Spent on the Basic Large Concept Areas of Math, Science, Language and Social Studies 177

63. The Frequency of Changes in Students' Schedules. 177

64. The Physical Education Program Providing Strong Emphasis on Recreational Activities 177

65. Students in Grades Seven and Eight Being Assigned Departmentalized Classes 178

Table		Page
66.	Students Being Grouped Homogeneously	178
67.	Students Being Grouped By the Same Sex in Physical Education	179
68.	Students Being Administratively Regrouped During the Year	179
69.	Having a Formal Reading Program Available for Students in Need	180
70.	Students in Grades Five and Six Being Assigned to Self-Contained Classrooms	180
71.	High School Students Being Used as Tutors	181
72.	Whether Final Examinations in Any Subject Areas Were Given	181
73.	The Physical Education Program Not Requiring Group Showers	182
74.	Students Being Grouped By the Same Sex in Fine Arts	182
75.	Specialized Laboratory Facilities Being Provided for Home Economics	183
76.	Specialized Laboratory Facilities Being Provided for Art	183
77.	Specialized Laboratory Facilities Being Provided for Music	184
78.	Specialized Laboratory Facilities Being Provided for Industrial Arts	184
79.	Specialized Laboratory(ies) Facilities Being Provided for Science	185
80.	There is a Resource Center in the School	185
81.	The Interior of the School Being Well Maintained	186
82.	The Exterior of the Building Being Well Maintained	186
83.	Any Event in 1970-1972 Which Would Have Significantly Affected Student Attitude	187

LIST OF APPENDICES

Appendix		Page
A.	Titles of Jury Members' Doctoral Dissertations from Michigan State University	142
B.	Letter of Request to Jury Members	144
C.	Ballot for Selecting Outstanding Authorities in the Middle School	146
D.	Questionnaire on Suggested Practices of the Middle School	148
E.	Questions in the Student Attitude Section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7	163
F.	Listing of Michigan School Districts Classified by Major Community Type Served	165
G.	Contingency Tables	167
H.	Percentage Implementation Levels	188

CHAPTER I

INTRODUCTION

Within the last decade the United States has witnessed the evolution of a new type of educational institution, the middle school. This instructional arrangement generally encompassing grades six through eight has attempted to meet the learning needs of preadolescents and early adolescents by utilizing a range of recent learning approaches such as team teaching, independent study, discovery methods, and continuous progress programs. These approaches are implemented by facilities which provide instructional spaces and ample laboratories. The student experiences are far more flexible than those enjoyed in traditional junior high schools. Science, music, and vocational programs, for example, are now provided adequate room necessary for diverse activities and enjoy greater community visibility.

One of the major advantages of the middle school is the opportunity it provides for development of pupil attitudes and experiences in decision making. Proponents of this concept feel that the middle school encourages through its flexibility the fulfillment of aesthetic, physical and intellectual interests of students.

Of particular interest to education observers is the middle school's provision for the psychological, emotional, and intellectual needs of pre- and early adolescents. Oestreich points out that the middle school ". . . is not a mini-high school nor is it an advanced elementary school, but is, in fact, a school setting specifically designed, planned, and organized to meet the special social, educational, custodial, and physical needs of pre-adolescents."[1] There are, however, some authorities such as Popper who maintain that ". . . the junior high school is institutionally America's Middle School."[2] Riegle, while writing in support of the middle school does recognize that the present middle school program ". . . is based on principles that are remarkably similar to the basic tenets used to justify the junior high school."[3] Yet, in fact, neither the tenets nor the principles of the middle school distinguish it from the junior high school. Rather the practices which are employed to

---

[1]James F. Hertling and Howard G. Getz, eds., Education for the Middle School Years: Readings (Glenview, Illinois: Scott Foresman and Company, 1971), p. 229.

[2]Samuel Popper, The American Middle School (Waltham, Massachusetts: Blaidsell Publishing Company, 1967), p. xi.

[3]Jack D. Riegle, "A Study of Middle School Programs to Determine the Current Level of Implementation of Eighteen Basic Middle School Principles" (unpublished Ph.D. dissertation, Michigan State University, 1971), p. 20.

implement them are the distinguishing characteristics. Alexander emphasizes one criticism of implementation of the junior high school program by observing that ". . . the most publicized and valid indictment of the program of the junior high school is that it mimics that of the senior high school."[4]

The middle school, as currently operated, does not limit itself to a restrictive model, but includes in its practices suggested programs of both elementary and secondary learning approaches. While some of these newer practices were originally implemented in elementary and secondary schools, the transfer and utilization of the various practices often becomes unique in its configuration when introduced at the middle school level. It is at this educational point, in the middle school, that the child-centered philosophy at the elementary school meets the more content oriented philosophy of the high school. Emmett L. Williams states the "One shared characteristic of the emerging middle school is an attempt to combine the best features of the self-contained idea of the elementary school with the best features of the specialization of secondary schools."[5] He further indicates that the

---

[4]William Alexander, et al., The Emergent Middle School (New York: Holt, Rinehart and Winston, Inc., 1968), p. 52.

[5]Emmett L. Williams, "The Middle School Movement," Today's Education, XVII (December, 1968), 41.

middle schools have adopted many of the ". . . educational innovations of the 60's--team teaching, non-grading, flexible scheduling, programmed instruction, laboratory facilities, and a host of newer media."[6]

As in the elementary school, the middle school places greater emphasis on the emotional adjustment of its students. Donald Eichorn insists that it is essential that an environment be created in middle schools which will aid in the reduction of emotional tension.[7] In order to achieve this, he, along with other writers, suggests that it is important to have a wide range of activity programs appropriate to the maturity level of preadolescents and early adolescents.[8]

The middle school, as perceived by some of its supporters, emerges as a unique institution, differing from the elementary and high school in its use of the selected practices and facilities previously developed at either of the two levels. It differs from its predecessor, the junior high school, which leaned most heavily on the high school for its day-by-day practices and procedures.

When the philosophy and practices of the middle school are implemented in communities today, they usually

---

[6] Ibid., p. 42.

[7] Donald Eichorn, The Middle School (New York: Center for Applied Research in Education, Inc., 1966), p. 37.

[8] Ibid., p. 88.

present a picture of a school which should be very appealing to most pre- and early adolescents. Yet, the problem persists that middle schools vary in the degree to which they implement the suggested philosophy and practices. Riegle points out that,

> The rapid increase in the number of schools labeled middle schools has not been accompanied by a high degree of application of those principles considered by authorities in the field to be basic to middle school education.[9]

Examination of the Problem

The problem examined is three-phase: (a) to identify the practices and procedures suggested by selected authorities for implementing the philosophy of the middle school; (b) to determine the utilization of these practices and procedures in the State of Michigan in middle schools scoring low and high on student attitude as measured by student attitude on the 1971 Michigan Assessment Test of Basic Skills, Grade 7; and (c) to attempt to determine whether there is a relationship between the practices and procedures that can be identified as being present in the schools and the student attitudes that are measured and reported by the statewide administered instrument.

---

[9]Riegle, op. cit., p. 67.

Need

The middle school has emerged within the last decade and because of its rather recent development there remain many gaps between its practices and scientific verification of their value. It is imperative that studies be initiated which attempt to identify the practices and to select those which have a positive impact on pre- and early adolescents. Popper contends that the middle school theoretically began at the start of the century.[10] Yet the junior high schools which evolved were quite different in practices from those espoused by the original theorists. Similarly, the practices as recommended by middle school theorists should now be examined to determine the degree to which they have been followed, and in addition, attempts should be made to determine the impact middle schools have on students.

The attitudes which students have toward middle school is one outcome of the program and procedures which can be examined. Alexander maintains that, "Pupils in the middle school will have more favorable attitudes toward schools than will pupils in conventional schools."[11] He thus suggests that good attitudes toward school are an anticipated outcome of the procedures and practices of the middle school. An examination of the practices and

---

[10]Popper, op. cit., p. 9.

[11]Alexander, et al., op. cit., p. 141.

procedures of middle schools as related to attitudes is justified because only by such examination will it be possible to identify the influence of both suggested and actual middle school practices and procedures upon student attitude.

The literature strongly suggests that the socio-economic background of the student will have a distinct impact upon his attitude toward school. It is even intimated that this factor may affect some student attitudes despite the worth of the procedures and practices, which may be operative in a school. Glasser, a psychiatrist who has written extensively in this area, points out that,

> Surprisingly enough, failing preadolescent youngsters in the central city express a liking for school; even though they fail, they are in a well-ordered place where they are well-treated, a welcome relief from home in many cases. In contrast, suburban children in schools with every educational opportunity often say that they hate school because it is dull and repetitious, and it is not better than home.[12]

It becomes imperative then to examine carefully the practices and programs as they relate to the varied socio-economic backgrounds of the students studied, and, in turn, to relate them to the attitudes expressed by these students. By including this factor in the study

---

[12]William Glasser, Schools Without Failure (New York: Harper Row Publishers, 1969), p. 41.

it may become easier to make inferences about the relationship between the practices of the middle school and student attitudes.

Definition of Terms

The definition of terms has been designed to assist in the interpretation and understanding of the study.

1. Preadolescent: A youth who is in the period of human development which encompasses late childhood and generally includes those in ages ten to twelve.

2. Early Adolescents: A youth who is in the period of human development which is at or after the onset of puberty and generally includes those in ages thirteen and fourteen.

3. Transescent: A youth who is in the period of human development which begins in preadolescence, prior to the onset of puberty, and extends through early adolescence.

4. Middle School: A separate school unit generally offering an education program specifically designed to meet the unique needs of transescent youth, whose age span results in the inclusion of grades five or six through eight.

5. Junior High School: A separate school unit generally offering an education program for grades seven to nine.

6. 1971 Michigan Assessment Test of Basic Skills, Grade 7: A test administered to all seventh graders in the State of Michigan as a part of the Michigan Educational Assessment Program, initiated by the State of Michigan Board of Education. Its purpose is to provide educators and citizens information about aspects of Michigan's public educational system, including school resources, student/school performance in basic skills, student background and student attitude toward school.

Assumptions of the Study

This study assumes that the practices espoused by the authorities are consequential to the middle school and appropriately unique in configuration. Likewise it was assumed that some of these practices, when implemented, will have an impact upon student attitude toward school.

The study also assumed that the local school authorities can accurately identify their practices as they existed at the time of the 1971 Michigan Assessment Test of Basic Skills, Grade 7. While these practices may not be identified as clear causes for student attitudes, certain inferences about causal relationships may be drawn.

Limitations of the Study

This study is limited to randomly selected middle schools in Michigan scoring in the highest and lowest

quartile of middle schools on the 1971 Michigan Assessment Test of Basic Skills, Grade 7's section on student attitude.

This study is limited to the difference of attitude of middle schools as measured on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7. While the practices identified are primarily those considered significant by authorities in the field, there will be those in the field of education who would consider other practices as more significant for the middle school.

While the study did attempt to identify some possible influences on the attitudes of students, such as socio-economic status, it was primarily limited to viewing attitudes toward schools as an outcome of the practices followed in the middle schools studied.

Objectives

The objectives of this study are threefold:

1. To compare and attempt to determine the relationship existing between suggested practices as observed in ten randomly selected middle schools scoring in the highest quartile of middle schools and ten randomly selected middle schools scoring in the lowest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

2. To observe and to describe the degree of implementation of suggested practices in ten randomly selected middle schools, scoring in the lowest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

3. To observe and to describe the degree of implementation of suggested practices in ten randomly selected middle schools scoring in the highest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

Procedures

In order to identify the practices and procedures for implementing the philosophy of the middle school, a jury was formed of (a) doctoral program graduates of Michigan State University whose dissertations focused upon the middle school, and (b) a principal of an exemplary middle school and part-time faculty member at Michigan State University. This jury was asked to identify three outstanding nationally recognized authorities of middle school.

Survey Instrument

Once identified by the jury, the practices suggested by these authorities were featured in the

construction of a survey instrument. Where ambiguities of interpretation may exist with some practices e.g., the term team teaching, a definition of the term was used so that some parameters could be drawn for the interviewee. This assisted in consistency of interpretation for responses throughout the study.

Although the practices suggested by the authorities comprised the major portion of the survey, two other short sections were included. The first of these related to the socio-economic background of the transescents of the middle schools studied. It was included in the study in view of its possible influence on student attitude toward school.

The second short section of the survey instrument was a section which indicates any unusual factors which could have an observable effect upon student attitude at a school. Such factors might include a prolonged and bitter teachers' strike preceding the administration of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

Selection of Study Schools

After the construction of the survey instrument the study attempted to determine the utilization of these practices and procedures. The first course of action was to determine the rank of each middle school in the State

of Michigan as identified on the 1971 Michigan Assessment Test of Basic Skills, Grade 7. This rank order was derived from the scores on the test as reported on the section entitled "Attitude Toward School."[13] The top and bottom quartiles of all middle schools were identified and from these groupings a random selection of ten representative middle schools in Michigan was made from both the bottom and top quartiles.

Statistical Treatment

In order to determine whether there was a significant degree of relationship between school practices and recommended procedures, each of the twenty randomly selected schools was visited by the author. Responses were elicited and recorded for each of the survey items and a composite analyses of the survey results was made. Using contingency tables, an analysis was drawn of the practices of the schools scoring either low or high on student attitudes. Comparisons of these scorings were made as were the development of individual item profiles by the use of these tables.

Conclusions and Recommendations

Upon completion of the analysis, conclusions and recommendations were drawn concerning the relationship

---

[13] 1970-71 Michigan Education Assessment Program, "Local District Report." (Spring 1971, Report Published by the Michigan Department of Education).

between practices recommended in the literature and those identified as prevailing in the schools. The former were those selected in the proposed treatment of the bottom and top quartile on the student attitude section of middle schools on the 1971 Michigan Assessment Test of Basic Skills, Grade 7. Results of this study should assist educators in identifying present practices and identifying future ones which will encourage more desirable attitudes toward the education of transescents in the middle school. The results of this study should assist educators in assessing the effects of certain practices on student attitudes and identify practices followed in Michigan middle schools.

CHAPTER II

REVIEW OF THE LITERATURE

As a unit of organization, the middle school is one of the most interesting recent attempts to develop educational compatibility with the fields of behavioral and social science. The organization concept is especially pertinent because of the emerging demands of preadolescent youth for educational accommodation of societal change.

The recency of the middle school concept per se tends to forestall comprehensive research into philosophy, implementation, and future role. Much of the available research is subjective and isolated. Long-term evaluation procedures have been largely ignored. However, there are significant conclusions evolving which will help educators understand the perplexing reaction of youth to the middle school organization.

Researchers concerned with the middle school concept must recognize the newness of the movement and the general lack of substantive information available on the topic. In an attempt to overcome this problem Chapter II will encompass a wider scope of the middle school theory and research

than may ordinarily be anticipated in a review of pertinent literature.

A Search for Identification

A Semantic Distinction

The middle school has an identity problem. No universal definition has been accepted by American education. Although championed by many as a unique educational innovation, some authorities contend that the middle school is simply another variation of the junior high school.

Samuel Popper indicates that semantics represent the only difference between the junior high and middle school.[1] Supporting this interpretation is a study by Charles Forst. He points out that "the middle school organization in the State of Maryland has made little or no significant change in curriculum from the junior high school and therefore it is different only in name."[2] Constantine also found the curricula of junior high and middle schools to be generally similar in all respects--including teacher-pupil classroom behavior.[3]

---

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

[2]Charles Forst, "A Study of the Middle Schools in the State of Maryland as Compared to Selected Junior High Schools Within the State" (unpublished Ph.D. dissertation, George Washington University, 1969), pp. 119-120.

[3]Peter Constantine, "A Study of Differences Between Middle School and Junior High School Curricula and Teacher-Pupil Classroom Behavior," Dissertation Abstracts, 30:614-615, August, 1969.

Harris analyzed twelve selected middle and junior high schools and found few differences in instructional organization, academic programs, teacher classes, and student activities. His findings, in fact, indicated that middle and junior high schools were more alike than different.[4]

Gatewood conducted a study comparing junior high and middle schools in Illinois, Indiana, Kentucky, Michigan, and Ohio. He attempted to determine how the middle and junior high schools differed in their perceptions of function as well as to compare organizational structures and instructional processes. The study concluded that, although there was similarity in perception of function, there were differences in vocational programs, school government, guidance, and elective course structure.[5] Gatewood also found that team teaching, group instruction, flexible scheduling, and independent study were widely used by both middle and junior high schools. "Middle schools and junior high schools are more similar than

---

[4]Dale E. Harris, "A Comparative Study of Selected Middle Schools and Selected Junior High Schools" (unpublished Ph.D. dissertation, Ball State University, 1968), pp. 161-163.

[5]Thomas Earl Gatewood, "A comparative Study of the Functions Organizational Structure, and Instructional Process of Selected Junior High Schools and Selected Middle Schools" (unpublished Ph.D. dissertation, Indiana University, 1970), pp. 271-272.

different in terms of organizational structure and instructional process."[6]

While Popper and others contend that the middle school is basically the same as the junior high school, Post criticizes the middle school movement from a different viewpoint. Admittedly an advocate of the junior high, he finds efforts to reorganize grades around suggested middle school patterns counter to contemporary educational practices:

> A move to shift grades from one institution to another hardly seems worthy of consideration when we are on the verge of beginning to understand the teacher-learner relationship, and when fundamental changes in the nature of teaching could result. Another realignment of grades seems ridiculous when the graded school itself may be on its way out.[7]

The middle school concept has been subjected to criticism because of implementation and definition problems. These inherent difficulties, similar to those which accompany development of any new organizational concept, warrant serious consideration.

William Alexander's statement, however, remains a basic tenet for those who maintain that the middle school is unique. He claims that "The emergent middle school is more than merely a reorganized junior high

---

[6] Ibid., p. 270.

[7] Richard L. Post, "Middle School: A Questionable Innovation," The Clearing House, XLII (April, 1968), 486.

school."[8] Other recently conducted research also indicates that more than semantic distinctions distinguish the middle school from the junior high school. Davis in a study comparing 35 middle and junior high schools in New York State, found the following differences:

1. The middle schools do permit some departmentalization in grades five and six.
2. In most instances both junior high and middle school administrators recommend removal of the ninth grade.
3. The middle schools are less likely to have interscholastic sports, cheerleaders, marching bands, night dances, pep assemblies, school annuals, and honor societies.
4. Middle schools encourage the use of specialists in grades five and six.
5. No significant differences exist in facilities.
6. Middle schools had significantly more flexible scheduling, team teaching, and independent study.
7. There was no significant difference in ability and achievement grouping in the paired schools.
8. Guidance programs in the junior high schools were superior to the programs of the middle schools.

---

[8]Alexander, et al., op. cit., p. 4.

Middle school administrators in this study appeared to be making determined efforts to extensively use many of the structural advantages outlined by Davis.[9]

Davis found junior high guidance programs superior. However, he also found clear differences and implied advantages for guidance in the middle school program. These differences generally included the implementation of current educational thought in middle school curricular and co-curricular programs.

Dilg, in a similar study, found middle school facilities and materials superior to those of the junior high. Analysis of his data indicates that the middle school is accompanied by curricular improvement for emerging adolescents. The middle school attempts to provide a flexible program that will better meet the needs of the learner through:

1. improved facilities and materials for learning;
2. more and better teacher-pupil planning;
3. a phase-in schooling that will serve a transition between self-contained and departmentalized classrooms;
4. a curriculum that will change as the learners' society changes;

---

[9]Edward I. Davis, "A Comparative Study of Middle Schools and Junior High Schools in New York State" (unpublished Ph.D. dissertation, University of New Mexico, 1970), pp. 129-131.

5. greater opportunities for learners to make choices in objectives, content of subject matter, activities for learning, and instructional materials;

6. greater program continuity in the total K-12 program;

7. greater amounts of individualized instruction;

8. greater participation of the middle unit in vertical and horizontal curriculum planning; and,

9. opportunities for teachers to plan educational experiences for learners, thus the utilization of the team teaching organizational approach.[10]

While Dilg and Davis cannot completely refute the critics of the middle school, they do reflect a type of school structure which attempts to more adequately serve a child at a critical point in his development. Proponents and theorists of the middle school recognize that some criticize the middle school movement as nothing more than a name change. Atkins unequivocally counters such criticism of the middle school:

> Properly interpreted, the middle school movement is more than a mere change in name, another shifting of grades, or different organizational arrangement--it is a fundamental bid to reassert its independence from both the elementary and the secondary school. It belongs to neither; it has an integrity of its own derived from the special needs of the age group it serves. . . . The uniqueness

---

[10]Charles Dilg, "The Middle School As a Curriculur Improvement for Emerging Adolescents--A Descriptive Study" (unpublished Ph.D. dissertation, State University of New York, 1970), pp. 132-135.

> of the middle school is not so much a matter of organization, of courses, of grouping, of schedules, or of staffing, as it is a matter of attitude, of expectation, of sensitivity, and of perception.[11]

In Atkins' view the middle school movement is not merely a reorganizing of the junior high school; rather, it is a fundamental recognition of the distinctiveness of the preadolescent and early adolescent learner. Atkins does not dismiss the impact of current practices. Instead he sees them as a manifestation of appropriately assessing this group of learners. He asserts that:

> Realistic pupil appraisal leads to re-examined school practices and implies a more significant change than merely bringing together the so-called elementary and secondary approach to teaching at the middle school level. It is not a combination; it is a reconstruction.[12]

Atkins is not alone in his belief that the middle school serves specific needs of its learners. Batezel indicates that:

> The middle school ought to exist as a distinct, very flexible, and unique organization tailored to the special needs of preadolescent and early adolescent youths. It ought not to be an extension of the elementary nor seek to copy the high school. The middle school ought to provide an environment where

---

[11] Neil P. Atkins, "Rethinking Education in the Middle," Theory Into Practice, VII (June, 1968), 119.

[12] Ibid., p. 119.

> the child, not the program is most important and where the opportunity to succeed exists.[13]

The emphasis is on the learner in the middle school, a position that critics of the middle school frequently fail to acknowledge. In attempting to implement a child-centered approach to school experiences, the middle school represents more than an organizational unit. In fact, the middle school appears to be an outgrowth of a philosophy of education relating directly to the needs of transescents.

Definitions of Middle Schools

Some of the criticism leveled at the middle school may be an outgrowth of the inadequate definitions proponents provide. In their efforts to briefly and clearly define its functions, they have further contributed to the middle school's identity problem. Most writers have reached general agreement only as to the students it serves. Murphy sees the middle school as ". . . a school between elementary and high school housed separately, and ideally, in a building freshly designed for its purpose, and covering at least three of the middle school years, beginning with grades 5 or 6."[14] Neal Nickerson agrees:

---

[13]George Batezel, "The Middle School: Philosophy Program Organization," The Clearing House, XLII (April, 1968), 487.

[14]Judith Murphy, Middle Schools (New York: Educational Facilities Laboratories, 1965), p. 6.

"In my mind it's a separate building for grades 5, 6, 7, and 8 with appropriate program for students in these grades."[15]

Another prominent theorist on the middle school, William Alexander, defines it as:

> . . . a school providing a program planned for a range of older children, pre-adolescents, and early adolescents that builds upon the elementary school program for earlier childhood and in turn is built upon by the high school's program for adolescence.[16]

Murphy, Nickerson, and Alexander all agree on the student population to be served by the middle school. Beyond that point of agreement it is very difficult to relate their philosophies to Atkins'. It is only by thorough study that the reader can get a broadened, accurate, and completely defined view of the middle school . . . for middle school is largely a philosophy of pre-adolescent and early adolescent education. This philosophy, of course, manifests itself through particular practices which it finds to be most valuable to the middle school learner. It follows that the middle school exists solely for this reason. The middle school's identity should be determined by the degree to which these practices can be identified and the degree to which they are followed.

---

[15]Neal G. Nickerson, Junior High Schools Are On the Way Out (Danville, Illinois: The Interstate Printers and Publishers, Inc., 1966), p. 10.

[16]Alexander, et al., op. cit., p. 5.

Dilg and Davis use this premise to present their cases for the unique identity of the middle school.

Rationale for Its Existence

The Predecessor: The Junior High School

While it is possible to give the middle school an identity of its own, it is not possible to describe its emergence without first examining the junior high school. Middle schools generally replace junior high school organizational patterns. Consequently, some examination must be made of that which has been supplanted.

The junior high school arose in a society which was feeling the full impact of industrialization and urbanization. Secondary education had taken on new importance. This "new" society required formal education for vocational preparation and replacement of the education formally provided by the extended family. Largely through the efforts of Charles Eliot, President of Harvard, the 7-12 secondary school employing high school teaching methods became widely accepted. However, educators soon recognized that the younger seventh grade learners were quite dissimilar from older learners. The results of the 7-12 structure was a rather high drop-out rate (nearly 50%).

In order to better deal with these younger secondary school learners, junior high schools

encompassing grades 7-9 were established (first in Berkely, California, and Columbus, Ohio, in 1910 and then in Grand Rapids, Michigan, in 1911).[17] Henry Brown reported to the North Central Association of Colleges and Secondary Schools that the numbers of students enrolled in these schools had significantly risen and that the number of drop-outs had decreased by two-thirds of the former rate.[18] Such satisfactory results helped promote this movement and some schools were renamed intermediate schools. The junior high or intermediate school rose in popularity and prevalence through the next decade, but the onset of the depression brought a slowing of the movement.

Following World War II renewed interest in the junior high resulted in more carefully articulated goals. Gruhn and Douglass listed the following list of objectives in 1947:

> Integration (of subject matter)
> Exploration
> Guidance
> Differentiation (individualized instruction)
> Socialization
> Articulation (between elementary and secondary)[19]

---

[17] Popper, op. cit., p. 11.

[18] Ibid., p. 13.

[19] William T. Gruhn and Karl R. Douglass, The Modern Junior High School (3d ed.; New York: The Ronald Press Co., 1971), pp. 75-76.

Articulation of the junior high school's role brought questions and challenges over early adolescent education. One critic of the junior high, Nickerson, challenged that these objectives were never met by junior highs. He further maintained that the junior highs were unlikely to ever meet their purposes.[20]

Physiological Basis for Middle School

Middle school achievement of purposes was hampered, at least in part, by the evolving nature of the adolescent. The fifties and sixties saw a re-evaluation of the adolescent's nature. Dorothy Eichorn commented on the observable physiological changes:

> At least since the late nineteenth century, children and youth in succeeding generations have been getting larger earlier in most sections of the world. The average length of newborns is probably greater, and average adult heights are not only definitely greater, but also reached at a younger age. However, the secular trend is maximal during adolescence and next largest during childhood, indicating that accelerated maturation underlies much of the increase in size. During the last seventy years, for example, the average height of five to seven-year-olds has increased about .4 - .8 inches each decade, while the increment for ten-to-fourteen-year olds was .8 - 1.2. Over a comparable time span, age at menarche decreased about .4 years per decade. Improved nutrition, housing and medical care are probably responsible for the accelerated rate of maturing in succeeding generations.[21]

---

[20] Nickerson, op. cit., p. 4.

[21] Dorothy Eichorn, "Variations in Growth Rate," Childhood Education, XLIV (January, 1968), 289.

The impact of this evidence becomes more profound when comparing the physical size of contemporary youngsters in the ten to fourteen-year-old range with those of sixty years ago. In the six decades which have passed since the establishment of the junior high, youngsters have gained an average of 4.8 to 7.2 inches in height, however, the attendant implications are more significant than the physical differences. Tanner points out:

> During the last 100 years, there has been a very striking tendency for the time of adolescence . . . to become earlier. The data on heights and weights . . . show that the whole process of growth has been progressively speeeded up and that all children born in the 1930's or 1950's for example, were considerably larger than those born in the 1900's . . . children of ten, thirty years ago, having the size of children of nine at presnet.[22]

Tanner is concluding, of course, the greater physical development is evidence of earlier onset of adolescence although size alone is not necessarily indicative of maturation. However, Eichorn feels that maturity does parallel the growth rate of youngsters.[23] The impact which this important factor has on adult-youngster relationships is not lost to Eichorn. In looking at today's physical growth rate and earlier maturation, she

---

[22]J. M. Tanner, Growth of Adolescence (Oxford: Blackwell Scientific Publications, 1963), pp. 143-144.

[23]Eichorn, "Variations in Growth Rate," p. 288.

considered adult inability to understand the more mature and oftentimes precocious behavior of adolescents as a major problem.[24]

Psychological Basis for Middle School

Schools should be required to direct attention to the problem of earlier maturation. It is essential that the students served by the schools be totally understood. Donald Eichorn indicates that "a curricular program has little chance for success if it is incompatible with the nature of the students it is attempting to educate."[25]

Earlier physical maturation of adolescents and recognition that the nature of the learner must be compatible with the curriculum dictated further study of transescent phychology. Indeed, much of the rationale for the existence of the middle school is based in psychology.

Jean Piaget's developmental psychology became widely accepted just prior to the establishment of the middle school. According to Piaget, there are three stages of intellectual growth. Formal thinking, the third and most advanced stage, is reached by most youth

---

[24] Ibid., p. 291.

[25] Eichorn, The Middle School, p. 24.

circa age eleven.[26] This stage is in marked contrast to the concrete operations of the previous stage, and has some profound ramifications for the program and organization of the middle school.

Havinghurst assesses today's adolescent as more precocious and complex than those of previous generations.[27] Adolescence develops earlier, and the adolescent has many experiences at an earlier age than his parents. He goes out earlier and dates earlier. Through the mass media he gets acquainted with death and depravity earlier.

Howard supports this position:

> . . . the development of the ability to perform formal thinking, deal with abstractions, and conceptualize, which children in the past years acquired somewhere between age 12 and 14 can and had been appearing at an earlier age than previously.[28]

Further, Wattenberg observes transescence as a crucial period of development because it is deterministic in quality. He maintains that the earliest phases of a developmental stage will usually set the pattern of a

---

[26]John Flavel, The Developmental Psychology of Jean Piaget (New York: D. Van Nostrand Rienhold Company, 1963), Ch. 5.

[27]Robert Havinghurst, "Lost Innocence," N.A.S.S.P. Bulletin, XLVII (April, 1965), 2.

[28]Alvin W. Howard, Teaching in Middle Schools (Scranton, Pa.: International Textbook Company, 1960), p. 4.

particular task for life.[29] This gives significance to transescence since Wattenberg includes the establishment of heterosexuality, the strengthening of ego identity, and the practice of adult roles in the developmental tasks of this stage.[30]

The conclusions of Wattenberg, Howard, Havinghurst, and Piaget all attribute a period of critical development to transescence. The ability to deal in the abstract, the achievement of sexual maturity and its attendant heterosexuality, a transfer of interest to the peer group, greater self-identity, and new role definitions in an adult world begin to emerge during this crucial period. Whether it involves development of cognitive abilities or fundamental personality traits, transescence is a decisive period. As such it deserves special recognition and adaptation by schools. The unique developmental stage of transescence provides the psychological rationale for establishing the middle school.

Social Science Basis for Middle School

While much of the rationale for the establishment of the middle school rests on the discipline of

---

[29] William W. Wattenberg, "The Middle School as One Psychologist Sees It," High School Journal (December, 1969), 165.

[30] Ibid.

psychology, the social sciences also contribute significantly. The cultural and social condition of America has undergone profound--indeed almost revolutionary--changes during recent decades. As a result, today's transescent differs to a significant degree from the transescent of earlier periods.

When observing children from varying cultures it becomes evident that the environment in which a child is reared has an impact on his development. America's earlier social exposures have definitely affected transescents. Commercialized mass media, pressures from parents and peer groups, and other forces have pushed transescents into premature adulthood. Coleman noted that adolescents become more sophisticated in a society which seeks to promote earlier sophistication.[31]

According to Mead, the appropriate experiences of early teens are severely hampered in today's society. This includes pair friendship with members of the same sex, an emerging recognition that the opposite sex can be interesting, admiration and emulation of adult models and heroes, a curiosity about the world, personal body responses, and a shifting sense of identity.[32] Mead

---

[31]James S. Coleman, "Social Change, Impact on the Adolescent," N.A.S.S.P. Bulletin, XLVII (April, 1965), 14.

[32]Margaret Mead, "Early Adolescence in the United States," N.A.S.S.P. Bulletin, XLVII (April, 1965), 7-9.

asserts that adolescents are presently inhibited by a cultural style which requires aping of a later stage. In her opinion this pressure has developed during the last few decades. The result has been a spread downward in age level of dating, going steady, pairing off, and an emphasis on vocations, criminal behavior, and permission to spend money on an increasingly lavish scale.[33]

These trends are symptoms of the response of transescents to contemporary American society. They do not reflect the strong dependency needs which still exist at this stage of development, but instead indicate the direction which society has apparently assigned. This new social complexity is colliding with transescents at a time of life when they are seeking self-identity. The new educational response to this phenomena is the middle school.

Physiology, Psychology and Social Science are Integrated Reasons

In conclusion, the rational for the establishment of the middle school is based upon the physical, psychological and social needs of contemporary transescents. However, these cannot be taken in segments because

---

[33] Ibid., p. 5.

> . . . individuals neither develop to react emotionally, physically or mentally in a separate sense, but this happens in an integrated or unified manner. . . . Neither the individual nor his surroundings completely determines what he will do or what he will be. A cause and effect relationship exists between him and his milieu and between the intellectual, physical, and emotional aspects of his being.[34]

Human behavior requires that all of the disciplines be accounted for in concert. The middle school is assigned the task of accounting for earlier physiological deveopment, more precocious intellectual activity, and demands of a dynamic society upon the transescent.

A New Clientele: Transescents

In order to achieve educational goals and accomodate the physiological and psychological evidence, care must be taken to appropriately place students. The middle school's reliance upon physiological, psychological and social foundations is indicated by definition in terms of grade levels.

Conclusions of other disciplines have resulted in the middle school organization having a 5-3-4 or 4-4-4 pattern. By including grade six and possibly grade five, the content specialists of the secondary school could employ a variety of techniques to better fit the needs of

---

[34] H. W. Bernard and W. C. Huchins, eds., Readings in Human Development (Boston: Allyn and Bacon, Inc., 1967), p. 35.

transescents. These included cooperative planning, new learning strategies, group decision making, and team teaching.[35] The earlier maturation of the adolescent, it was argued, required an instructional program which was best provided by the high school. As a result most middle schools did not include ninth graders.

Reorganization of the middle years of education met with some resistance. Earlier commitment to the 6-3-3 plan was proposed by the National Association of Secondary School Principals.[36] Buel, after reviewing the needs of early adolescence, indicated that grouping grades 7-8-9 together provided the best instructional program. He pointed out that half the entering seventh graders had reached puberty while many ninth graders had not reached adolescence. As a result, he favored keeping the ninth grade in the 7-8-9 combination.[37]

More recently the National Association of Secondary School Principals, through its Committee on Junior High School Education, reaffirmed its support for the 7-8-9

---

[35]Ann Grooms, Perspectives on the Middle School (Columbus, Ohio: Charles E. Merrill Publishing Company, 1967), pp. 62-64.

[36]Committee on Junior High School Education, "Recommended Grade Organization for Junior High School Education," N.A.S.S.P. Bulletin, XLII (September, 1959), 40-42.

[37]C. E. Buell, "What Grades in Junior High School," N.A.S.S.P. Bulletin, XLVI (February, 1962), 19-22.

junior high school. The Committee, whose executive secretary was J. Lloyd Trump, expressed the belief that "Anyone contemplating a grade combination other than 7 - 9 needs to have compelling reasons for making the change."[38]

Bough criticized the 4-4-4 plan for theoretical and philosophical positions which did not justify changing from the 6-3-3 plan.[39] He emphasized that all of the suggested organizations for instruction proposed by middle school advocates were taken from junior and senior high schools. Bough argues further that the school in the middle level is a mere mechanical grade rearrangement unless it focuses on human development.[40]

Yet, most advocates of the middle school contend that the need for grade placement is founded on the human development factors expressed by Dorothy Eichorn, Piaget, Wattenberg, Coleman, Mead, et al.

Using criterion measures of social, emotional, and physical maturity, and opposite-sex choice, Dacus found the least degree of variability between pupils in grades six and seven. Greater differences existed between

---

[38]Committee on Junior High Education, "Recommended Grades in Junior High Schools or Middle Schools," N.A.S.S.P. Bulletin, LI (February, 1967), 69.

[39]Max Bough, "Theoretical and Practical Aspects of the Middle School," N.A.S.S.P. Bulletin, LII (March, 1969), 10.

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

grades 8 and 9 than between grades 9 and 10.[41] Glissmeyer found no significant differences when comparing the achievement of sixth graders in middle and elementary schools. Yet, the teachers' viewed the middle school as the ideal instructional program for this group.[42] White found seventh graders scored most poorly on achievement, social adjustment, and activity participation in schools having a 7-9 or 7-12 organization.[43] Strickland found students in grade nine functioning as well as those in a four-year high school when he measured attitude toward school and academic achievement.[44] Sanders concluded that grades six through eight comprise a more homogeneous group on measures of mental and educational development when compared to grades seven through nine.[45]

---

[41]Wilfred P. Dacus, "A Study of the Grade Organizational Structure of Junior High School as Measured by Social Maturity, and Opposite Sex Choices," Dissertation Abstracts, 24:1461-2, September, 1963.

[42]C. R. Glissmeyer, "Which School for the Sixth Graders, Elementary or the Middle School?" California Journal of Educational Research, XX (September, 1969), 176-185.

[43]W. D. White, "Pupil Progress and Grade Combinations," N.A.S.S.P. Bulletin, LI (February, 1967), 87-89.

[44]V. E. Strickland, "Where Does the Ninth Grade Belong?" N.A.S.S.P. Bulletin, LI (February, 1967), 74-76.

[45]S. G. Sanders, "Differences in Mental and Educational Development from Grades Six Through Nine and Implications for Junior High School," Dissertation Abstracts, 27:1234, November, 1966.

In summary, a strong theoretical basis for the middle school is found in the areas of human development, including physiology, psychology, and the social sciences. This has resulted in a grade plan which usually includes grades 6 and/or 5 while excluding grade 9. While there are such factors as the Hawthorn Effect to skew results in favor of the middle school, research appears to support the view that students do as well or better in grades affected by reorganization into the middle school.

The Current Status of the Middle School

Theoretical Basis

The middle school is a relatively new arrival when compared to other organizational structures of the elementary, junior high, and senior high schools. Consequently many of its practices owe their existence to the suggestions of the earliest proponents. These theoreticians recommended specific functions despite their limited research.

Grooms, one of the earliest advocates of the middle school, proposed three major functions: First, emphasis should be placed on support of students and how they ascertain their capabilities for learning and orientation to the environment. Secondly, students should be provided opportunities to pursue independent study, to participate in group activities, and to fulfill creative needs through

the fine and practical arts. Thirdly, due to its specialized curriculum and organizational structure, the middle school should facilitate articulation between elementary and senior high schools.[46]

Moss feels the middle school should foster:

1. The individual physical well-being of the student during late childhood and early adolescence. Health and physical education activities are designed which are unique to this period of rapid physical growth and dramatic bodily change.

2. Individual mental health through a continuous program of sex education aimed at understanding the many epochal changes taking place during the years 11 - 14.

3. Learning specifically geared to immature and maturing students in an atmosphere which challenges but does not pressure the individual. Such programs recognize that there are many different learning styles and that large numbers of this age group cannot tolerate huge doses of subject matter because of their rapid physical metamorphosis.

4. A continuous program of educational guidance based on the concept that guidance belongs in all classrooms, but utilizing specially-trained guidance counselors as resource personnel. Thus all middle school teachers should be "guidance oriented," working with specialists as members of a professional team. Vocational and career guidance (including college counseling) belong in the high school, not the middle school.

5. A curriculum that is part of a continuous nursery through 12th grade program but that takes cognizance of the purposes listed

---

[46]Grooms, op. cit., pp. 4, 8.

above. Such a program provides for articulation with the elementary school and with the high school.

6. Activities related to the interests and needs of middle school students. These recreations are a natural outgrowth of classroom activities and take the form of special interest clubs and intramural sports. Elaborate graduation ceremonies, evening dances, cheerleaders and marching bands do not belong in the middle school.[47]

Alexander similarly recommended that the functions of the middle school were:

1. To serve the educational needs of the "in-between-agers" (older children, preadolescents, early adolescents) in a school bridging the elementary school for childhood and the high school for adolescence.

2. To provide optimum individualization of curruculum and instruction for a population characterized by great variability.

3. In relation to the foregoing aims, to plan, implement, evaluate, and modify, in a continuing curriculum development program, a curriculum which includes provision for: (a) a planned sequence of concepts in the general education areas; (b) major emphasis on the interests and skills for continued learning; (c) a balanced program of exploratory experiences and other activities and services for personal development; and (d) appropriate attention to the development of values.

4. To promote continuous progress through and smooth articulation between the several phases and levels of the total educational program.

---

[47]Theodore C. Moss, Middle School (Boston: Houghton Mifflin Co., 1969), pp. 20-21.

5. To facilitate the optimum use of personnel and facilities available for continuing improvement of schooling.[48]

Further Alexander suggested a curricular model with three distinct categories:

1. Learning skills: reading, writing, speaking, listening, computation skills continued from the elementary school, with new emphases on use of library tools and self-teaching devices.

2. Other common learnings: literature, social studies, languages, mathematics, science, and fine arts, following a sequence of instruction in these areas planned for grades K-12.

3. Personal development: health and physical education geared to the 10-14 year old; individually planned experiences in foreign languages, typing, fine and practical arts, and remedial basic skills; other exploratory experiences through independent study and a program of special interest activities and student-managed enterprises; close relationships with a counselor-teacher throughout the middle school; and adequate diagnostic tests, parent conferences, and other data sources for counseling.[49]

Vars was critical of Alexander's model because of its divisions. He suggested a core approach which took into account the learners, society and content areas and provided for continuous, non-graded progress in

---

[48]Alexander, et al., op. cit., p. 19.

[49]William M. Alexander, "The Junior High School: A Changing View," N.A.S.S.P. Bulletin, XLVIII (March, 1964), 23-24.

flexible grouping and scheduling arrangements.[50] Further he added:

> Yet the best curriculum for the middle school may, in truth, represent a 'marriage' of the best features of the elementary school with the best from the high school. The most promising curriculum offspring of that union might well embody these three concepts: core, nongrading and flexibility.[51]

Studies of Middle School

While Vars was dealing largely in the theoretical, Zdanowicz conducted one of the earliest studies to determine what, in fact, was being done in middle school. He concluded that middle schools included earlier grades than the junior high, and that its program was enriched at each grade. He was able to predict the spread of the middle school concept.[52]

Howard, in an early study conducted in Oregon and Washington, indicated that there were some advantages to the new middle schools. Included as advantages were earlier departmentalization, better age grouping, and flexible scheduling. However, he found middle schools to

---

[50]Gordan F. Vars, "New Knowledge of the Learner and His Cultural Milieu, Implications for Schooling in the Middle Years" (paper read at University of Toledo, November, 1967), pp. 1-12.

[51]Ibid., p. 13.

[52]John Paul Zdanowicz, "A Study of the Changes That Have Taken Place in the Junior High Schools of North Eastern United States During the Last Decade and the Reasons for Some of the Changes" (unpublished Ph.D. dissertation, Temple University, 1965), pp. 169-175.

be lacking in proper facilities, counseling time, homogeneous grouping, and--oftentimes--found them used as a temporary expedient.[53]

Compton also examined the current status of middle schools. She sampled 1,101 middle schools and found some basic elements prevalent. Among these characteristics were articulation with elementary schools, gradual departmentalization, team teaching, skills laboratories, independent study, a home base grouping, an activities program, continuous progress, and individualized schedules.[54]

Riegle, in a study of Michigan middle schools, determined the degree to which eighteen principles of middle school organization were implemented. The principles involved were continuous progress, multimedia, flexible schedules, social experiences, intramural experiences, team teaching, planned gradualism, exploratory and enrichment, guidance services, independent study, basic learning experiences, creative experiences, student security factors, evaluation practices, community relations, student services, and auxiliary staffing.[55] Data provided by Riegle indicate that there was a 46.9 percent

---

[53]Alvin W. Howard, "The Middle School in Oregon and Washington," Dissertation Abstracts, 28:2008, January, 1967.

[54]Mary F. Compton, "The Middle School," Theory Into Practice, VII (June, 1968), 108-110.

[55]Riegle, op. cit., p. 58.

application of these factors in Michigan middle schools.[56] Further, examination of four exemplary middle schools in other parts of the country indicated that these principles were applied to a much higher degree (64.9 percent).[57]

Baruchin identified the following practices as important to the middle school: guidance services, departmentalization, nongraded classes, team teaching, reading, exploratory-enrichment opportunities, accelerated courses, programs for gifted and talented students, sex education, enrichment techniques, study arrangements, assemblies, co-curricular activities, athletics, library services, instructional facilities, student retention, reporting pupil progress, inservice, staff differentiation, and middle school staff.[58] In comparing these practices with those of traditional schools, Baruchin concluded that the evidence was inconclusive to corroborate the assumption that middle schools are unique and innovative organizational units.[59]

Cuff found that:

---

[56] Ibid., p. 66.

[57] Ibid., p. 67.

[58] Fred Baruchin, "A Comparative Study of Transitional Grades of Middle and Traditional School Types in Upstate New York" (unpublished Ph.D. dissertation, State University of New York, 1971), pp. 115-127.

[59] Ibid., p. 112.

> Middle school course offerings show a general uniformity and conformity. English, social studies, mathematics, science, physical education, art, and music are standard in all grades. Conversational foreign language, mostly French and Spanish, industrial arts, and home economics start by the eighth grade in some. Some middle schools have all, and all have some of the following subjects: health, reading, typing, art and crafts, homemaking for boys, library and homeroom guidance. Extra class activities are usually limited to band, orchestra, chorus, student council and intramural sports.[60]

Studies Involving Planning and Preparation

While Cuff indicates that there is general conformity of middle school practices, Flynn, in a California study concluded that specific criteria should be established regarding the middle school. A model could then be developed which would be used to evaluate the effectiveness of the middle school program.[61]

Despite the fact that there are no models to rely on, middle schools have been established with a specific purpose(s). Onofrio examined fourteen schools housing grades 5-8, twenty-five schools housing grades 6-8, and eighteen schools housing grades 7-8. He found that these Connecticut middle schools were established for the

---

[60] William A. Cuff, "Middle Schools on the March," N.A.S.S.P. Bulletin, LI (February, 1967), 84.

[61] John Harrington Flynn, "Practices of the Middle School in California," (unpublished Ph.D. dissertation, University of Southern California, 1971), pp. 194-197.

following multifaceted reasons (in rank order): to suit the program to the needs of transescents, and provide for their individual differences; to provide articulation between elementary schools and secondary schools; and, to eliminate crowded conditions in other schools.[62] Gatewood[63] found that the reason most listed by middle school principals for the establishment of the age and grade level organization was elimination of overcrowded school situations. Baruchin, researching in New York, found that the three major reasons for adopting the middle school were: to provide a program which is more appropriately designed for students of pre- and early adolescents; to alleviate problems of overcrowding; and, to facilitate the transition from the elementary level to the secondary level.[64]

It is interesting to note that in two of the studies cited the most important motives for establishing middle schools reflected the educational needs of its learners. This is consistent with the physical, psychological, and social science rationale for the middle school movement. Yet, in all three studies the need for housing was listed as a significant factor.

---

[62]John Egidio Onofrio, "The Evolving Middle School in Connecticut: Principals' Opinions Concerning Unique Characteristics and Recommended Trends" (unpublished Ph.D. dissertation, Fordham University, New York, 1971), p. 97.

[63]Gatewood, op. cit., p. 266.

[64]Baruchin, op. cit., p. 51.

While the motives for establishing the middle school are not (in and of themselves), assets or liabilities, the underlying incentives have to be shaped into appropriate programs for transescents. Mortimore described the effort involved in developing the Roosevelt Program.[65] His study indicates that significant dedication to task is required in the establishment of a middle school program. If the incentive is merely one of housing youngsters, what happens once that goal has been reached? Will there be the desire to insure an appropriate middle school program for transescents?

Meister also provides support for the postulate that time and effort are necessary for the proper establishment of a middle school program. His study of quality of instructional methodology, curriculum guides, and frequency of innovation in Wisconsin middle schools concluded that adequate planning time is necessary. He feels emphasis should be placed on organization for teaching rather than management, and that teachers should be actively involved in this process.[66]

---

[65]David Edwin Mortimore, "A Case Study of the Emergence and Development of an Innovative Program for Middle School Children: The Roosevelt Junior High School Program," Dissertation Abstracts, 32:3008-9, December, 1971.

[66]Richard William Meister, "The Relationship of Differentiation of Organizational Structure of the Instructional Program of the Middle School" (unpublished Ph.D. dissertation, University of Wisconsin, 1971), pp. 151-153.

When assessing the establishment of the middle school, Meister found that most middle schools did not involve the teachers as significantly as they should have. In contrast, the rather positive results suggested in Mortimore's study may have occurred because of active teacher participation.

Complicating the present condition of middle schools (and the possible influence which teachers can have in establishing them) is the teachers' lack of specific preparation for middle school teaching. Brown concluded that middle school teachers needed specific training in reading, psychology of the transescent, methods, strategies, and techniques. Middle school teachers should also be required to student teach in this environment. Summarizing these findings one generally concludes there is a deficiency in preparation of middle school teachers.[67]

Studies of Student Achievement and Attitudes

Although there are deficiencies of teacher preparation and a lack of appropriate motives for establishment of a middle school program, studies have been conducted to determine the effects on students. Rankin studied the

---

[67]Lela Joan G. Brown, "A Survey of Opinion of Selected Principals Concerning Preparation and Characteristics of Teachers for Junior High and Middle Schools," Dissertation Abstracts, 32:3831-2, January, 1972.

effect of the middle school on attitudes and achievement of 1900 students. The two-year study was conducted in a district which changed its organization from a 6-3-3 plan to a 5-3-4 plan in one year. He found that student attitudes were healthier under the middle school organizational plan.[68]

Stephens examined the effects of a child-centered middle school program in a study of fifth and sixth graders. The program placed strong emphasis on individualized learning, pupil autonomy, and flexibility. He found that both the fifth and sixth grade students had a better self-concept of their academic adequacy while the sixth graders had better self-concepts and interpersonal adequacy.[69]

However, another study conducted by Fallon found sixth and seventh grade boys in conventional and middle school organizations to have few dissimilarities and no statistical differences on factors of self-concept and

---

[68]Harold James Rankin, "A Study of the Pre-and-Post-Attitudes and Academic Achievements of Students in Grades Five Through Ten in a Change from a Junior High Organization to a Middle School Organization in a Suburban School System" (unpublished Ph.D. dissertation, Syracuse University, 1969), p. 190.

[69]William Francis Stephens, "A Study of the Relationship Between Self-Concept, I.Q., and Reading Comprehension in a Selected Middle School" (unpublished Ph.D. dissertation, University of Southern Mississippi, 1969), pp. 81-82.

personal and social problems.[70] Schools which had an optimum of learner involvement, a lack of subject matter orientation, and sensitivity to individual learner needs positively affected the self-concepts of male transescents.[71]

Tobin, in a study of five Pennsylvania junior high schools and five middle schools, found no significant differences in student problems and personality between middle and junior high school students.[72] Similarly, Austin, studying tenth grade students who had come from the 6-3-3 and the 5-3-4 plans, found no significant difference in attendance, drop-out rate, or curricular participation. However, there was a significant difference in the responses of parents. They favored the 5-3-4 plan as superior in all categories measured.[73]

---

[70]John Patrick Fallon, "A Comparison of Transescent Male Development in Two Organizational Patterns Centering on Middle School Grade Reorganization" (unpublished Ph.D. dissertation, Michigan State University, 1969), p. 78.

[71]Ibid., p. 79.

[72]Warner E. Tobin, "Seventh Grade Students in Two Pennsylvania Administrative Organizations, The Middle School and the Junior High School," Dissertation Abstracts, 30:2783, January, 1970.

[73]John Calvin Austin, "A Comparative Study of Two Forms of School Organization for the Early Adolescent in Terms of Pupil Achievement and School Adjustment," Dissertation Abstracts, 28:4814, June, 1968.

Gaskill used 441 experimental subjects from 6-7-8 middle schools and 7-8-9 junior high schools to study personal adjustment and achievement. His findings indicated that there was no significant difference in the sense of self reliance, personal worth, personal freedom, feeling of belonging, withdrawal tendencies, nervous systems, and total personal adjustment of eighth grade students.[74] Gaskill concluded his study by stating that "the middle school concept seems to have little affect on personal adjustment."[75]

Summary

It is apparent from the research that the middle school has emerged as a distinctive organizational form. While it does resemble the more traditional junior high school in many respects, it is different in recognizable goals and practices. The middle school does enroll younger students, initiates earlier departmentalization, uses subject specialists, and practices flexible scheduling, team teaching, independent study, and teacher pupil planning. The middle school also favors the employment of elementary teachers and provides greater continuity of

---

[74]Lynn Dale Gaskill, "An Investigation of the Effects of Four Middle School Programs Upon Academic Achievement and Personal Adjustment" (unpublished Ph.D. dissertation, North Texas State University, 1971), p. 79.

[75]Ibid., p. 80.

program. All of these differences reflect a philosophy of education which tends to recognize the needs of transescents.

This group of young people is more mature than their turn of the century counterparts. Physiological development is advanced and coupled with the onset of critical psychological change. Our dynamic, wealthy society has also provided these young people with greater exposure to a wider range of experiences at an earlier age. All these changes have placed new demands on schools. The middle school is one attempt to meet the needs of the students.

Many of the current practices of the middle school evolved from suggestions of theorists rather than long-term research. The limited long-term studies which have been conducted indicate that the practices suggested as appropriate are infrequently implemented. In general, there is a lack of appropriate planning prior to establishment of a middle school program. Teacher-preparation programs to fill the demands of transescent education have been generally lacking.

On the basis of its present operational status and after examination of its effect on transescents, few researchers have found significant differences in middle school youngsters. However, in almost all studies where differences have been significant the middle school can

generally be considered as good as, or better than, other educational organization concepts.

It is apparent that differences exist between middle schools of the nation since some more closely approach the theoretical model. In addition, both observation and research indicate that some middle schools have succeeded in realizing their goals to a greater degree than others through the implementation of appropriate practices and procedures. One of the anticipated outcomes of appropriate middle school practices is an affect on student attitude toward school. In view of the variations in implementation of practices it is proposed in this study to investigate the attitudes of the middle school student population of Michigan as measured in attitudinal terms by the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7, and to attempt to relate these findings to practices and procedures currently employed in randomly selected middle schools.

CHAPTER III

DESIGN OF THE STUDY

This chapter contains a description of the design of the comparative study. It commences with selection of the jury and the development of a questionnaire based upon suggested practices of the middle school. Sample selections of middle schools in Michigan were made and descriptions of visitations to these schools are also included herein. Selected statistical treatments are also described.

The Selection of the Authorities by the Jury

National middle school authorities were identified by a six-member professional jury. All jurists had extensive knowledge of the middle school. Five members of the jury were Michigan State University program graduates whose doctoral dissertations centered on the middle school. Included were Dr. Marie Therese Elie, Dr. John Patrick Fallon, Dr. Doris Lee Marshall, Dr. Jack Riegle, and Dr. John Warren Vaughn.[1] In addition,

[1]See Appendix A.

Dr. Sal Di Franco was selected as a result of his work as a middle school practitioner. Dr. Di Franco is a part-time faculty member at Michigan State University and principal of the exemplary McDonald Middle School in East Lansing, Michigan.

Each juror was contacted by mail and asked to identify (in rank order) three outstanding national authorities on the middle school.[2] Enclosed in the same mailing was a ballot which listed some authorities for consideration. However, each jurist was permitted and encouraged to select from outside the list provided.[3]

Alexander and Eichorn Selected

All members of the jury submitted their nominations in rank order. A first-place ranking was given a weight of three, a second-place designation was weighted two, and a third-place ranking was weighted as one and is included in Table 1.

William M. Alexander and Donald H. Eichorn clearly emerged as the consensus authorities on the middle school. They received all of the first-place votes, and accumulated total weighted scores which were identical (thirteen). Four of the remaining nominees

---

[2]See Appendix B.

[3]See Appendix C.

TABLE 1.--Jurors Ranked Nominations for the Three Most Outstanding Authorities on the Middle School.

Nominee	Rank One	Rank Two	Rank Three	Total Weighted Score
W. M. Alexander	3	1	2	13
M. F. Compton		1		2
Donald H. Eichorn	3	2		13
A. Grooms			2	2
J. Lounsbury			1	1
J. Riegle			1	1
L. Romano		1		2
E. L. Williams		1		2

received a total of two points; two others received only one third-place ranking (one point). This represented a significant range between the top two and bottom six. The scores of Alexander and Eichorn were six times greater than the next highest candidate. It should be noted that the jury could not agree on the third most respected authority (four nominees each received two points).

Despite the request for three authorities, only two, Eichorn and Alexander, were regarded as significant authorities in middle school education by the jury.

The Development of the Questionnaire

After the jury established Eichorn and Alexander as the outstanding authorities on the middle school, their

writings were carefully examined to ascertain suggested practices for the middle school. Each author had written extensively on the middle school and each has one major work on the topic with which he is generally associated. In 1966 Donald Eichorn published The Middle School. It was a relatively early publication on middle school education, and tended to emphasize the theoretical. The major work of William Alexander, The Emergent Middle School, was published in 1968. This book drew from research to suggest middle school practices, and placed more emphasis on the practical. Both authors stress concern over the affective domain due to the critical developmental period which transescence represents. Each work recognizes the impact of the cognitive domain and attempts to account for the unique affective factors in transescence in striving to attain cognitive objectives. It was primarily from the two major literary efforts of Alexander and Eichorn that the questionnaire regarding suggested practices of the middle school was developed.

A Fixed-Alternative Interview Instrument

The questionnaire was designed to be read by an interviewer. All questions were fixed-alternative items requiring either a yes, no, or multiple choice response. The interviewer began by assuring confidentiality and indicating that all references for answers were to

reflect the 1970-71 school year since that was the period from which the respective school's student attitudes were derived.[4] The body of the instrument was divided into five major sections: Staff and Organization (questions 2-16), Activity Program (questions 17-25), Guidance (questions 26-28), Instruction Program (questions 29-56) and School Plant and Equipment (questions 63-80).[5] Each question was formulated from a suggested practice, and assigned a reference point. An "E" preceeding the question indicates Eichorn. This is followed by the page number of The Middle School.

In Alexander's case all page references refer to The Emergent Middle School and are preceded by an "A". Alexander has also written numerous articles on the middle school. While nearly all suggest or elaborate on practices included in The Emergent Middle School, one article, "What Educational Plan for the In-Between Ager,"[6] did include some other major practices. Any questions based upon this article were identified by "A-In-Between Ager."

---

[4] See Appendix D.

[5] See Appendix D.

[6] William Alexander, "What Educational Plan for the In-Between Ager," Education Digest, XXXI (May, 1966), 18-20.

A number of practices were suggested by both authorities and are identified by both an "A" and an "E" followed by the respective page. Notations were also used to indicate when an authority referred to a practice more than once.

An Attempt at Clarity of Interpretation

In developing questions regarding practices suggested by Alexander and Eichorn, the possibility of ambiguity was anticipated. While some practices are universally understood to represent certain activities, there are others, e.g., team teaching, which take on a variety of meanings. Consequently definitions were provided where it was anticipated that there might be confusion.[7]

The Need for Special Treatment Questions

There were, of course, questions developed which were not directly based on the work of Alexander and Eichorn. The first question on school size was developed because schools have varying sizes and this factor was considered to have potential implications for middle school practices and general operation.[8] Although

---

[7]See Appendix D.

[8]See Appendix D.

both authors imply that there is an ideal size, neither is specific.

Questions 57-61 were developed to determine the sociological make-up of the student body. When assessing the attitudes of students it is possible that factors other than school practices will influence certain attitudes. One of the most critical factors is a sociological background which may positively or negatively affect student attitude. The impact of this factor received special treatment in the study.[9]

Another question which required special treatment was number 62. This question dealt with discovering whether there had been any significant event which affected student attitude. Factors such as a bitter teachers' strike might have been important influences on the students' attitudes. To gain an appropriate perspective for the middle schools examined, this question was considered essential.

Questions 81 through 85 were designed for teachers. They are identical to five of the questions asked administrators, and were intended to determine whether there were differences in the perceptions of administrators and teachers. Similarly, questions 85 through 90 were designed to determine whether there were differences in the

---

[9]See Appendix D.

perceptions of students and administrators. The numbers of the questions presented to the administrators are identified in the questionnaire beside teacher and student responses.[10]

Pre-testing

The entire instrument was pre-tested in two Detroit Metropolitan Area schools. Appropriate revisions were made as necessary. The instrument was also reviewed by the research consultants from the College of Education, Michigan State University, for computer programing compatibility.

The Selection of the Sample

The selection of the sample was begun upon completion of the questionnaire. Through the cooperation of the Michigan Department of Education, the scores of all schools on the 1971 Michigan Assessment Test of Basic Skills, Grade 7 were made available. This included the scores on the section dealing with students' attitudes toward school. This section of the test contained seven questions on attitudes toward school.[11] The group estimates were sufficiently reliable for reporting school mean scores of these measures (provided that a minimum of

---

[10] See Appendix D.

[11] See Appendix E.

five students from a school participated and a significant number of students were not absent from the testing).[12] In this study Table 2 indicates that the five-students-minimum criterion was attained in all samples. Since schools were required to administer the test to all fourth and seventh grade students, students were exempt only in cases of prolonged absences. As a result, the second criterion was also fulfilled by the sample.

The School Code Master List Reviewed

The School Code Master List of the Michigan Department of Education was examined. One-hundred-four schools officially carried the title of Middle School at the time of the 1971 Michigan Assessment Test of Basic Skills. Respective scores were recorded for each of these schools and also appear in Table 2, as was the number of students taking the test. A higher score represented better student attitudes toward school. Scores for middle schools ranged from a high of 54.9 to a low of 45.7. The mean score for all middle schools in Michigan was 50.2.

---

[12]Michigan Department of Education, Local District and School Report: Explanatory Materials, Third Report of 1970-71 Michigan Educational Assessment Program, June, 1971, p. 4.

TABLE 2.--Scores and Population of Sample Schools in Lowest and Highest Quartiles.

School	Attitude Score	Number of Students Tested
Lowest Quartile:		
#1	47.0	82
#2	47.1	291
#3	47.2	221
#4	47.3	140
#5	47.6	129
#6	48.0	354
#7	48.0	299
#8	48.5	211
#9	48.8	110
#10	48.8	144
Mean Score	47.8	Total No. 1,981
Highest Quartile:		
#11	51.5	147
#12	51.7	155
#13	51.8	160
#14	51.8	177
#15	51.8	89
#16	52.0	103
#17	52.3	216
#18	52.5	250
#19	53.1	104
#20	53.1	427
Mean Score	52.5	Total No. 1,828

Random Selection of Sample

A random table of numbers was then applied for selection of the sample. Ten schools were selected which had scored in the top quartile of middle schools; ten others were selected which had scored in the lowest quartile.

Respective scores represented a rather wide range (see Table 2). This was anticipated since the study was aimed at examining the extreme quartiles.

It is important to note that none of the sample schools had fewer than 82 students tested. This far exceeded the minimum of five students deemed necessary for statistical analysis in the research design.

The average number of students tested in schools of the lowest quartile was 198, and those schools in the highest quartile averaged 183. This also represented a good population for the testing. Although only seven questions were asked, respondents in the sample schools numbered 3809. When multiplied by the possible responses to the seven questions, this became a fairly significant number. If all students answered all seven questions, the survey would generate 26,663 responses with no school having less than 574. It can be concluded that the sample was sufficiently large and the total number of responses, even in the school with the smallest number of respondents, was quite adequate.

Community Type

Variations existed, of course, in the numbers of students tested in each school. Similarly, the sample schools also presented a variety of community types (as defined by the Michigan Department of Education in

Table 3). The department has assigned to each system a specific community designation: Metropolitan Core, City, Town, Urban Fringe, and Rural Community.[13] All categories were represented in the sample.

TABLE 3.--Sample Community Type.

	Metro-politan Core	City	Town	Urban Fringe	Rural
Schools in Lowest Quartile	1		3	4	2
Schools in Highest Quartile		1	2	1	6

It became evident that the schools scoring in the lowest quartile of the sample were generally located in more populous areas. In contrast those schools scoring in the highest quartile on student attitude tended to be situated in less densely populous areas. While this fact should be weighed, it should be pointed out that the total difference in population of the two sample groups was still only 153 students (an average of 15 students difference per school). The schools in the low and high groups were similar in size, but varied somewhat in

[13]See Appendix F.

attendance areas served and in the type of environment from which their students came.

Visitations to the Sample Schools

In addition to community types and environments that varied, the geographic dispersal was fairly wide. As a result, visitations to the twenty middle schools were carefully scheduled to accommodate this dispersal.

First, an administrator from each school was contacted to get permission for the visitation. This was granted in all cases. In some instances a specific time was requested in order to set up a coordinated schedule of visitations to all sample schools in the area. Due to the distance involved, two, three-day periods involving a sequence of visitations were arranged for those schools furthest from the interviewer's residence.

A number of visitations to those schools which were more accessible to the interviewer were also arranged. Nine full days were required to conduct all the visitations and interviews. During this time the distance covered by the interviewer totaled 1,716 miles.

Interview of the Administrator

Visitations were conducted in late May and early June of 1972. Administrative interviews were begun by indicating that the questions were directed at the 1970-71 school year. In all cases it was established

that the administrator being interviewed had been an administrator in the school during that period. It was emphasized that responses would remain confidential and that there were no "correct" answers.[14] The interviewer also took care to read the questions as impassively as possible. Effort was made to make no verbal or other response to the answer provided by the interviewee. In short, responses were recorded without reaction.

Some questions could not be accurately answered because of built-in fixed responses. Despite the care taken to clarify the practices through definition, there were eleven instances where no appropriate response could be attained. These were recorded as no response.

Interview of the Teacher

After interviewing the building administrator, the interviewer informed him of the need to observe the building and interview a teacher and student. Although the order in which this occurred varied with the administrator, teachers were interviewed in private in all cases. In some instances the administrator chose the teacher; in others he permitted the interviewer to select the staff member. Care was taken to be certain the staff member had been on the staff the previous year. In each

---

[14]See Appendix D.

interview it was pointed out that it was 1970-71 school year to which the interviewee should address his answers, all answers would remain confidential and that no answer was "correct."

Interview of the Student

Students were also interviewed in private and received the same directions. As with teachers, selection of the student varied from school to school. Sometimes the administrator would select a youngster; at other times the interviewer was allowed to select the student. In all cases those students interviewed had attended the school the previous year, and that period of 1970-71 was the basis for their responses.

Observation of Facility and Equipment

The interviewer had the opportunity to carefully observe each facility and its equipment while recording observations. In most instances the administrator served as a guide; but staff members occasionally served in that capacity. In a few visitations the interviewer was simply invited to move through the building as he wished.

Length of Interviews and Observations

The visitations took from one and one-half to two and one-half hours to complete. All interviews were conducted while school was in session, although one school

dismissed while the interviewer was finishing his observation of the facility. Unless the interviewee specifically inquired, the interviewer did not volunteer the particular focus of the study except to indicate that it was related to middle school practices (very few did ask the exact nature of the study).

Most of the administrators preferred a direct interview as opposed to a personal survey instrument with return mail provisions. Additionally, they all seemed interested in talking about middle schools after the formal interview was completed. The focus of the study and the questions expressed in the questionnaire tended to cause them to reflect upon contemporary middle school practices. Although questions were not part of this study, interviewees frequently asked about appropriate practices of the middle school, practicability of their implementation, and the anticipated effects of these efforts upon transescents.

Null Hypotheses

Objectives of this Study

The basic design of this study called for these major analyses: (1) to compare and determine the relationship existing between suggested practices as observed in ten randomly selected middle schools scoring in the lowest

quartile of middle schools and ten randomly selected middle schools scoring in the highest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7. (2) To observe and describe the degree of implementation of suggested practices in ten randomly selected middle schools, scoring in the lowest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7. (3) To observe and describe the degree of implementation of suggested practices and prevailing student attitudes in ten randomly selected middle schools, scoring in the highest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

Null Hypotheses: No difference will be found in the practices of ten randomly selected middle schools scoring in the lowest quartile of middle schools and ten randomly selected middle schools scoring in the highest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

Since the study was based on specifically suggested practices, a series of subhypothesis were also developed for each of the practices.

Null Sub-hypotheses: The student attitudes in schools scoring in the lowest or highest quartiles are unrelated to the specific practice.

Statistical Treatment Used

In order to determine the answer to the null hypothesis and the null subhypotheses a statistical treatment was required which would determine relationships. Since the populations (schools scoring low and high on student attitude) were distributed and the variable was a specific practice, a test of homogeneity was employed. The contingency table for the test of homogeneity was the statistical treatment used in this study.

The Test Statistic: Chi-square

The test statistic used for the contingency table was Chi-square (χ^2). It is indicated in each of the tables. To determine the rejection level, the .05 level of significance was used and the appropriate critical value as indicated by the degrees of freedom for each table is included. Each of the tables carries the title of the specific practice which when added to the null subhypothesis is a distinct null subhypothesis. For example, the practice "The Ratio of Students to Total Professional Staff" can be added to the null subhypothesis and become: "The student attitudes in schools scoring in the lowest or highest quartiles are unrelated to the ratio of students to Total Professional Staff." The Chi-square

value must, of course be greater than the critical value in order to reject the null subhypothesis. Both of these values along with the degrees of freedom are provided as part of the tables. The contingency coefficient is also provided to assist in further interpretation of the relationship between a given practice and the low and high scores on student attitude.

Description of Schools Studied

The contingency tables will serve another purpose, i.e., describing the selected sets of middle schools. In addition to determining relationships, the contingency tables also indicate the specific percentage of implementation of a specific practice. The percentage of responses were used to help describe the status of practices within these two middle school populations in Michigan.

Coefficient Correlations

One further statistical treatment was provided to determine the consistency of response between administrators and teachers, and administrators and students. Because the same questions were asked, a simple coefficient of correlation was used to determine the degree to which they agreed in their perceptions of their respective schools.

Summary

This chapter has described the method of selecting a jury, developing a questionnaire, and selecting a sample. The sample was also identified with a detailed description of the interview and observation process. The null hypothesis was stated along with a description of the contingency table which served as the statistical treatment in this study.

An analysis of the data generated from the contingency tables and the coefficient correlations is made in Chapter IV.

CHAPTER IV

ANALYSIS OF THE DATA

Objectives of the Study

The basic design of this study called for three major analyses of randomly selected middle schools scoring in the lowest and highest quartiles on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

The study proposed:

1. to determine and compare the relationship between suggested practices observed in ten lowest quartile middle schools and ten highest quartile middle schools;

2. to observe and describe the degree to which suggested practices were implemented in ten randomly selected middle schools which scored in the lowest quartile; and

3. to observe and describe the incidence of suggested practices and prevailing student attitudes in ten randomly selected middle schools which scored in the highest quartile.

Each of the schools studied was identified by the characteristic of possessing either low or high student attitude toward school. In addition, characteristics of many suggested practices were examined in relation to the two samples which were in the lowest or highest quartiles.

Contingency Tables

A test statistic was selected to determine whether there were any relationships between distributed populations (low and high scoring schools in student attitude) and a number of variables (the practices). A two-way contingency table was used to measure these relationships as well as to give the degree of suggested practice implementation in middle schools scoring in both quartiles.

Null Hypotheses: No difference will be found in the practices of ten randomly selected middle schools scoring in the lowest quartile of middle schools and ten randomly selected middle schools scoring in the highest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

While the null hypothesis is the major hypothesis, each of the individual practices should be considered a null subhypothesis since it is a variable which can be related to a school's student attitudes. The specific practice is cited above each contingency table.

Null Subhypotheses: The student attitudes in schools scoring in the lowest and highest quartiles in student attitudes are unrelated to: the specific practice.

Authorities Suggested Practices

Most of the questions of the instrument used in this study were based upon suggested practices by William Alexander and Donald Eichorn. Although these authorities did not delineate the degree to which certain practices

should be implemented (e.g., team teaching), the degree of implementation suggested by these authorities was designated on the tables, where feasible. This designation indicated the percentage of middle schools which followed certain suggested practices.

Analysis of Data

The data was grouped in the same order as the questionnaire: Staff and Organization; Activity Program; Guidance; Instruction; and School Plant and Equipment. An analysis of data was also provided in the areas of enrollment, sociological background, and significant events which may have affected student attitude. Further, coefficient correlations were provided on teacher-administrator and student-administrator responses.

Analysis of Data on Staff and Organization

One of the major areas for which Eichorn and Alexander recommend selected practices is that of staff and organization. These practices included providing certain staff specialists: a librarian; an art specialist; a music specialist; and a home arts specialist (see Appendix G, Tables 45, 46, 47 and 48). While all of the tables report chi-square values which were lower than their respective critical values, there was insufficient support to reject the null subhypotheses. A high

percentage of the practices were implemented in the schools with the implementation varying from 85 to 100% in the schools which provided such specialists.

The practice of including staff with elementary certification (see Appendix G, Table 49) was noteworthy. Only one low-scoring school employed non-elementary certificated personnel and in sixty percent of the schools 26% or more of the staff had elementary certification. Teachers as subject specialists in one or more areas of knowledge (see Appendix G, Table 50) was another practice followed similarly to that of including staff with elementary certification as sixty percent of the schools had 61% or higher of their staffs as subject specialists. Once again the null subhypothesis was not rejected.

One infrequently implemented practice pertained to the assignment of middle school staff (Table 4). It should be observed that this practice fell short of Alexander's recommendation in 40% of the total sample. The Chi-square value was not as high as the critical value at the .05 level and was considered insignificant. Therefore the student attitudes in schools scoring in the lowest and highest quartiles in student attitudes are unrelated to staff members generally being assigned to the total middle school and this null subhypothesis was not rejected.

TABLE 4.--Contingency Table for Practice: Staff Members Generally Being Assigned to the Total Middle School.

Attitude	N	Yes*	No
Low	10	40%	60%
High	10	80%	20%
TOTAL	20	60%	40%

Degrees of Freedom = 1; Contingency Coefficient = .3779654; Chi-square = 3.33; Critical Value = 3.84.

*Recommended Practice

**This is interpreted that of ten randomly selected middle schools scoring low on student attitude, 40% assigned the staff to the total middle school and 60% did not.

While the recommended ratio of males to females on the staff was implemented to a slightly higher degree than the practice of the staff being assigned to the total middle school, this practice is interesting from another standpoint (Table 5). One school scoring high in attitudes had a staff with less than 20% males while another had more than 80% male staff members. The schools scoring low more closely met Eichorn's suggested practice of sexual balance on the faculty. Seventy-five percent of the schools had staffs with a male range of 41-60%.

A practice of providing reading specialists in the middle schools (Table 6) was not commonly followed since only 45% of the schools provided such specialists.

TABLE 5.--Contingency Table for Practice: The Faculty Having a Proportionate Number of Males.

Attitudes	N	0-20%	21-40%	41-60%*	61-80%	81-100%
Low	10	0%	10%	90%	0%	0%**
High	10	10%	20%	60%	0%	10%
TOTAL	20	5%	15%	75%	0%	5%

Degrees of Freedom = 3; Contingency Coefficient = .3576408; Chi-square = 2.933; Critical Value = 7.81.

*Recommended practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, none had 0-20% of the faculty as male while 10% had 21-40% male; 20% had 41-60% male and none had 61-80% or 81-100% male.

The Chi-square value was not significant and the null subhypothesis was not rejected.

TABLE 6.--Contingency Table for Practice: Providing a Reading Specialist in the School.

Attitudes	N	Yes*	No
Low	10	50%	50%**
High	10	40%	60%
TOTAL	20	45%	55%

Degrees of Freedom = 1; Contingency Coefficient = .1000000; Chi-square = .202; Critical Value - 3.84.

*Recommended Practice.

**This is to be interpreted that of the ten randomly selected middle schools scoring low on student attitudes, 50% had reading specialists and 50% did not.

The Chi-square value was lower than the critical value and the null subhypothesis was not rejected.

Somewhat surprisingly a higher percentage of middle schools provided a modern foreign language specialist than a reading specialist (Table 7). It is interesting to note that 60% of the schools did provide modern foreign language specialists.

TABLE 7.--Contingency Table for Practice: Providing a Modern Foreign Language Specialist in the School.

Attitudes	N	Yes*	No
Low	10	50%	50%**
High	10	70%	30%
TOTAL	20	60%	40%

Degrees of Freedom = 1; Contingency Coefficient = .2000000; Chi-square - .833; Critical Value - 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected schools scoring low on student attitude, 50% provided a foreign language specialist and 50% did not.

The Chi-square value again was lower than the critical value at the .05 level of significance and the null subhypothesis was not rejected.

The contingency table on guidance counselors (see Appendix G, Table 51) indicates that 75% of the schools in the total sample had a guidance counselor. The null subhypothesis for this practice was not rejected.

A similar result was found in the practice of providing a psychologist or diagnostician at the building

or district level (see Appendix G, Table 52), as 70% of the schools provided such specialist. The Chi-square value was not significant and again the null subhypothesis was not rejected.

The orientation of incoming faculty members to the middle school was frequently overlooked in Michigan. The disparity between suggested practice and actual implementation is evident in Table 8. Although Alexander and Eichorn both placed emphasis on appropriate orientation for incoming faculty members, Table 8 indicates 94.44% of the schools did not devote more than twelve hours to this need.

TABLE 8.--Contingency Table for Practice: The Number of Hours of Orientation Provided for Incoming Faculty Members.

Attitudes	N	0	1-4	5-8	9-12	more*
Low	8	12.5%	37.5%	25%	12.5%	12.5%**
High	10	0 %	30%	10%	60%	0%
TOTAL	18	5.56%	33.33%	16.67%	38.8%	5.56%

Degrees of Freedom = 4; Contingency Coefficient - .4921577; Chi-square = 5.754; Critical Value = 9.49.

*Recommended Practice.

**This is to be interpreted that of eight randomly selected middle schools scoring low on student attitude, 12.5% gave no orientation to incoming faculty, while 37.5% gave 1-4 hours of orientation; 25% gave 5-8 hours; 12.5% gave 9-12 hours and 12.5% gave more than 12 hours of orientation.

The Chi-square value was not significant and the null subhypothesis was not rejected.

Related to this practice were the hours per year used for inservice to develop skill in using variety of middle school teaching strategies and methods (see Appendix G, Table 53). The Chi-square value was again lower than the critical value and the null subhypothesis was not rejected. More importantly, only 25% of the schools used more than twelve hours for inservice and 15% used three or less.

Another practice that was generally ignored in middle school development was the ratio of students to professional staff (Table 9). None of the sample schools met Eichorn's suggested ratio of approximately 17:1. Sixty percent of the schools scoring low in attitude had a 20-22:1 ratio which was somewhat better than the 30% factor of those schools in the high category. Fifty percent of the high attitude schools had a 23-25:1 ratio while only 20% of the low attitude schools established that ratio. In total, the schools clustered between 20-25:1 and failed to meet Eichorn's ratio by a significant amount (not less than three and more likely five students to every professional staff member).

TABLE 9.--Contingency Table for Practice: The Ratio of Students to Total Professional Staff.

Attitudes	N	16-19:1*	20-22:1	23-25:1	26-28:1	29+:1
Low	10	0%	60%	20%	20%	0%**
High	10	0%	30%	50%	20%	0%
TOTAL	20	0%	45%	35%	20%	0%

Degrees of Freedom = 2; Contingency Coefficient = 3202562; Chi-square = 2.286; Critical Value = 5.99.

*Recommended Practice.

**This is interpreted that of ten randomly selected middle schools scoring low on student attitude, none had a student to staff ratio of 16-19 to 1. Sixty percent had a 20-22:1 ratio. Twenty percent had a 23-25:1 ratio, 20% had a 26-28:1 ratio, and none of the schools had a 29 or above to 1 ratio.

The Chi-square value was not significant since it was lower than the critical value, and the null sub-hypothesis was not rejected.

Summary of Staff and Organization

None of the fifteen null subhypotheses was rejected in the section of the study on staff and organization as none of the critical values was statistically significant at the .05 level. Both the low and high populations employed the suggested practices of Alexander and Eichorn without statistically significant differences. It should be noted, however, that many suggested practices recommended by these authorities were not followed in the area of staff and organization.

Analysis of Data on Student Activity Program

The student activity program for the middle school was given considerable attention by both Eichorn and Alexander, and the frequency of after school social events was considered important by both authors (see Appendix G, Table 54). The Chi-square value was lower than the critical value indicating that student attitudes in schools scoring in the lowest or highest quartiles are unrelated to how many after school social events were provided per year per youngster. This null subhypothesis was, of course, not rejected. The implementation varied with 25% having zero to four such events per year, 35% having five to eight after school social events, 20% having 9-12 events and 20% having 16 or more after school social events per year.

Related to after school social events, and of further interest, was the particular type of social function conducted by the schools. It was important to note that 65% of the schools provided large group participation activities 81-100% of the time (Table 10). Only 15% of the schools provided large group participation activities less than 20% of the time.

TABLE 10.--Contingency Table for Practice: The Percent of the Events Which Were Large Group Participation Activities as Opposed to Couple Type Functions.

Attitude	N	0-20%	21-40%	41-60%	61-80%	81-100%*
Low	10	10%	0%	0%	20%	70%**
High	10	20%	10%	10%	0%	60%
TOTAL	20	15%	5%	5%	10%	65%

Degrees of Freedom = 4; Contingency Coefficient = .4250556; Chi-square = 4.410; Critical Value = 9.49.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 10% had large group activities 0-20% of the time; none 21-40%, and 41-60% of the time; while 20% had large group activities 61-80% of the time and 70% had such activities 81-100% of the time.

Again the Chi-square value indicated that the null subhypothesis was not rejected.

Another student activity practice recommended by Alexander and Eichorn was the involvement of students in a student-elected government (Table 11). Ninety percent of the schools in both the low and high quartiles had such an organization.

Further, two practices related to student activities--student developed activity programs and presence of intramural sports--had identical Chi-squares. These were not significant and the null subhypotheses were not rejected in either case (see Appendix G, Tables 55 and 56). Each practice was evident in 75% of the schools.

TABLE 11.--Contingency Table for Practice: Whether there is a Student Elected Government.

Attitudes	N	Yes*	No
Low	10	90%	10%**
High	10	90%	10%
TOTAL	20	90%	10%

Degrees of Freedom = 1; Contingency Coefficient = .0000000; Chi-square = 0.000; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 90% had a student elected government and 10% did not.

The null subhypothesis was not rejected since the Chi-square value was 0.00.

Two other practices related to student activities were not implemented to such a significant degree (Tables 12 and 13). Both--interest activity programs schedules as part of the school day and separate instructional units developing their own social events--were followed by 55% of the sample schools.

The use of service committees, another suggested student activity--practice, was not apparent in 80% of the schools (Table 14).

Failure to follow a suggested practice relating to interscholastic athletics was relatively surprising (Table 15). Although middle school authorities do not

TABLE 12.--Contingency Table for Practice: Interest Activity Programs Were Scheduled as Part of the School Day.

Attitudes	N	Yes*	No
Low	10	40%	60%**
High	10	70%	30%
TOTAL	20	55%	45%

Degrees of Freedom = 1; Contingency Coefficient = .2886751; Chi-square = 1.818; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of 10 randomly selected middle schools scoring low on student attitude, 40% had activities scheduled as part of the school day and 60% did not.

TABLE 13.--Contingency Table for Practice: Separate Instructional Units Ever Developing Their Own Social Activities.

Attitudes	N	Yes*	No
Low	10	70%	30%**
High	10	40%	60%
TOTAL	20	55%	45%

Degrees of Freedom = 1; Contingency Coefficient = .2886751; Chi-square = 1.818; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 70% had separate instructional units plan their own social activities and 30% did not.

The Chi-square value for each null subhypothesis was identical, and, because these values were lower than the critical level, the null subhypotheses were not rejected.

TABLE 14.--Contingency Table for Practice: Whether There is a Student Service Committee.

Attitudes	N	Yes*	No
Low	10	30%	70%**
High	10	10%	90%
TOTAL	20	20%	80%

Degrees of Freedom = 1; Contingency Coefficient = .2425342; Chi-square = 1.250; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude; 30% had student service committees and 70% did not.

Here again the Chi-square was not significant and the null subhypothesis was not rejected.

TABLE 15.--Contingency Table for Practice: Whether There Was Interscholastic Athletic Competition.

Attitudes	N	Yes*	No
Low	10	90%	10%**
High	10	100%	0%
TOTAL	20	95%	5%

Degrees of Freedom = 1; Contingency Coefficient = .2236068; Chi-square = 1.053; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 90% had interscholastic athletics and 10% did not.

The null subhypothesis was not rejected because the critical values was not significant.

recommend having interscholastic athletics, this recommendation was almost totally disregarded. Ninety-five percent of the schools in the sample had such a program.

Summary of Student Activity Program

Alexander and Eichorn suggested nine practices (resulting in that number of null subhypotheses) related to the students' activity program. None of the Chi-square values surpassed the critical values at the .05 level of significance in this section of the study, and none of the null subhypotheses was rejected. The practices in student activities followed by schools scoring both low and high on student attitude were not significantly different.

No significant differences were found between the practices of low and high scoring schools. Consequently emphasis should be placed on the level of implementation of suggested practices in all sample schools. While some were applied to a reasonable or even high degree (i.e., student elected government) others were almost totally disregarded as was apparent in the interscholastic athletics data.

Analysis of Data on Guidance

Guidance was another area for which Alexander and Eichorn presented suggested practices. One of the most prominent recommendations they made was the suggestion

that teachers become teacher-counselors (see Appendix G, Table 57). Seventy-five percent of the schools had teachers serve as teacher-counselors. Once again the Chi-square value for this practice was not significant, and the null subhypothesis was not rejected.

Results of the next practice involving middle school guidance were not surprising due to the fact that 25% of the sample schools had no guidance counselors on the staff (Table 16). The percent of implementation was noteworthy, however, because 60% of the schools had a student-counselor ratio in excess of 400 to 1.

TABLE 16.--Contingency Table for Practice: The Ratio of Students to Counselors.

Attitudes	N	0	200-1	300-1	400-1	Higher
Low	10	20%	10%	30%	30%	30%**
High	10	30%	0%	0%	10%	60%
TOTAL	20	25%	5%	20%	15%	45%

Degrees of Freedom = 4; Contingency Coefficient = .441100; Chi-square = 4.832; Critical Value = 9.44.

**This is to be interpreted that on ten randomly selected middle schools scoring low on student attitude, 20% had no guidance counselor, 10% had a student to counselor ratio of 200-1; 20% had a ratio of 300-1; 20% had a ratio of 400-1; and 30% had a higher student to counselor ratio.

The Chi-square was not significant and the null subhypothesis was not rejected.

Another suggested practice stressed for guidance purposes was students having a "school home" (Table 17). While there was no wide difference in this practice between the schools scoring low and high, the fact that 57.89% did not provide a school home deserves note.

TABLE 17.--Contingency Table for Practice: Each Student Had a Group and a Teacher Which He Identified as His School Home.

Attitudes	N	Yes*	No
Low	10	40%	60%**
High	9	44.44%	55.56%
TOTAL	19	42.11%	57.89%

Degrees of Freedom = 1; Contingency Coefficient = .9449013; Chi-square = .038; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 40% of the students had a group and teacher which he identified as his school home and 60% did not.

Once again the Chi-square value did not reach the level of significance, and the null subhypothesis was not rejected. It is important for the reader to note that almost all null subhypotheses to this point have not been rejected in a seemingly routine fashion.

Summary of Data on Guidance

The three null subhypotheses in guidance were not significant at the .05 level and were not rejected. The guidance practices followed by middle schools in Michigan scoring low and high on student attitudes were not significantly different.

Analysis of Data on Instructional Program

As stated earlier, Alexander and Eichorn emphasized the need for certain practices in the instructional program. This emphasis manifested itself in the study through the inclusion of twenty-eight instructional practices and represents the largest section of the study.

One suggested practice, homogeneous sex grouping in practical arts, deserves early attention because of its Chi-square value (Table 18). The Chi-square value was significant and the null subhypothesis was rejected. This was the first rejection of a null subhypothesis in the study, and it was important to note because schools scoring low more fully implemented (60% implementation) Eichorn's suggested practice than those schools scoring high. There was, in fact, a high level of non-implementation by the schools scoring high (90% of them did not group practical arts students by sex).

TABLE 18.--Contingency Table for Practice: Students Being Grouped by the Same Sex in Practical Arts.

Attitudes	N	Yes*	No
Low	10	60%	40%**
High	10	10%	90%
TOTAL	20	35%	65%

Degrees of Freedom = 1; Contingency Coefficient = .4642383; Chi-square = 5.495; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 60% had students grouped by the same sex in practical arts and 40% did not.

While specific practices were recommended by Eichorn and/or Alexander, the extent of implementation was not always recommended. Six such suggested practices fall into this category: (1) equivalent grade level of student population in the school (see Appendix G, Table 58); (2) percent of students completing the program in the allocated time (see Appendix G, Table 59); (3) percent of student program which was exploratory (see Appendix G, Table 60); (4) percent of the student program which was elective (see Appendix G, Table 61); (5) the part of the student school day spent on the large concept areas of math, science, language and social science (see Appendix G, Table 62); and (6) the frequency of changes in student schedules (see Appendis G, Table 63). Each of the null

subhypotheses for these practices had Chi-square values lower than their respective critical values and was not rejected.

There are other practices which did not have specific degree of implementation recommendations. They deserve special attention because they are very highly endorsed by Eichorn and Alexander as appropriate to middle school. Yet, each was in operation at a significantly low level in the schools sampled as can be observed with the use of independent study (Table 19). Since 55% of the schools involved the average student in independent study less than 5% of the school day, the application of this practice can be consequently described as conspicuously low. Even worse was the fact that 30% fell in the 6-10% time range indicating that 85% of the schools sampled had the average student spend less than 10% of his time studying independently.

As with independent study, team teaching was also infrequently implemented (although there was no specific recommendation as to an expected level of implementation (Table 20). In 75% of the schools, less than 15% of the average student's day was spent in classes that were team taught while 95% spent a quarter of their time--or less--in such classes.

TABLE 19.--Contingency Table for Practice: The Percent of the Average Student's Time Spent on Independent Study.

Attitudes	N	0-5%	6-10%	11-15%	16-20%	21+%
Low	10	50%	30%	10%	10%	0%**
High	10	60%	30%	9%	10%	0%
TOTAL	20	55%	30%	5%	10%	0%

Degrees of Freedom = 3; Contingency Coefficient = .2274294; Chi-square = 1.091; Critical Value = 7.81.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% had the average students spending 0-5% of their time on independent study, 30% spent from 6-10% of their time; 10% spent 11-15% of their time; 10% spent 16-20% of their time; and 0 spent 21% or more time on independent study.

The null subhypothesis was not rejected. (Student attitudes in schools scoring in the lowest or highest quartile are unrelated to the percent of the average student's time spent on independent study.)

TABLE 20.--Contingency Table for Practice: What Part of the Average Student's Day was Spent in Classes That Were Team Taught.

Attitudes	N	0-15%	16-25%	26-35%	36-49%	50+%
Low	10	80%	10%	0%	0%	10%**
High	10	70%	30%	0%	0%	0%
TOTAL	20	75%	20%	0%	0%	5%

Degrees of Freedom = 2; Contingency Coefficient = .3060320; Chi-square = 2.065; Critical Value = 5.99.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 80% of the schools had 0-15% of the student's day team taught; 10% had from 16-25% so taught while 0 had 26-35% and 36-49%; while 10% had 50% or more of the student's day in classes that were team taught.

The Chi-square value was not significant and the null subhypothesis was not rejected.

Another high recommendation, low implementation practice was non-gradedness. This low level of implementation by both low and high attitude schools was reflected in Table 21 where 90% of the schools reported non-graded, continuous progress in only 20% or fewer of their programs. This was a low implementation percentage for a practice which was very highly recommended by Eichorn and Alexander; again, however, there was no specific degree of implementation recommended by them.

TABLE 21.--Contingency Table for Practice: The Portion of the Total Curriculum Which Can be Termed Non-Graded Continuous Progress Programs.

Attitudes	N	0-20%	21-40%	41-60%	61-80%	81-100%
Low	10	90%	0%	0%	0%	10%**
High	10	90%	10%	0%	0%	0%
TOTAL	20	90%	5%	0%	0%	5%

Degrees of Freedom = 2; Contingency Coefficient = .3015113; Chi-square = 2.000; Critical Value = 5.99.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 90% of the schools had 0-20% of their curriculum as non-graded continuous progress programs, 0% had 21-40% such programs, 0% had 41-60% such programs, 0% had 61-80% such programs and 10% had 81-100% of their curriculum as non-graded continuous progress programs.

The Chi-square value was lower than the critical value and the null subhypothesis was not rejected.

There were, however, suggested practices which did have specific recommendations and which, somewhat surprisingly, were followed to a high percentage--despite the fact that they too did not reach a Chi-square value of significance and the null subhypotheses were not rejected. The practice of a physical education program with strong emphasis on recreational activities was implemented in 80% of the schools (see Appendix G, Table 64). The practice of assigning students in grades seven and eight to departmentalized classes was utilized by 90% of the schools (see Appendix G, Table 65).

Even more impressive in its percentage of implementation was the recommended type of basic curriculum (Table 22). The fact that all of the schools indicated that these basic concept areas were the focus of their curriculum was important for this was one of the rare occasions in the study when all schools were implementing a suggested practice, albeit very basic.

The rarity of attaining 100% implementation was underscored by further examination of the suggested instructional practices. While none of the respective null subhypotheses was rejected, there were schools whose percentages indicated a rather moderate (52.94% to 60%) implementation of the practices. Homogeneous student grouping was used by 60% of the schools (see Appendix G, Table 66). Fifty-nine percent of the students were being

TABLE 22.--Contingency Table for Practice: The Curriculum Developed Around the Large Concept Areas of Mathematics, Science, Language and Social Studies.

Attitudes	N	Yes*	No
Low	10	100%	0%**
High	10	100%	0%
TOTAL	20	100%	0%

Degrees of Freedom = 0; Contingency Coefficient = .00000; Chi-square = 0.000; Critical Value = 0.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 100% had the curriculum developed around the large concept areas of mathematics, science, language and social studies.

The Chi-square value was, of course, not significant and the null subhypothesis was not rejected.

grouped by the same sex in physical education (see Appendix G, Table 67), and 55% were being regrouped during the year (see Appendix G, Table 68). Likewise, 55% of the samples had a formal reading program available for students who needed it (see Appendix G, Table 69), and 52.94% had self-contained classrooms for fifth and sixth grade students (see Appendix G, Table 70).

This level of implementation was not maintained with a number of other suggested practices and each of their respective null subhypotheses were not rejected. In fact, many of the sample schools fell below the 50% level of implementation. High school students were used

as tutors in only 45% of the schools sampled (see Appendix G, Table 71). Final examinations, which were considered inappropriate by the authorities, were not given in only 45% of the schools (see Appendix G, Table 72).

Falling further below the 50% level implementation was the suggested practice of individual reporting to parents (Table 23). Only 42.11% of the sample middle schools followed this essential practice, indicating that the wide majority of these schools still employed traditional graded reporting systems.

TABLE 23.--Contingency Table for Practice: Whether Individual Student Progress Reporting System Was Used With Parents in Contrast to Pass/Fail Grading Systems.

Attitudes	N	Yes*	No
Low	10	40%	60%**
High	9	44.44%	55.56%
TOTAL	19	42.11%	57.89%

Degrees of Freedom = 1; Contingency Coefficient = .0449013; Chi-square = .038; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 40% had an individual student reporting system as opposed to pass/fail grading and 60% did not.

The Chi-square value was once again not significant and the null subhypothesis was as well not rejected.

Another important practice disregarded by a majority of the sample schools was instruction in discovery methods (Table 24). The practice of instruction in discovery methods in 50% of the schools was being taught to 40% or fewer of the students. Of even greater consequence was the fact that only 30% of the schools were instructing 81% or more of their students in the use of this very basic skill!

TABLE 24.--Contingency Table for Practice: The Percent of Students Instructed in Discovery Methods.

Attitudes	N	0-20%	21-40%	41-60%	61-80%	81-100%
Low	10	30%	20%	30%	0%	20%**
High	10	30%	20%	0%	10%	40%
TOTAL	20	30%	20%	15%	5%	30%

Degrees of Freedom = 4; Contingency Coefficient = .4249588; Chi-square = 4.667; Critical Value = 9.49.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 30% instructed 0-20% of their students in discovery methods; 20% so instructed 21-40% of their students; 30% so instructed 41-60% of their students, none were so instructed at the 61-80% level and 20% of the students instructed 81-100% of their students in discovery methods.

The Chi-square value was lower than the critical value, and the null subhypothesis was not rejected.

Declining even further in implementation than the use of discovery methods were programs aimed at development of personal values (Table 25). What was noteworthy was the fact that only 30% of the schools had programs aimed at developing personal values, a 70% disregard of a suggested practice by the sample schools.

TABLE 25.--Contingency Table for Practice: A Program Aimed at Developing Personal Values.

Attitudes	N	Yes*	No
Low	10	40%	60%**
High	10	20%	80%
TOTAL	20	30%	70%

Degrees of Freedom = 1; Contingency Coefficient = .2132007; Chi-square = .952; Critical Value - 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 40% had a program in developing personal values and 60% did not.

Again the null subhypothesis was not rejected as the Chi-square value was lower than the critical value.

The degree of student participation in planning class activities was similar to the practice of developing personal values as again only 30% of the sample schools employed this suggested practice (Table 26).

TABLE 26.--Contingency Table for Practice: The Students Participated on a Regular Basis in Planning Daily Instructional Activities.

Attitudes	N	Yes*	No
Low	10	50%	50%**
High	10	10%	90%
TOTAL	20	30%	70%

Degrees of Freedom = 1; Contingency Coefficient = .400000; Chi-square = 3.810; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% of the students participated on a regular basis in planning daily instructional activities and 50% did not.

This practice had a Chi-square value which was not significant, and the null subhypothesis was not rejected.

Even more noticeable because of its lack of application was the practice of having a cultural studies program (Table 27). The fact that only 15% of the schools sampled followed the practice of having a cultural studies program indicated almost total disregard for this practice.

The same disregard characterizing cultural studies was observed in the practice of not requiring group showers in the physical education program (see Appendix G, Table 73). Eighty-five percent of the schools had this requirement and, as usual, the Chi-square was not significant and the null subhypothesis was not rejected.

TABLE 27.--Contingency Table for Practice: There Being a Cultural Studies Program.

Attitudes	N	Yes*	No
Low	10	20%	80%**
High	10	10%	90%
TOTAL	20	15%	85%

Degrees of Freedom = 1; Contingency Coefficient = .1386750; Chi-square = .392; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 20% had a cultural studies program and 80% did not.

The Chi-square value again was not significant, and the null subhypothesis was not rejected.

Another practice which did not have a significant Chi-square, and was even lower in implementation, was the suggested practice of having a teacher-supervised study skills center (Table 28). The percentage of implementation of this practice was a very low 10.53% indicating almost total disregard of this practice.

The last practice analyzed in the Instructional Programs section of the study was homogeneous sex grouping in fine arts. This practice had a Chi-square which was not significant (see Appendix G, Table 74). Only 5% of the sample (one school) employed this practice suggested by Donald Eichorn.

TABLE 28.--Contingency Table for Practice: There Was an Established Teacher Supervised Study-Skills Center.

Attitudes	N	Yes*	No
Low	9	11.11%	88.89%**
High	10	10%	90%
TOTAL	19	10.53%	89.47%

Degrees of Freedom = 1; Contingency Coefficient = .0180746; Chi-square = .006; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 11.11% had a teacher supervised study skills center and 88.89% did not.

The Chi-square value was not only not significant but much lower than the critical value, and the null subhypothesis was not rejected.

Summary of Analysis of Instructional Program

Twenty-eight suggested instructional practices were studied in this section and statistical analysis indicated that 27 were not significant at .05 level of significance. Only one practice reached significance, and the null subhypothesis was rejected. Since it was the only one out of 28, it is possible that rejection may have been due to chance at the .05 level of significance.

As with the previous sections of the study, once again the instructional practices were not significantly different between schools scoring low and high on student attitudes in the selected middle schools.

While there were no significant differences in practices between high and low scoring schools, the percentages of implementation indicate that there were wide variations in the aspect of the study of the instructional program. Some, such as the practice of curriculum being developed around math, science, language, and social studies, were completely implemented (see Table 22). However, most were not, and some fell to a 15% or lower level of implementation (see Tables 27, 28, 73 and 74) suggesting nearly total disregard for these practices by the Michigan middle schools examined.

Analysis of Data on School Plant and Equipment

Alexander and Eichorn had some definite suggestions regarding the design of middle school plants and the equipment required for a transescent program. One set of suggested practices related to the provision of certain types of laboratory facilities. In all practices regarding laboratory facilities the Chi-square values were not significant and the null subhypotheses were not rejected. There were no significant differences between laboratory facilities of those schools scoring low or high on student attitude but the percentage of implementation for the two samples on this practice was quite high. Home economics laboratories, for example, were provided in 85% of the schools visited (see Appendix G, Table 75).

Similarly, 85% of the sample schools provided an art laboratory (see Appendix G, Table 76), while 80% provided a laboratory for music (see Appendix G, Table 77). Two practices, provision of laboratories for industrial arts (see Appendix G, Table 78) and science (see Appendix G, Table 79), were implemented by 75% of the schools. In addition, there was a resource center in 75% of these schools (see Appendix G, Table 80).

While 75% of the sample schools provided resource centers it is interesting to note what went on in them (Table 29). Because 75% of the schools had resource centers and 70% allowed groups of students to work in areas permitting discussion, it can be (commendably) concluded that only one of the schools having resource centers did not provide an area for group discussion.

TABLE 29.--Contingency Table for Practice: Allowability of Groups of Students to Work Cooperatively on Research Projects in an Area of the Resource Center Without Restriction on Conversation and Discussion.

Attitudes	N	Yes*	No
Low	10	70%	30%**
High	10	70%	30%
TOTAL	20	70%	30%

Degrees of Freedom = 1; Contingency Coefficient = 0.0000; Chi-square = 0.000; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 70% of the schools allowed students to work on projects in the resource center without restriction on conversation and 30% did not.

Not surprisingly, the Chi-square value was not significant and the null subhypothesis was not rejected.

Further, in the use of the resource center as suggested by the authorities, some audio-visual equipment was provided for student use (Table 30). Resource Centers in 68.42% of the sample schools provided slides, filmstrips, or television.

TABLE 30.--Contingency Table for Practice: Slides, Filmstrips, or Television Can Be Viewed in the Resource Center.

Attitudes	N	Yes*	No
Low	9	77.78%	22.22%**
High	10	60%	40%
TOTAL	19	68.42%	31.58%

Degrees of Freedom = 1; Contingency Coefficient = .1875744; Chi-square = .693; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 77.78% had slides, filmstrips or television to be viewed in the resource center while 22.22% did not.

The Chi-square value was lower than the critical value and the null subhypothesis was not rejected.

Another practice related to resource centers involved the use of listening devices but they were not as common as slides, filmstrips and television (Table 31). Incidence of listening devices in the resource centers was quite low at 30%.

TABLE 31.--Contingency Table for Practice: Listening Devices Were Provided in the Resource Center.

Attitudes	N	Yes*	No
Low	10	40%	60%**
High	10	20%	80%
TOTAL	20	30%	70%

Degrees of Freedom = 1; Contingency Coefficient = .2132007; Chi-square = .952; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 40% of the schools provided listening devices in the resource center and 60% did not.

The null subhypothesis was not rejected since the Chi-square value was lower than the critical value.

The use of listening devices in resource centers was not the only area in which the implementation of practices related to plant and equipment was low. One of the several suggested practices relating to school plant was a description of the type of lighting recommended (Table 32). Only 20% of the Michigan middle schools sampled were above average (the suggested value), while 30% were below average.

A similar finding to that of lighting was made regarding the practice of making the interior of the school aesthetically pleasing (Table 33). Only 30% of the schools were considered above average aesthetically.

TABLE 32.--Contingency Table for Practice: The Interior of the School Being Well Illuminated.

Attitudes	N	Below Average	Average	Above Average*
Low	10	40%	30%	30%**
High	10	20%	70%	10%
TOTAL	20	30%	50%	20%

Degrees of Freedom = 2; Contingency Coefficient = .3747014; Chi-square = 3.267; Critical Value = 5.99.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 40% were illuminated below average, 30% were average and 30% were above average.

As the reader has almost monotonously begun to anticipate, the Chi-square value was not significant and, once again, the null subhypothesis was not rejected.

TABLE 33.--Contingency Table for Practice: The Interior of the School Being Aesthetically Pleasing.

Attitudes	N	Below Average	Average	Above Average*
Low	10	50%	10%	40%**
High	10	30%	50%	20%
TOTAL	20	40%	30%	30%

Degrees of Freedom = 2; Contingency Coefficient = .4010476; Chi-square = 3.833; Critical Value = 5.99.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% were below average in having an aesthetically pleasing interior while 10% were average and 40% were above average.

Once again the null subhypothesis was not rejected as a result of a low Chi-square value.

An identical finding to that of interior aesthetics was made in regard to having the interior of the school well maintained. The null subhypothesis was not rejected and only 30% of the sample schools reached the suggested level (see Appendix G, Table 81).

The exterior maintenance was only slightly better. The null subhypothesis was not rejected, but the suggested maintenance level reached a slightly higher 40% (see Appendix G, Table 82).

Another practice which did not achieve a high percentage was the provision of adequate equipment for students (Table 34). Only 35% met the suggested practice level while 40% were below average in providing equipment for students.

TABLE 34.--Contingency Table for Practice: Classroom Provided with Adequate Equipment for Student Experiences in the Content Field Being Studied.

Attitudes	N	Below Average	Average	Above Average*
Low	10	40%	30%	30%**
High	10	40%	20%	40%
TOTAL	20	40%	25%	35%

Degrees of Freedom = 2; Contingency Coefficient = .1298227; Chi-square = .343; Critical Value = 5.94.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 40% were below average in providing equipment for student experience in the content field being studied, 30% were average, and 30% were above average.

The Chi-square was not significant and the null subhypothesis was not rejected.

Deficiencies were found in three distinct features of the school plant design suggested by Alexander and Eichorn. Various sized spaces for large and small groups was the first such practice suggested (Table 35). This was followed by spaces for individual study (Table 36), and spaces for private conferences between teachers and students (Table 37). In all cases the implementation level was 40% with all other percentages in the tables also identical.

TABLE 35.--Contingency Table for Practice: Space of Varying Size Being Available for Use by Large and Small Groups.

Attitudes	N	Yes*	No
Low	10	50%	50%**
High	10	30%	70%
TOTAL	20	40%	60%

Degrees of Freedom = 1; Contingency Coefficient = .200000; Chi-square = .833; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% provided space varying in size for use by large and small groups while 50% did not.

TABLE 36.--Contingency Table for Practice: Spaces for Individual Study Being Provided.

Attitudes	N	Yes*	No
Low	10	50%	50%**
High	10	30%	70%
TOTAL	20	40%	60%

Degrees of Freedom = 1; Contingency Coefficient = .20000; Chi-square = .833; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% provided spaces for individual study and 50% did not.

TABLE 37.--Contingency Table for Practice: Space for Private Conference Between Pupil and Teacher Being Provided.

Attitudes	N	Yes*	No
Low	10	50%	50%**
High	10	30%	70%
TOTAL	20	40%	60%

Degrees of Freedom = 1; Contingency Coefficient = .20000; Chi-square = .833; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% provided space for conferences between pupil and teacher, and 50% did not.

Each of the three previous tables was identical. Their respective Chi-squares were not significant and their null subhypotheses were not rejected.

The authors recommended a design including wings, clusters, or other decentralizing features for middle schools (Table 38). The degree of implementation was not high (only 27% of the facilities provided wings, clusters, or other arrangements which permitted decentralization).

TABLE 38.--Contingency Tables for Practice: Facility Provides Wings, Clusters or Other Arrangements Which Permit Decentralization.

Attitudes	N	Yes*	No
Low	10	30%	70%**
High	10	20%	80%
TOTAL	20	25%	75%

Degrees of Freedom = 1; Contingency Coefficient = .1147079; Chi-square = .267; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 30% provided wings, clusters or decentralization in the facility and 70% did not.

The Chi-square was not significant and again the null subhypothesis was not rejected.

Summary of Analysis of Data on School Plant and Equipment

There were 18 contingency tables in the section of the study on plant and equipment, and all of the Chi-square values computed were found not significant at the .05 level. There was no significant difference in the practices related to plant and equipment between the low or high schools on student attitude.

Although some practices followed the recommended practices of Eichorn and Alexander, many had a percentage implementation that ranged from medium to very low.

Analysis of Data of Special Treatment Questions

A few of the questions were developed to give specific insights into other factors which may have affected student attitude. The first of these questions dealt with the size of the school (Table 39).

TABLE 39.--Contingency Table: The Enrollment in the School.

Attitude	N	0-300	301-500	501-700	701-900	901 or more
Low	10	10%	0%	40%	30%	20%**
High	10	10%	30%	20%	30%	10%
TOTAL	20	10%	15%	30%	30%	15%

Degrees of Freedom = 4; Contingency Coefficient = .4082483; Chi-square = 4.000; Critical Value = 9.49.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 10% had an enrollment of 0-300, none had 301-500 student enrollment; 40% had an enrollment of 501-700; 30% had an enrollment of 701-900 and 20% had 901 or more students.

The Chi-square value was not significant and the null sybhypothesis was not rejected. The size of the school was not a statistically significant practice when low and high student attitude scores were related, and this factor cannot be considered an important influence on this study.

The second special treatment area included a series of questions related to the sociological make-up of the student population in each of the sets of schools. Since each is interrelated, the five tables are listed consecutively (Tables 40, 41, 42, 43, and 44).

TABLE 40.--Contingency Table: The Percent of Student Population in the Lower-Lower Sociological Class.

Attitudes	N	0-20%	21-40%	41-60%	61-80%	81-100%
Low	10	90%	10%	0%	0%	0%**
High	10	100%	0%	0%	0%	0%
TOTAL	20	95%	5%	0%	0%	0%

Degrees of Freedom = 1; Contingency Coefficient = .223606; Chi-square = 1.053; Critical Value = 3.84.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 90% had 0-20% of their students in the lower-lower class while 10% had 21-40% in this class and there were none in the other percentages.

TABLE 41.--Contingency Table: The Percent of Student Population in the Upper-Lower Sociological Class.

Attitudes	N	0-20%	21-40%	41-60%	61-80%	81-100%
Low	10	60%	40%	0%	0%	0%
High	10	60%	10%	20%	10%	0%
TOTAL	20	60%	25%	10%	5%	0%

Degrees of Freedom = 3; Contingency Coefficient = .4399413; Chi-square = 4.800; Critical Value = 7.81.

TABLE 42.--Contingency Table: The Percent of Student Population in the Lower-Middle Sociological Class.

Attitudes	N	0-20%	21-40%	41-60%	61-80%	81-100%
Low	10	50%	40%	10%	0%	0%
High	10	50%	30%	20%	0%	0%
TOTAL	20	50%	35%	15%	0%	0%

Degrees of Freedom = 2; Contingency Coefficient = .1524986; Chi-square = .476; Critical Value = 5.99.

TABLE 43.--Contingency Table: The Percent of Student Population in the Upper-Middle Sociological Class.

Attitudes	N	0-20%	31-40%	41-60%	61-80%	81-100%
Low	10	70%	10%	0%	20%	0%
High	10	70%	20%	10%	0%	0%
TOTAL	20	70%	15%	5%	10%	0%

Degrees of Freedom = 3; Contingency Coefficient = .3779645; Chi-square = 3.333; Critical Value = 7.81.

TABLE 44.--Contingency Table: The Percent of Student Population in the Lower-Upper Sociological Class.

Attitudes	N	0=20%	31-40%	41-60%	61-80%	81-100%
Low	10	100%	0%	0%	0%	0%
High	10	100%	0%	0%	0%	0%
TOTAL	20	100%	0%	0%	0%	0%

Degrees of Freedom = 0; Contingency Coefficient = 0; Chi-square = 0; Critical Value = 0.

None of the five Chi-square values are significant and the null subhypotheses were not rejected. This indicates that social classes were unrelated to schools scoring low and high on student attitude. It is critical to note that the two extreme sociological classes (the lower-lower and lower-upper) had the smallest populations. The populations clustered around the upper-lower, lower-middle, and upper-middle. It is also interesting that the two schools having the highest percentage (61-80%) in the upper-middle class were in the low attitude schools.

Of course, the special treatment questions on sociological background could not be rejected--nor could the last special treatment question which dealt with events that would have significantly affected student attitudes (see Appendix G, Table 83). There were but two schools (20%) of the high sample which had such an event. Indications were that a change in administration in one of these schools had improved the attitudes. In the other case there had been a teachers' strike; however, this school had scored in the highest quartile.

The special treatment question indicated that the factors measured had no significant effect in the schools scoring low or high on student attitude.

Analysis of Data on Question of Teachers and Students

A series of five corresponding questions were asked of the building administrator, teachers, and students. Single correlations were used to help determine whether or not the perceptions of the administrator and teacher and the administrator and student were similar.

Teachers

The first question asked of teachers related to the number of hours per year, if any, were used for middle school in-service (see Appendix D, Question 81). The correlation was a rather strong .63938022. The correlation of teachers serving as guidance counselors (see Appendix D, Question 82) was a weak .19245009. Conversely, the administrators and teachers had a fairly strong correlation of .51511399 on the question about amounts of independent study provided students (see Appendix D, Question 83). An almost perfect correlation of .92213889 was achieved on the question of team teaching (see Appendix D, Question 84). However, a negative correlation of -.07936508 was obtained on the question of continuous progress (see Appendix D, Question 85).

In summary, three strong correlations were found between identical questions asked of teachers and administrators; one was weak while one was negative.

Students

The questions asked of students and administrators were similar in pattern to those asked teachers and administrators. The first referred to social events (see Appendix D, Question 86) and resulted in a fair correlation of .52028660. A little weaker correlation of .40697547 accompanied the question concerning large group activity programs (see Appendix D, Question 87). A fairly good correlation (.57735027) between administrators and students was recorded dealing with student planning of activity programs (see Appendix D, Question 88). The correlation on student participation in planning daily classroom activities (see Appendix D, Question 89) was -.04761905. Quite interestingly the students indicated more of this participation than the administrators.

The question about changes in student schedules (see Appendix D, Question 90) had an extremely high .95642702 correlation.

Overall, the questions resulted in three strong correlations, one relatively weak correlation, and one negative correlation that had students presenting the program more favorably than the administrators.

Summary

Null Hypothesis

The results of the statistical treatment did not justify the rejection of the null hypothesis which proposed:

> No difference will be found in the practices of ten randomly selected middle schools scoring in the lowest quartile of middle schools and ten randomly selected middle schools scoring in the highest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

Altogether there were 73 practices listed. A contigency table and a corresponding null subhypothesis was developed for each of the practices. With one exception, the resulting Chi-square values were not significant at the .05 level of significance. The one exception was discounted since it represented less than 5% of the responses and the possible significance of the results could be attributed to chance. The major null hypothesis, then, was not rejected because only one minor Chi-square value surpassed its ascribed critical value.

This result would indicate that the total practices followed by the schools scoring in either the lowest or highest student attitude quartiles were not significantly different. From a statistical viewpoint, the lack of difference is overwhelming.

Contingency Coefficient

The contingency coefficients were included to add another dimension to the study. On the whole these coefficients turned out extremely low with seven of the practices having no significant correlations. Further, the highest correlation reached .4921577 (see Table 8) followed by one of .4734321 (see Table 50). Generally weak coefficients are interpreted as indication that the relationship between the practices followed by the sample schools and the attitudes recorded for those schools were generally quite weak.

Degree of Implementation of the Suggested Practices

Analysis of the degree of implementation data makes it sufficiently apparent that although certain suggested practices were carried out by the sample schools, other practices were infrequently implemented.

Of the 59 practices for which the authorities established a minimum level of implementation, two practices were implemented by all of the schools while one was not followed by any of the schools. (A list of the 59 practices and the respective implementation levels is provided in Appendix H.)

The mean total score of the level of implementation for these 59 practices in the middle schools sampled was

54.79%. This suggests that 45.21% of the practices suggested by Eichorn and Alexander were not being followed by middle schools scoring in the lowest or highest quartile on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study was conducted to determine what relationships existed between practices followed by selected middle schools scoring in the lowest and highest quartile on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7. It also described the degree to which certain practices were implemented by those schools.

The practices selected for study were those suggested by two national middle school authorities, William Alexander and Donald Eichorn. Alexander and Eichorn were selected as the outstanding authorities by a jury composed of one administrative practitioner in an exemplary middle school and five Michigan State University doctoral program graduates whose dissertations centered on the middle school. As a result of the jury's recommendations, 73 practices were featured in the construction of a questionnaire. Where ambiguities of interpretation may have existed, definitions of terms were provided. In addition, seven questions considered significant to the

study were included in the questionnaire. These involved school size, social classifications of the school population, and events which may have affected attitude. Added to this were five questions independently directed at teachers, students and the building administrator to determine to what degree their perceptions agreed or disagreed.

A random sample of middle schools was generated from the data in the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7. This data was made available by the Michigan Department of Education. The top and bottom quartiles were identified after recording all middle school scores in the state. Then a random table of numbers was used to select ten schools from each quartile. Each of these schools was visited.

The writer traveled throughout the State of Michigan during the late spring of 1972 to observe the twenty schools thus selected. Administrators were interviewed using a questionnaire which included the suggested practices and seven items involving school size, events which would have affected student attitude, and social classification of the school population. In addition, a teacher and a student were also interviewed. They were asked the same five questions as the administrator to determine their perceptions of the practices followed

in each of the schools. Lastly, the school plant and equipment were observed by the writer. The results of these observations were added to the interview data recorded earlier.

The contingency table was used to determine the relationship between schools scoring low and high on student attitude and the various practices and procedures implemented. This Chi-square test was utilized at the .05 level of significance. In addition to determining the relationship between practices in low and high attitude schools, this table also provided percentages to describe the degree of implementation of the specific practice. The percentage of implementation in low and high quartile schools was included as was the total percentage.

This same statistical treatment was used in the three special treatment sections (school size, social classification of the student population, and events which may have affected student attitude).

A simple correlation was used in questions asked administrators and teachers. This statistic indicated the similarity or lack of similarity in perception of the five practices. The correlation was also used to evaluate the five responses reported by administrators and students.

Findings

The major null hypothesis was:

Null Hypothesis: No difference will be found in the practices of ten randomly selected middle schools scoring in the lowest quartile of middle schools and ten randomly selected middle schools scoring in the highest quartile of middle schools as identified by ranking middle schools on the student attitude section of the 1971 Michigan Assessment Test of Basic Skills, Grade 7.

The null subhypotheses were:

Null Subhypotheses: The student attitude in schools scoring in the lowest and highest quartiles in student attitudes are unrelated to: the specific practices.

The significance level for the major null hypothesis was generated from the 73 null subhypotheses. The writer did not anticipate the results which the research revealed. Seventy-two of the 73 null subhypotheses were not rejected--a most impressive statistical result and contrary to what might be expected. While the results in Chapter IV were very repetitive, the conclusions should not be taken for granted. The impressiveness of the results was built upon the very repetition of non-rejection of the null sub-hypotheses. The research clearly indicated that the major null hypothesis should not be rejected and therefore there was no significant differences in the practices of schools scoring in the lowest and highest quartile on student attitude which was the most important finding of the study.

The same results were recorded for the three special-question sections on school size, social classification, and events which may have affected student

attitude. Each Chi-square value lacked significance and the null subhypotheses were not rejected.

Through the use of a simple correlation, it became evident that the perceptions of administrators and teachers were reasonably similar. Three of the five questions asked of each group resulted in coefficients ranging from .5 to .9. The five questions asked of administrators and students had an identical range of correlation. In addition the students perceived one practice as occurring more frequently. This result indicated that the students had a more positive perception of the school.

The last part of the study described the degree to which observed practices were implemented. The total percentages were emphasized because there was not a statistically significant difference in practices between those schools in the lowest quartile on student attitude and those in the highest quartile. Of the 59 practices for which Alexander and Eichorn specifically recommended levels of implementation, 54.79%, or slightly more than one-half, reached the appropriate level. This means that 45.21% of the practices were not followed. In terms of recommendations of the authorities, the practices were followed slightly more than half the time. In short, middle schools were only doing half of what should be done--a reason for grave concern. There were also recommended practices for which no level of implementation

was given. These practices included such areas as independent study, team teaching, continuous progress programs, hours of in-service, number of activity programs, and proportion of exploratory and elective programs. Although no identifiable level of implementation was recommended by the authorities, the degree to which these practices were used was low.

The degree to which all 73 practices were implemented was less than complementary to the middle schools in Michigan that scored in the lowest and highest quartiles on student attitudes.

Conclusions

The following conclusions were drawn from the findings of the study:

1. On the basis of the 73 practices examined, there were no significant differences existing between middle schools scoring in the lowest quartile and those scoring in the highest quartile on the state test of student attitude. These practices encompassed the areas of staff and organization; student activities; guidance; instructional programs; school plant and equipment.

2. There were no significant differences between Michigan middle schools scoring in the lowest and highest quartiles on the state test of student attitudes and the school size, social class of the student populations, and events which may have affected student attitude.

3. Administrators and teachers perceived the practices of their respective middle schools quite similarly.

4. Administrators and students perceived the practices of their respective middle schools quite similarly with the student perception being slightly more positive.

5. Schools scoring in the lowest and highest quartiles on student attitude only implemented slightly more than one-half of the practices recommended by the national middle school authorities.

Recommendations

Following are recommendations for additional research on the data and information obtained by the investigator:

1. Concentrated studies should be conducted on specific middle school practices (e.g., discovery methods and continuous progress programs), to determine the precise effect each practice has on transescents in both the affective and cognitive domains.

2. A research design should be developed to determine the appropriate degree of implementation for specific practices (e.g., team teaching).

3. A study should be developed to analyze the cost factors involved in implementing practices recommended by the middle school authorities.

4. A study should be conducted to determine if the implementation of the suggested practices has an effect on student attitudes in schools where there have been racial conflicts or other incidents of student unrest.

5. A replication of the present study should be conducted in the next year or two to determine if there has been any change in the measured attitudes and the practices observed.

6. An experimental design should be used to compare practices in middle schools and all other seventh grades in Michigan which have scored high on student attitude.

7. Research should be conducted in other states to confirm or reject the findings of the Michigan study.

8. An indepth study should be implemented to determine the relationship between the degree of implementation of middle school practices and the attitude of the community toward the school.

9. A research design should be developed to determine the impact of the attitudes of high and low ranking middle school graduates and their future secondary educational success.

In addition, the researcher would make some recommendations for research not based directly upon his findings, but rather upon his observations during the study and readings while preparing the study.

A. A study should be undertaken to identify other factors which may affect student attitudes such as numbers of younger versus older staff, elementary versus secondary certificated staff, staff rapport with students, and general instructional climate of various middle schools.

B. An experimental design should be used to determine the appropriate placement of fifth grade students.

C. Research is essential to determine if any unique qualifications are necessary for a middle school administrator.

D. Student attitude in the schools varied widely from one location to another without obvious differences in school plant and instructional program. It would be particularly interesting and beneficial to the field of middle school education to research in greater depth those facets of the school which individually or in combination contribute to particular student attitudes.

SELECTED BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

Books

Alexander, William, et al. The Emergent Middle School. New York: Holt, Rinehart and Winston, Inc., 1968.

Bernard, H. W., and Huchins, W. C., eds. Readings in Human Development. Boston: Allyn and Bacon, Inc., 1967.

Bossing, Nelson L., and Cramer, Roscoe V. The Junior High School. Boston: Houghton, Mifflin Company, 1965.

Brookover, Wilber B., and Erickson, Edsel L. Society, Schools and Learning. Boston: Allyn and Bacon, Inc., 1969.

Conover, W. J. Practical Nonparametric Statistics. New York: John Wiley Publishers, 1971.

Curtis, Thomas E., ed. The Middle School. Albany, New York: State University of New York, Center for Curriculum and Research, 1968.

DeVita, Joseph C.; Pumerantz, Philip; and Wilklow, Leighton B. The Effective Middle School. West Nyack, New York: Parker Publishing Company, Inc., 1970.

Eichorn, Donald. The Middle School. New York: Center for Applied Research in Education, Inc., 1966.

Etzione, A., ed. A Sociological Reader on Complex Organizations. New York: Holt, Rinehart and Winston, Inc., 1967.

Flavel, John. The Developmental Psychology of Jean Piaget. New York: D. Van Nostrand Rienhold Company, 1963.

Glasser, William. Schools Without Failure. New York: Harper Row Publishers, 1969.

Grooms, Ann. Perspectives on the Middle School. Columbus, Ohio: Charles E. Merrill Publishing Company, 1967.

Gruhn, William T., and Douglas, Karl R. The Modern Junior High School. 3d ed. New York: The Ronald Press Co., 1971.

Hartling, James F., and Getz, Howard G., eds. Education for the Middle School Years: Readings. Glenview, Illinois: Scott, Foresman and Company, 1971.

Howard, Alvin W. Teaching in Middle Schools. Scranton, Pa.: International Textbook Company, 1960.

Howard, Alvin W., and Stoumbis, George C. The Junior High School and Middle School: Issues and Practices. Scranton: Intext Educational Publishers, 1970.

Kindred, Leslie W., et al. The Intermediate Schools. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968.

McCarthy, Robert J. How to Organize and Operate an Ungraded Middle School. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1967.

Moss, Theodore C. Middle School. Boston: Houghton Mifflin Co., 1969.

Murphy, Judith. Middle Schools. New York: Educational Facilities Laboratories, 1965.

Nickerson, Neal G. Junior High Schools Are On the Way Out. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1966.

Norther, Gottfried E. Introduction to Statistics. Boston: Houghton Mifflin Company, 1971.

Overly, Donald E.; Kinghorn, Jan Rye; and Preston, Richard L. The Middle School: Humanizing Education for Youth. Worthington, Ohio: Charles A. Jones Publishing Company, 1972.

Popper, Samuel. The American Middle School. Waltham, Massachusetts: Blaisdell Publishing Company, 1967.

Stoumbis, George S., and Howard, Alvin W., eds. Schools for the Middle Years: Readings. Scranton: International Textbook Company, 1969.

Stradley, William E. A Practical Guide to the Middle School. New York: The Center for Applied Research in Education, Inc., 1971.

Tanner, J. M. Growth of Adolescence. Oxford: Blackwell Scientific Publications, 1963.

Van Til, William; Vars, Gordon F.; and Lounsbury, John H. Modern Education for the Junior High School Years. 2d ed. Kansas City: The Bobbs-Merrill Company, Inc., 1967.

Periodicals

Alexander, William M. "The Junior High School: A Positive View." N.A.S.S.P. Bulletin, XLIX (March, 1967). 279.

_____. "The Junior High School: A Changing View." N.A.S.S.P. Bulletin, XLVIII (March, 1964), 23-24.

_____. "The Middle School Movement." Theory Into Practice, VI (June, 1968), 114-115.

_____. "The New School in the Middle." Phi Delta Kappan, L (February, 1969), 355-357.

_____. "What Educational Plan for the In-Between Ager." NEA Journal, LV (March, 1966), 30-32.

Alexander, William M., and Kealy, Ronald P. "From Junior High School to Middle School." The High School Journal, LIII (December, 1969), 151-163.

Alexander, William M., and Williams, Emmett L. "Schools for the Middle School Years." Educational Leadership, XIII (December, 1965), 217-223.

Atkins, Neil P. "Rethinking Education in the Middle." Theory Into Practice, VII (June, 1968), 119.

Batezel, George. "The Middle School: Philosophy Program Organization." The Clearing House, XLII (April, 1968), 487.

Bough, Max. "Theoretical and Practical Aspects of the Middle School." N.A.S.S.P. Bulletin, LIII (March, 1969), 10.

Brod, Pearl. "The Middle School: Trends Towards Its Adoption." The Clearing House, XL (February, 1966), 331-333.

Buell, C. E. "What Grades in Junior High School?" N.A.S.S.P. Bulletin, XLVI (February, 1962), 19-22.

Coleman, James S. "Social Change, Impact on the Adolescent." N.A.S.S.P. Bulletin, XLVII (April, 1965), 14.

Committee on Junior High Education. "Recommended Grades in Junior High Schools or Middle Schools." N.A.S.S.P. Bulletin, LI (February, 1967), 69.

Compton, Mary F. "The Middle Schools: Alternative to the Status Quo." Theory Into Practice, VII (June, 1968), 108-110.

Cuff, William A. "Middle Schools on the March." N.A.S.S.P. Bulletin, LI (February, 1967), 84.

Davidson, Helen H., and Lang, Gerhard. "Children's Perceptions of Their Teachers' Feeling Toward Them Related to Self-Perception, School Achievement and Behavior." Journal of Experimental Education, XXIX (1960), 107-118.

Di Virgilio, James. "Switching from Junior High School to Middle School?" Clearing House, XLIV (December, 1969), 224-226.

Eichorn, Donald H. "Middle School Organization: A New Dimension." Theory Into Practice, VI (June, 1968), 111-113.

Eichorn, Dorothy. "Variations in Growth Rate." Childhood Education, XLIV (January, 1968), 289.

Glissmeyer, C. H. "Which School for Sixth Graders, Elementary or The Middle School?" California Journal of Educational Research, XX (September, 1969), 176-185.

Grooms, A. "Middle School and Other Innovations." N.A.S.S.P. Bulletin, LI (May, 1968), 158-160.

Havinghurst, Robert. "Lost Innocence." N.A.S.S.P. Bulletin, XLVII (April, 1965), 2.

Havinghurst, Robert J. "The Middle School Child in Contemporary Society." Theory Into Practice, VII (June, 1968), 120-122.

Hines, V. A., and Alexander, W. M. "Evaluating the Middle School," National Elementary Principal, XLVIII (February, 1969), 32-36.

Hull, J. H. "The Junior High School Is a Poor Investment." The Nation's Schools, LXV (1960), 78-81.

Jennings, W. "Middle School? No!" Minnesota Journal of Education, XLVII (June, 1967), 73-74.

Lounsbury, J. H., and Douglass, H. R. "A Decade of Changes in Junior High School Practices." The Clearing House, XL (1966), 456-458.

Mead, Margaret. "Early Adolescence in the United States." N.A.S.S.P. Bulletin, XLVII (April, 1965), 7-9.

Moss, Theodore C. "The Middle School Comes--and Takes Another Grade or Two." The National Elementary School Principal, XLVIII (February, 1969), 37-41.

Post, Richard L. "Middle School: A Questionable Innovation." The Clearing House, XLII (April, 1968), 486.

_____. "Recommended Grade Organization for Junior High School Education." N.A.S.S.P. Bulletin, XLVIII (May, 1959), 227-230.

Strickland, V. E. "Where Does the Ninth Grade Belong." N.A.S.S.P. Bulletin, LI (February, 1967), 74-76.

Vars, Gordon F. "Teacher Preparation for Middle Schools." The High School Journal, LIII (December, 1969), 172-177.

Wattenberg, William W. "The Middle School as One Psychologist Sees It." High School Journal (December, 1969), 165.

White, W. D. "Pupil Progress and Grade Combinations." N.A.S.S.P. Bulletin, LI (February, 1967), 87-89.

Williams, Emmett L. "The Middle School Movement." Today's Education, LVIII (December, 1968), 41.

Woodring, Paul. "The New Intermediate School." Saturday Review, XLVIII (October, 1965), 77-78.

Other Materials

Papers

Vars, Gordon F. "New Knowledge of the Learner and His Cultural Melieu, Implications for Schooling in the Middle Years." Paper read at the University of Toledo, November, 1967, Toledo, Ohio.

Dissertations

Baruchin, Fred. "A Comparative Study of Transitional Grades of Middle and Traditional School Types in Upstate New York." Unpublished Ph.D. dissertation, State University of New York, 1971.

Davis, Edward I. "A Comparative Study of Middle Schools and Junior High Schools in New York State." Unpublished Ph.D. dissertation, University of New Mexico, 1970.

Dilg, Charles. "The Middle School as a Curricular Improvement for Emerging Adolescents--a Descriptive Study." Unpublished Ph.D. dissertation, State University of New York, 1970.

Fallon, John Patrick. "A Comparison of Transescent Male Development in Two Organizational Patterns Centering on Middle School Grade Organization." Unpublished Ph.D. dissertation, Michigan State University, 1969.

Flynn, John Harrington. "Practices of Middle Schools in California." Unpublished Ph.D. dissertation, University of Southern California, 1971.

Forst, Charles. "A Study of the Middle Schools in the State of Maryland as Compared to Selected Junior High Schools Within the State." Unpublished Ph.D. dissertation, George Washington University, 1969.

Gaskill, Lynn Dale. "An Investigation of the Effects of Four Middle School Programs Upon Academic Achievement and Personal Adjustment." Unpublished Ph.D. dissertation, North Texas State University, 1971.

Gatewood, Thomas Earl. "A Comparative Study of the Functions Organizational Structure, and Instructional Process of Selected Junior High Schools and Selected Middle Schools." Unpublished Ph.D. dissertation, Indiana University, 1970.

Harris, Dale E. "A Comparative Study of Selected Middle Schools and Selected Junior High Schools." Unpublished Ph.D. dissertation, Ball State University, 1968.

Meister, Richard William. "The Relationship of Differentiation of Organizational Structure of the Instructional Programs of the Middle School." Unpublished Ph.D. dissertation, University of Wisconsin, 1971.

Onofrio, John Egidio. "The Evolving Middle School in Connecticut: Principal's Opinions Concerning Unique Characteristics and Recommended Trends." Unpublished Ph.D. dissertation, Fordham University, 1971.

Rankin, Harold James. "A Study of the Pre-and-Post-Attitudes and Academic Achievements of Students in Grades Five Through Ten in a Change from Junior High Organization to a Middle School Organization in a Suburban School System." Unpublished Ph.D. dissertation, Syracuse University, 1969.

Riegle, Jack D. "A Study of Middle School Programs to Determine the Current Level of Eighteen Middle School Principles." Unpublished Ph.D. dissertation, Michigan State University, 1971.

Stephens, William Francis. "A Study of the Relationship Between Self Concept, I.Q., and Reading Comprehension in a Selected Middle School." Unpublished Ph.D. dissertation, University of Southern Mississippi, 1969.

Zdanowicz, John Paul. "A Study of the Changes That Have Taken Place in the Junior High Schools of North Eastern United States During the Last Decade and the Reasons for Some of the Changes." Unpublished Ph.D. dissertation, Temple University, 1965.

Dissertation Abstracts

Austin, John Calvin. "A Comparative Study of Two Forms of School Organization for the Early Adolescent in Terms of Pupil Achievement and School Adjustment." Dissertation Abstracts, 38:4814, June, 1968.

Brown, Lila Joan G. "A Survey of Opinion of Selected Principals Concerning Preparation and Characteristics of Teachers for Junior High and Middle Schools." Dissertation Abstracts, 32:3831-2, January, 1972.

Constantine, Peter. "A Study of Differences Between Middle School and Junior High School Curricula and Teacher-Pupil Classroom Behavior." Dissertation Abstracts, 30:614-15, August, 1969.

Dacus, Wilfred P. "A Study of the Grade Organization of Junior High School as Measured by Social Maturity, and Opposite Sex Choices." Dissertation Abstracts, 24:1462, September, 1963.

Howard, Alvin W. "The Middle School in Oregon and Washington." Dissertation Abstracts, 27:2008-9, January, 1967.

Mortimore, David Edwin. "A Case Study of the Emergence and Development of an Innovative Program for Middle School Children: The Roosevelt Junior High School Program." Dissertation Abstracts, 32:3008-9, December, 1971.

Sanders, S. G. "Differences in Mental and Educational Development from Grades Six Through Nine and Implications for Junior High School." Dissertation Abstracts, 27:1234, November, 1966.

APPENDICES

APPENDIX A

TITLES OF JURY MEMBERS' DOCTORAL DISSERTATIONS FROM MICHIGAN STATE UNIVERSITY

TITLES OF JURY MEMBERS' DOCTORAL DISSERTATIONS

FROM MICHIGAN STATE UNIVERSITY

Dr. Marie Therese Elie - A Comparative Study of Middle School and Junior High School Students in Terms of Socio-Emotional Problems, Self-Concept of Ability to Learn, Creative Thinking Ability, and Physical Fitness and Health, Ph.D. 1970.

Dr. John Patrick Fallon - A Comparison of Transescent Male Development in Two Organizational Patterns Centering on Middle School Grade Reorganization, Ph.D. 1969.

Dr. Doris Lee Marshall - A Comparative Study of Instructional Policies of Middle Schools Administered Respectively by Elementary-Oriented Principals, Ph.D. 1970.

Dr. Jack Riegle - A Study of Middle School Programs to Determine the Current Level of Implementation of Eighteen Basic Middle School Principles, Ph.D. 1971.

Dr. John Warren Vaughn - Implications of Physical and Intellectual Growth Characteristics, Interests, and Cultural Forces for the Improvement of the Middle School Program, Ed.D., 1969.

APPENDIX B

LETTER OF REQUEST TO JURY MEMBERS

27100 Schoenherr Road
Warren, MI 48093
April 26, 1972

Dear Dr.

I am a doctoral candidate at Michigan State University whose doctoral dissertation is going to be on the middle school. Of course, your dissertation topic was also on the middle school and for that reason I am writing you. I need a jury to assist me in identifying the three outstanding national authorities on the middle school. With your background you are eminently qualified to identify these people.

I don't believe this should take more than a minute or two of your time. If you would just take a moment to fill out the attached sheet and mail it back by the enclosed envelope I would be most appreciative.

A quick response on your part will be most helpful and again, most appreciated.

Thank you for your anticipated cooperation.

Sincerely,

Henry Sienkiewicz

HS:ds

Enclosures 2

APPENDIX C

BALLOT FOR SELECTING OUTSTANDING AUTHORITIES IN THE MIDDLE SCHOOL

Please identify in rank order (by placing the numbers 1, 2, or 3 next to their names) the three authorities you consider to be the most outstanding in the middle school. If you feel that there is a name or names which you would include, please add them to the appropriate space provided with the rank number next to it.

	Rank No.
W. M. Alexander	_____
M. F. Compton	_____
Donald H. Eichorn	_____
A. Grooms	_____
J. Murphy	_____
E. L. Williams	_____
_____	_____
_____	_____
_____	_____

_____

Signature

APPENDIX D

QUESTIONNAIRE ON SUGGESTED PRACTICES OF THE MIDDLE SCHOOL

Please answer these questions as accurately as you can. While these questions have been formulated from suggested practices by authorities on the middle school, there are no correct answers. All information will be confidential and there will be no identification of the school. In your responses please refer to the 1970-1971 school year for your answer.

1. What was the enrollment of the school in 1970-71?

   a) 0-300 b) 301-500 c) 501-700 d) 701-900 e) 901 or more

STAFF and ORGANIZATION

E 98 2. What was the approximate ratio of students to total professional staff

   a) 16-19:1 b) 20-22:1 c) 23-25:1 d) 26-28:1 e) 29 or more:1

A 122-123 3. Were staff members generally assigned to the total middle school faculty rather than to a single grade?

   yes ☐ no ☐

A 122-123 4. What percent of the staff had elementary certification?

   a) 0 b) 1-15 c) 26-50 d) 51-75 e) 76-100

E 91-92 5. What percent of teachers were subject specialists in one or more areas of organized knowledge?

   a) 0-20 b) 21-40 c) 41-60 d) 61-80 e) 81-100

E 93 6. What percent of the staff was male?

   a) 0-20 b) 21-40 c) 41-60 d) 61-80 e) 81-100

A 124-125 7.-13. Were the following curriculum specialists provided in the school?

Librarian	yes ☐	no ☐
Reading	yes ☐	no ☐
Art	yes ☐	no ☐
Music	yes ☐	no ☐
Modern Foreign Language	yes ☐	no ☐
Home Arts	yes ☐	no ☐
Guidance Counselors	yes ☐	no ☐

A 125 14. Was a psychologist or diagnostician available either at the school or district level in 1970-71?

yes ☐ no ☐

E 93 15. What number of hours of orientation on the middle school were provided for incoming faculty members?

a) 0 b) 1-4 c) 5-8 d) 9-12 e) more

A 72
A 90
E 93 16. What hours per year, if any, were used for in-service of each teacher to develop skill in using a variety of teaching strategies and methods for the middle school?

a) 0-3 b) 4-6 c) 7-9 d) 10-12 e) more

This completes the questions on staff and organization. Do you have any additional comments on this area?

The next section will be on student activities.

ACTIVITY PROGRAM

A 70-71
E 87
E 60

17. How many after school social events were provided per year per youngster? (excluding athletics, concerts or plays)

a) 0 - 4 b) 5 - 8 c) 9 - 12 d) 13 - 16 e) more

E 87
E 62

18. What per cent of the events were large group participation activities as opposed to couple type functions? (e.g. dances)

a) 0-20 b) 21-40 c) 41-60 d) 61-80 e) 81-100

A 70-71
E 88
E 60

19. Was time for interest activity programs scheduled as part of the school day?

yes ☐ no ☐

A - In Between Ages

20. Did separate instruction units, i.e. group of four classes or grade level ever develop their own social activities?

yes ☐ no ☐

E 89
A - In Between Ages

21. Was there a student elected government in 1970-71?

yes ☐ no ☐

E 89

22. Was there a student service committee or committees?

yes ☐ no ☐

A - In Between Ages

23. Were students ever involved in developing their own activity programs?

yes ☐ no ☐

A 52
E 59

24. Was there interscholastic athletic competition?

yes ☐ no ☐

A 69
E 60

25. Was there an intramural sports program?

yes ☐ no ☐

This concludes the section on student activities. Do you have any additional comments?

The next sections will be Guidance and Instruction

GUIDANCE

A 66, 84
A 120
E 86

26. Did teachers assume some of the responsibility for guidance by being teacher-counselors? (Teacher-counselor has the responsibility of knowing the student well enough to give individual educational guidance and to be able to coordinate the student's total program. In addition the teacher-counselor must learn to work effectively with groups.) Would you expect your staff to do this?

yes ☐ no ☐

E 86, 87
A 120, 232

27. What was the ratio of students to counselors in 1970-71?

a) 0 b) 200-1 c) 300-1 d) 400-1 e) higher

A 66
A 124

28. Did each student have a group and a teacher which he identified as his school home?

yes ☐ no ☐

INSTRUCTIONAL

A 103
E 80

29. What grade level or the equivalent of grade level was the student population in the school?

a) 5-8 b) 6-8 c) 7-8 d) 7-9 e) other

E 80
A 17

30. What per cent of students completed the program of the middle school in the allocated time?

a) 100 b) 99-95 c) 94-90 d) 89-85 e) 84 or less

E 83

31-33. Were students grouped by the same sex in?

Fine Arts	yes ☐	no ☐
Practical Arts	yes ☐	no ☐
Physical Education	yes ☐	no ☐

E 79

34. Were any students grouped homogeneously?

yes ☐ no ☐

A 72 35. Were high school students used as tutors?

yes ☐ no ☐

A 70-71
A 86 36. Approximately what percent of the students' program was exploratory? (May include art, dance, drama, foreign language, home arts, industrial arts, typing.)

a) 0-15 b) 16-25 c) 26-35 d) 36-49 e) 50 or more

A 69-70 37. What part of the student's program was elective?

a) 0-15% b) 16-25% c) 26-35% d) 36-49% e) 50% or more

A 67 38. Was there a program aimed at developing personal values in 1970-71?

yes ☐ no ☐

E 2 39. Was there a cultural studies program?

yes ☐ no ☐

A 72 40. Was there a formal program of reading available for students in need?

yes ☐ no ☐

A 72 41. Was there an established teacher supervised study-skills center operating to help children develop improved study skills?

yes ☐ no ☐

A 69 42. Did the physical education program provide strong emphasis on recreational activities e.g. tennis, modern dance, gymnastics?

yes ☐ no ☐

E 59 43. Did the physical education program require "group showers"?

yes ☐ no ☐

A 91 44. What per cent of the students in the middle school were instructed in "discovery methods"? (Discovery methods present the student with a problem situation, he uses available data, draws on his store of knowledge, hypothesizes a solution, tests it, refines it, and finally states it as a principle or generalization.)

a) 0-20 b) 21-40 c) 41-60 d) 61-80 e) 81-100

A 105 45. If your school included grades 5 or 6 were students in those grades assigned to self-contained classrooms?

yes ☐ no ☐

A 105 46. Were students in grades 7-8 assigned to departmentalized classes in 1970-71?

yes ☐ no ☐

E 75
A 53, 73 47. Was the curriculum developed around the large concept areas of mathematics, science, language, and social studies?

yes ☐ no ☐

A 84-85 48. What part of the students' day was spent on the basic large concept areas, math, science, language, social studies?

a) 40-60% b) 61-70% c) 71-80% d) 81-90% e) 91-100%

E 77 49. Did students on a regular basis participate in planning daily instructional activities?

yes ☐ no ☐

E 75
E 69 50. On an average, about how often did changes occur in students' schedules?

a) never b) semester c) bi-semester d) weekly e) daily

E 79 51. Were students administratively regrouped during the 1970-71 year?

yes ☐ no ☐

E 69
A 73
A 86

52. On the average, what per cent of the average student's time was spent on independent study? (Students work without direct supervision)

a) 0-5 b) 6-10 c) 11-15 d) 16-20 e) 21 or more

A 105-106

53. What part of the average student's day was spent in a class that was team taught? (Team teaching is defined as those situations when two or more professional staff members cooperate in the task of planning, conducting, and evaluating instruction for and with particular student groups at the classroom level.)

a) 0-15% b) 16-25% c) 26-35% d) 36-49% e) 50% or more

A 115
A 118-119
E 95-96

54. What portion of the total curriculum can be termed non-graded, continuous progress programs. (The plans of these programs attempt to provide for differentiated rates and means of progression.)

a) 0-20% b) 21-40% c) 41-60% d) 61-80% e) 81-100%

E 75

55. Were final examinations given in any of the subject areas in 1970-71?

yes ☐ no ☐

E 71
E 75

56. Were individual student progress reporting systems used with parents in contrast to pass/fail grading systems?

yes ☐ no ☐

This concludes the sention on Guidance and Instruction.

Do you have any additional comments on this area?

The last short section will be on the sociological makeup of the community.

SOCIOLOGICAL

57-61. What per cent of your student population would you sociologically place in the -

57.	lower-lower	a) 0-20	b) 21-40	c) 41-60	d) 61-80	e) 81-100
58.	upper-lower	a) 0-20	b) 21-40	c) 41-60	d) 61-80	e) 81-100
59.	lower-middle	a) 0-20	b) 21-40	c) 41-60	d) 61-80	e) 81-100
60.	upper-middle	a) 0-20	b) 21-40	c) 41-60	d) 61-80	e) 81-100
61.	lower-upper	a) 0-20	b) 21-40	c) 41-60	d) 61-80	e) 81-100

62. Was there any event or events during the 1970-71 school year which would have significantly effected student attitude? e.g. teacher strike.

yes ☐ no ☐

If yes, what?

Thank you very much for your time, which I realize is precious. Your cooperation was greatly appreciated.

Would you like a summary of the conclusions of the study when it is completed?

yes ☐ no ☐

May I please be allowed to observe the building?

SCHOOL PLANT and EQUIPMENT

Questions to be completed by interviewer.

E 96-97 63. Is interior well illuminated?

a) below average b) average c) above average

E 96-97 64. Is interior aesthetically pleasing?

a) below average b) average c) above average

E 96-97 65. Is interior well maintained?

a) below average b) average c) above average

96-97 66. Is exterior well maintained?

a) below average b) average c) above average

E 96 67. Are classrooms provided with adequate equipment for student experiences in the content field being studied?

a) below average b) average c) above average

A 156 68. Does the facility provide wings, clusters or other arrangements which permit decentralization?

yes ☐ no ☐

A 156 69. Is there a resource center?
E 96

yes ☐ no ☐

E 96 70. Can students view slides, filmstrips, or television
A 72 in the resource center?

yes ☐ no ☐

E 96 71. Were listening devices provided in the resource center?

yes ☐ no ☐

E 96 72. Can groups of students work cooperatively on research projects in an area of the resource center without restriction on conversation and discussion.

yes ☐ no ☐

A 70-71 73-77. Are specialized laboratory facilities provided for?

Music	yes ☐	no ☐
Art	yes ☐	no ☐
Industrial Arts	yes ☐	no ☐
Science	yes ☐	no ☐
Home Economics	yes ☐	no ☐

A 156 78. Is space of varying size available for use by large and small groups?

yes ☐ no ☐

A 156 79. Are spaces for individual study provided?

yes ☐ no ☐

A 156 80. Are spaces for private conferences between pupil and teacher provided?

yes ☐ no ☐

In your responses please refer to the 1970-1971 school year for your answer.

STAFF QUESTIONS

(16) 81. What hours per year, if any, were used for in-service of each teacher to develop skill in using a variety of teaching strategies and methods for the middle school?

a) 0-3 b) 4-6 c) 7-9 d) 10-12 e) more

(26) 82. Did teachers assume some of the responsibility for guidance by being teacher-counselors? (Teacher-counselor has the responsibility of knowing the student well enough to give individual educational guidance and to be able to coordinate the student's total program. In addition the teacher-counselor must learn to work effectively with groups.)

yes ☐ no ☐

(52) 83. On the average, what per cent of the student's time was spent on independent study? (Students work without direct supervision.)

a) 0-5 b) 6-10 c) 11-15 d) 16-20 e) 21 or more

(53) 84. What part of the average student's day was spent in a class that is team taught? (Team teaching is defined as those situations when two or more professional staff members cooperate in the task of planning, conduction, and evaluating instruction for and with particular student groups at the classroom level.)

a) 0-15 b) 16-25 c) 26-35 d) 36-49 e) 50 or more

(54) 85. What portion of the total curriculum can be termed non-graded, continuous progress programs. (The plans of these programs attempt to provide for differentiated rates and means of progression.)

a) 0-20 b) 21-40 c) 41-60 d) 61-80 e) 81-100

In your responses please refer to the 1970-1971 school year for your answer.

STUDENT QUESTIONS

(17) 86. How many after school social events were provided for you last year? (not counting athletics, concerts, or plays)

a) 0-4 b) 5-8 c) 9-12 d) 13-16 e) 17 or more

(18) 87. What per cent of the events were large group participation activities as opposed to couple type functions? (e.g. dances)
a) 0-20 b) 21-40 c) 41-60 d) 61-80 e) 81-100

(23) 88. Were kids ever involved in developing their own activity programs?

yes ☐ no ☐

(49) 89. Did kids on a regular basis participate in planning daily classroom activities?

yes ☐ no ☐

(50) 90. On an average, about how often did changes occur in student's schedules?

a) never b) semester c) bi-monthly d) weekly e) daily

APPENDIX E

QUESTIONS IN THE STUDENT ATTITUDE SECTION OF THE 1971 MICHIGAN ASSESSMENT TEST OF BASIC SKILLS, GRADE 7

QUESTIONS IN THE STUDENT ATTITUDE SECTION OF THE 1972
MICHIGAN ASSESSMENT TEST OF BASIC SKILLS, GRADE 7

45. Do you like school?

(A) Yes
(B) No
(C) I'm not sure

46. How often do you tell your parents about things that happen in school?

(A) Just about every day
(B) Once or twice a week
(C) Occasionally, but not often
(D) Never or hardly ever

47. Do you like to talk to your parents about school work?

(A) Yes
(B) No
(C) I'm not sure

48. Do you like the time you spend in school on mathematics?

(A) Yes
(B) No
(C) I'm not sure

49. Do you like the time you spend in school on reading?

(A) Yes
(B) No
(C) I'm not sure

50. Do you like the time you spend in school on writing, spelling, and grammar?

(A) Yes
(B) No
(C) I'm not sure

51. If you had your choice, would you rather go to a school other than this one?

(A) Yes
(B) No
(C) I'm not sure

APPENDIX F

LISTING OF MICHIGAN SCHOOL DISTRICTS CLASSIFIED BY MAJOR COMMUNITY TYPE SERVED

LISTING OF MICHIGAN SCHOOL DISTRICTS CLASSIFIED BY MAJOR COMMUNITY TYPE SERVED

Definitions of Community Types

Type I - Metropolitan Core: One or more adjacent cities with a population of 50,000 or more which serve as the economic focal point of their environs.

II - City: Community of 10,000 to 50,000 that serves as the economic focal point of its environs.

III - Town: Community of 2,500 to 10,000 that serves as the economic focal point of its environs.

IV - Urban Fringe: A community of any population size that has as its economic focal point a metropolitan core or a city.

V - Rural Community: A community of less than 2,500.

These definitions of community types were arrived at in the Fall of 1969, and are identical to the community types reported in the 1969-70 Michigan Educational Assessment Program.

APPENDIX G

CONTINGENCY TABLES

TABLE 45.--Contingency Table for Practice: Providing a Librarian in the School.

Attitudes	N	Yes*	No
Low	10	90%	10%**
High	10	80%	20%
TOTAL	20	85%	15%

Degrees of Freedom = 1; Contingency Coefficient = .1386750; Chi-square = .392; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitudes, 90% had librarians and 10% did not.

TABLE 46.--Contingency Table for Practice: Providing an Art Specialist in the School.

Attitudes	N	Yes*	No
Low	10	100%	0%**
High	10	70%	30%
TOTAL	20	85%	15%

Degrees of Freedom = 1; Contingency Coefficient = .3872983; Chi-square = 3.529; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 100% had an art specialist in the school.

TABLE 47.--Contingency Table for Practice: Providing a Music Specialist in the School.

Attitudes	N	Yes*	No
Low	10	100%	0%**
High	10	100%	0%
TOTAL	20	100%	0%

Degrees of Freedom = 0; Contingency Coefficient = .0000000; Chi-square = .000.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 100% had a music specialist in the school.

TABLE 48.--Contingency Table for Practice: Providing a Home Arts Specialist in the School.

Attitudes	N	Yes*	No
Low	10	80%	20%**
High	10	100%	0%
TOTAL	20	90%	10%

Degrees of Freedom = 1; Contingency Coefficient = .3162278; Chi-square = 2.222; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 80% had a home arts specialist in the school.

TABLE 49.--Contingency Table for Practice: Staff Including Teachers with Elementary Certification.

Attitudes	N	0%	1-25%	26-50%	51-75%	76-100%
Low	100%	10%	30%	40%	20%	0%**
High	100%	0%	40%	40%	20%	0%
TOTAL	100%	5%	35%	40%	20%	0%

Degrees of Freedom = 3; Contingency Coefficient = .2324953; Chi-square = 1.143; Critical Value = 7.81.

**This is interpreted that of ten randomly selected middle schools scoring low on student attitude 10% had no teachers with elementary certification, 30% had 1-15% of the staff so certified and 40% had 26-50% of the staff so certified. Twenty percent had 51-75% of the staff so certified and none of the schools had 76-100% of the staff elementary certified.

TABLE 50.--Contingency Table for Practice: Teachers Being Subject Specialists in One or More Areas of Knowledge.

Attitudes	N	0-20%	21-40%	41-60%	61-80%	81-100%
Low	100%	0%	10%	10%	70%	10%**
High	100%	0%	10%	50%	20%	20%
TOTAL	100%	0%	10%	30%	45%	15%

Degrees of Freedom = 3; Contingency Coefficient - .4734321; Chi-square = 5.778; Critical Value = 7.81.

**This is interpreted that of ten randomly selected middle schools scoring low on student attitude none of the schools had 0-20% of their teachers as subject specialists; 10% had 21-40% subject specialists; 10% had 41-60% subject specialists; 70% had 61-80% subject specialists and 10% had 81-100% of the teachers as subject specialists.

TABLE 51.--Contingency Table for Practice: Providing a Guidance Counselor in the School.

Attitudes	N	Yes*	No
Low	10	80%	20%**
High	10	70%	30%
TOTAL	20	75%	25%

Degrees of Freedom = 1; Contingency Coefficient = .1147079; Chi-square = .267; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitudes, 80% had guidance counselors and 20% did not.

TABLE 52.--Contingency Table for Practice: Providing a Psychologist or Diagnostician at the Building or District Level.

Attitudes	N	Yes*	No
Low	10	70%	30%**
High	10	70%	30%
TOTAL	20	70%	30%

Degrees of Freedom = 1; Contingency Coefficient = .000000; Chi-square = 0.000; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitudes, 70% had a psychologist or diagnostician and 30% did not.

TABLE 53.--Contingency Table for Practice: What Hours per Year Were Used for Inservice to Develop Skill in Using a Variety of Teaching Strategies and Methods for the Middle School.

Attitudes	N	0-3	4-6	7-9	10-12	More
Low	10	10%	20%	10%	20%	40%**
High	10	20%	40%	10%	20%	10%
TOTAL	20	15%	30%	10%	20%	25%

Degrees of Freedom = 4; Contingency Coefficient = .3504383; Chi-square = 2.800; Critical Value = 9.49.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 10% spent 0-3 hours per year, 20% spent 4-6 hours, 10% spent 7-9 hours, 20% spent 10-12 hours and 40% spent more than 12 hours on inservice related to middle school.

TABLE 54.--Contingency Table for Practice: How Many After School Social Events Were Provided per Year per Youngster.

Attitudes	N	0-4	5-8	9-12	13-16	More
Low	10	20%	50%	10%	0%	20%**
High	10	30%	20%	30%	0%	20%
TOTAL	20	25%	35%	20%	0%	20%

Degrees of Freedom = 3; Contingency Coefficient = .3324852; Chi-square = 2.486; Critical Value = 7.81.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude 20% had 0-4 after school social events; 50% had 5-8 such events; 10% had 9-12 social events; 0 had 13-16 and 20% more than 16 social events per year.

TABLE 55.--Contingency Table for Practice: Whether Students Are Involved in Developing Their Own Activity Programs.

Attitudes	N	Yes*	No
Low	10	60%	40%**
High	10	90%	10%
TOTAL	20	75%	25%

Degrees of Freedom = 1; Contingency Coefficient = .3273268; Chi-square = 2.400; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitudes, 60% had students develope their own activity programs and 40% did not.

TABLE 56.--Contingency Table for Practice: Whether There Was an Intramural Sports Program.

Attitudes	N	Yes*	No
Low	10	90%	10%**
High	10	60%	40%
TOTAL	20	75%	25%

Degrees of Freedom = 1; Contingency Coefficient = .3273268; Chi-square = 2.400; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 90% had an intramural program and 10% did not.

TABLE 57.--Contingency Table for Practice: Teachers Assumed Some of the Responsibility for Guidance by Being Teacher Counselors.

Attitudes	N	Yes*	No
Low	10	70%	30%**
High	10	80%	20%
TOTAL	20	75%	25%

Degrees of Freedom = 1; Contingency Coefficient = .1147079; Chi-square = .267; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 70% had teachers assume some of the responsibility for guidance and 30% did not.

TABLE 58.--Contingency Table for Practice: Equivalent Grade Level of the Student Population in the School.

Attitudes	N	5-8	6-8	7-8	7-9	Other
Low	10	10%	60%	10%	0%	20%**
High	10	20%	60%	10%	0%	10%
TOTAL	20	15%	60%	10%	0%	15%

Degrees of Freedom = 3; Contingency Coefficient = .1796053; Chi-square = .667; Critical Value = 7.81.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 10% had a grade 5-8 program; 10% had a grade 7-8 program, none had 7-9, and 20% had other grade arrangements.

TABLE 59.--Contingency Table for Practice: The Percent of Students Completing the Program in the Allocated Time.

Attitudes	N	100%	99-95%	94-90%	89-85%	84% or less
Low	10	30%	60%	0%	0%	10%**
High	10	70%	20%	10%	0%	0%
TOTAL	20	50%	40%	5%	0%	5%

Degrees of Freedom = 3; Contingency Coefficient = .4677072; Chi-square = 5.600; Critical Value = 7.81.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 30% had all their students complete the program in the allocated time, 60% had 99-95% of their students complete it, while none had 94-90% or 89-85% of the students complete it, and 10% had 84% or less complete the program in the allocated time.

TABLE 60.--Contingency Table for Practice: To the Percent of the Students' Program Which Was Exploratory.

Attitudes	N	0-15%	16-25%	26-35%	36-49%	50% or more
Low	10	10%	50%	20%	20%	0%**
High	10	40%	40%	20%	0%	0%
TOTAL	20	25%	45%	20%	10%	0%

Degrees of Freedom = 3; Contingency Coefficient = .4044364; Chi-square = 3.911; Critical Value = 7.81.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 10% had their students' program 0-15% exploratory, 50% had 16-25% of the program exploratory; 20% had 26-35% exploratory, 20% had 36-49% of the students' program exploratory and none had 50% or more.

TABLE 61.--Contingency Table for Practice: To the Percent of the Students' Program Which Was Elective.

Attitudes	N	0-15%	16-25%	26-35%	36-49%	50% or more
Low	10	60%	30%	10%	0%	0%**
High	10	50%	30%	20%	0%	0%
TOTAL	20	55%	30%	15%	0%	0%

Degrees of Freedom = 2; Contingency Coefficient = .1441233; Chi-square = .424; Critical Value = 5.99.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 60% had their students' program 0-15% elective; 30% had 16-25% of the program elective; 10% had 26-35% elective and none had 36-49% or 50% or more elective.

TABLE 62.--Contingency Table for Practice: The Part of the School Day Spent on the Basic Large Concept Areas of Math, Science, Language and Social Studies.

Attitudes	N	40-60%	62-70%	71-80%	81-90%	91-100%
Low	10	10%	50%	0%	30%	10%**
High	10	20%	30%	10%	10%	10%
TOTAL	20	25%	40%	5%	20%	10%

Degrees of Freedom = 4; Contingency Coefficient = .376; Chi-square = 3.300; Critical Value = 9.49.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 10% spent between 40-60% of the school day on math, science, language and social studies, while 50% spent 61-70% of the time on these large concept areas; while none spent 71-80% of the time, 30% spent 81-90% of the time on these subjects, and 10% spent 91-100% of the time on these subjects.

TABLE 63.--Contingency Table for Practice: The Frequency of Changes in Students' Schedules.

Attitudes	N	Never	Semester	Bi-Semester	Weekly	Daily
Low	10	20%	50%	20%	10%	0%**
High	10	20%	20%	40%	10%	10%
TOTAL	20	20%	35%	30%	10%	5%

Degrees of Freedom = 4; Contingency Coefficient = .3586512; Chi-square = 2.952; Critical Value = 9.49.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 20% never had students' schedules changed, 50% had the schedules changed at semester, 20% changed bi-semester, 10% changed weekly, and none changed daily.

TABLE 64.--Contingency Table for Practice: The Physical Education Program Providing Strong Emphasis on Recreational Activities.

Attitudes	N	Yes*	No
Low	10	80%	20%**
High	10	80%	20%
TOTAL	20	80%	20%

Degrees of Freedom = 1; Contingency Coefficient = .00000; Chi-square = 0.000; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 80% had a physical education program emphasizing recreational activities and 20% did not.

TABLE 65.--Contingency Table for Practice: Students in Grades Seven and Eight Being Assigned Departmentalized Classes.

Attitudes	N	Yes*	No
Low	10	90%	10%**
High	10	90%	10%
TOTAL	20	90%	10%

Degrees of Freedom = 1; Contingency Coefficient = 0.00000; Chi-square = 0.000; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 90% had seventh and eighth graders assigned to departmentalized classes while 10% did not.

TABLE 66.--Contingency Table for Practice: Students Being Grouped Homogeneously.

Attitudes	N	Yes*	No
Low	10	70%	30%**
High	10	50%	50%
TOTAL	20	60%	40%

Degrees of Freedom = 1; Contingency Coefficient = .200000; Chi-square = .833; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 70% had some students being grouped homogeneously while 30% did not.

TABLE 67.--Contingency Table for Practice: Students Being Grouped By the Same Sex in Physical Education.

Attitudes	N	Yes*	No
Low	10	60%	40%**
High	9	55.56%	44.44%
TOTAL	19	57.89%	42.11%

Degrees of Freedom = 1; Contingency Coefficient = .0449013; Chi-square = .038; Critical Value - 3.84.

*Recommended Practice.

**This is to be interpreted that of the ten randomly selected middle schools scoring low on student attitude, 60% had the students grouped by the same sex and 40% did not.

TABLE 68.--Contingency Table for Practice: Students Being Administratively Regrouped During the Year.

Attitudes	N	Yes*	No
Low	10	60%	40%**
High	10	50%	50%
TOTAL	20	55%	45%

Degrees of Freedom = 1; Contingency Coefficient = .100000; Chi-square = .202; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 60% administratively regrouped during the year and 40% did not.

TABLE 69.--Contingency Table for Practice: Having a Formal Reading Program Available for Students in Need.

Attitudes	N	Yes*	No
Low	10	60%	40%**
High	9	55.56%	44.44%
TOTAL	19	57.89%	42.11%

Degrees of Freedom = 1; Contingency Coefficient = .0449013; Chi-square = .038; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 60% had a formal reading program for students in need and 40% did not.

TABLE 70.--Contingency Table for Practice: Students in Grades Five and Six Being Assigned to Self-Contained Classrooms.

Attitudes	N	Yes*	No
Low	8	50%	50%**
High	9	55.56%	44.44%
TOTAL	17	52.94%	47.06%

Degrees of Freedom = 1; Contingency Coefficient = .0554700; Chi-square = .052; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% had students in grades five and six being assigned to self-contained classrooms and 50% did not.

TABLE 71.--Contingency Table for Practice: High School Students Being Used as Tutors.

Attitudes	N	Yes*	No
Low	10	50%	50%**
High	10	40%	60%
TOTAL	20	45%	55%

Degrees of Freedom = 1; Contingency Coefficient = .1000000; Chi-square = .202; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% used high school students as tutors and 50% did not.

TABLE 72.--Contingency Table for Practice: Whether Final Examinations in Any Subject Areas Were Given.

Attitudes	N	Yes	No*
Low	10	50%	50%**
High	10	60%	40%
TOTAL	20	55%	45%

Degrees of Freedom = 1; Contingency Coefficient = .10000; Chi-square = .202; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% gave final examinations in some subject areas and 50% did not.

TABLE 73.--Contingency Table for Practice: The Physical Education Program Not Requiring Group Showers.

Attitudes	N	Yes	No*
Low	10	70%	30%**
High	10	100%	0%
TOTAL	20	85%	15%

Degrees of Freedom = 1; Contingency Coefficient = .3872983; Chi-square = 3.529; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 70% required group showers and 30% did not.

TABLE 74.--Contingency Table for Practice: Students Being Grouped By the Same Sex in Fine Arts.

Attitudes	N	Yes*	No
Low	10	10%	90%**
High	10	0%	100%
TOTAL	20	5%	95%

Degrees of Freedom = 1; Contingency Coefficient = .2236068; Chi-square = 1.053; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 10% had students grouped by the same sex in fine arts and 90% did not.

TABLE 75.--Contingency Table for Practice: Specialized Laboratory Facilities Being Provided for Home Economics.

Attitudes	N	Yes*	No
Low	10	80%	20%**
High	10	90%	10%
TOTAL	20	85%	15%

Degrees of Freedom = 1; Contingency Coefficient = .1386750; Chi-square = .392; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 80% provided a home economics laboratory and 20% did not.

TABLE 76.--Contingency Table for Practice: Specialized Laboratory Facilities Being Provided for Art.

Attitudes	N	Yes*	No
Low	10	90%	10%**
High	10	80%	20%
TOTAL	20	85%	15%

Degrees of Freedom = 1; Contingency Coefficient = .1386750; Chi-square = .394; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 90% provided an art laboratory and 10% did not.

TABLE 77.--Contingency Table for Practice: Specialized Laboratory Facilities Being Provided for Music.

Attitudes	N	Yes*	No
Low	10	80%	20%**
High	10	80%	20%
TOTAL	20	80%	20%

Degrees of Freedom = 1; Contingency Coefficient = 0.0000; Chi-square = 0.000; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 80% provided a laboratory for music and 20% did not.

TABLE 78.--Contingency Table for Practice: Specialized Laboratory Facilities Being Provided for Industrial Arts.

Attitudes	N	Yes*	No
Low	10	80%	20%**
High	10	70%	30%
TOTAL	20	75%	25%

Degrees of Freedom = 1; Contingency Coefficient = .1147079; Chi-square = .267; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 80% provided industrial arts laboratories and 20% did not.

TABLE 79.--Contingency Table for Practice: Specialized Laboratory(ies) Facilities Being Provided for Science.

Attitudes	N	Yes*	No
Low	10	70%	30%
High	10	80%	20%
TOTAL	20	75%	25%

Degrees of Freedom = 1; Contingency Coefficient = .1386750; Chi-square = .392; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 70% provided a science laboratory(ies) and 30% did not.

TABLE 80.--Contingency Table for Practice: There is a Resource Center in the School.

Attitudes	N	Yes*	No
Low	10	80%	20%**
High	10	70%	30%
TOTAL	20	75%	25%

Degrees of Freedom = 1; Contingency Coefficient = .1147079; Chi-square = .267; Critical Value = 3.84.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 80% had a resource center and 20% did not.

TABLE 81.--Contingency Table for Practice: The Interior of the School Being Well Maintained.

Attitudes	N	Below Average	Average	Above Average*
Low	10	50%	20%	30%**
High	10	20%	50%	30%
TOTAL	20	35%	35%	30%

Degrees of Freedom = 2; Contingency Coefficient = .3375264; Chi-square = 2.571; Critical Value = 5.99.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% were below average in their interior maintenance while 20% were average and 30% above average.

TABLE 82.--Contingency Table for Practice: The Exterior of the Building Being Well Maintained.

Attitudes	N	Below Average	Average	Above Average*
Low	10	50%	10%	40%**
High	10	30%	30%	40%
TOTAL	20	40%	20%	40%

Degrees of Freedom = 2; Contingency Coefficient = .2641353; Chi-square = 1.500; Critical Value = 5.99.

*Recommended Practice.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 50% were below average in exterior maintenance while 10% were average and 40% were above average.

TABLE 83.--Contingency Table: Any Event in 1970-1972 Which Would Have Significantly Affected Student Attitude.

Attitude	N	Yes	No
Low	10	0%	100%**
High	10	20%	80%
TOTAL	20	10%	90%

Degree of Freedom = 1; Contingency Coefficient = .3162271; Chi-square = 2.222; Critical Value = 3.84.

**This is to be interpreted that of ten randomly selected middle schools scoring low on student attitude, 0% had an event which effected student attitude while 100% had no such event.

APPENDIX H

PERCENTAGE IMPLEMENTATION LEVELS

APPENDIX H

PERCENTAGE IMPLEMENTATION LEVELS FOR PRACTICES WITH A SINGLE LEVEL OF IMPLEMENTATION RECOMMENDED BY THE AUTHORITIES

Total Per Cent of Implementation	Practice
100%	The Curriculum Developed Around the Large Concept Areas of Mathematics, Science, Language, and Social Science (Table 21)
100%	Providing a Music Specialist in the School (Table 46)
90%	Providing a Home Arts Specialist in the School (Table 47)
90%	Whether There Is a Student Elected Government (Table 54)
90%	Students in Grades Seven and Eight Being Assigned Departmentalized Classes (Table 65)
85%	Providing a Librarian in the School (Table 44)
85%	Providing an Art Specialist in the School (Table 45)
85%	Specialized Laboratory Facilities Being Provided for Home Economics (Table 75)
85%	Specialized Laboratory Facilities Being Provided for Art (Table 76)
80%	The Physical Education Program Providing Strong Emphasis on Recreational Activities (Table 64)
80%	Specialized Laboratory Facilities Being Provided for Music (Table 77)
75%	The Faculty Having a Proportionate Number of Males (Table 5)
75%	Providing a Guidance Counselor in the School (Table 50)
75%	Whether Students Are Involved in Developing Their Own Activity Programs (Table 55)

Total Per Cent of Implementation	Practice
75%	Whether There Was an Intramural Sports Program (Table 56)
75%	Teachers Assumed Some of the Responsibility for Guidance by Being Teacher Counselors (Table 57)
75%	Specialized Laboratory Facilities Being Provided for Industrial Arts (Table 78)
75%	Specialized Laboratory Facilities Being Provided for Science (Table 79)
75%	There Is a Resource Center in the School (Table 80)
70%	Allowability of Groups of Students to Work Cooperatively on Research Projects in an Area of the Resource Center Without Restriction on Conversation and Discussion (Table 28)
68.42%	Slides, Filmstrips, or Television Can Be Viewed in the Resource Center (Table 29)
65%	The Per Cent of the Events Which Were Large Group Participation Activities As Opposed to Couple Type Functions (Table 10)
60%	Staff Members Generally Being Assigned to the Total Middle School (Table 4)
60%	Providing a Modern Foreign Language Specialist in the School (Table 7)
60%	Students Being Grouped Homogeneously (Table 66)
57.89%	Students Being Grouped by the Same Sex in Physical Education (Table 67)
57.89%	Having a Formal Reading Program for Students in Need (Table 69)
55%	Interest Activity Programs Were Scheduled as Part of the School Day (Table 11)

Total Per Cent of Implementation	Practice
55%	Separate Instructional Units Ever Developing Their Own Social Activities (Table 12)
55%	Students Being Administratively Regrouped During the Year (Table 68)
52.94%	Students in Grades Five and Six Being Assigned to Self-Contained Classrooms (Table 70)
45%	Providing a Reading Specialist in the School (Table 6)
45%	High School Students Being Used as Tutors (Table 71)
45%	Whether Final Examinations in Any Subject Areas Were Given (Table 72)
42.11%	Each Student Had a Group and a Teacher Which He Identified as His School Home (Table 16)
42.11%	Whether Individual Student Progress Reporting System Was Used with Parents in Contrast to Pass/Fail Grading Systems (Table 22)
40%	Space of Varying Size Being Available for Use By Large and Small Groups (Table 34)
40%	Spaces for Individual Study Being Provided (Table 35)
40%	Space for Private Conference Between Pupil and Teacher Being Provided (Table 36)
40%	The Exterior of the Building Being Well Maintained (Table 82)
35%	Students Being Grouped by the Same Sex in Practical Arts (Table 17)
35%	Classrooms Provided With Adequate Equipment for Student Experiences in the Contest Field Being Studied (Table 33)
30%	The Per Cent of Students Instructed in Discovery Methods (Table 23)
30%	A Program Aimed at Developing Personal Values (Table 24)
30%	The Students on a Regular Basis Participated in Planning Daily Instructional Activities (Table 25)

Total Per Cent of Implementation	Practice
30%	Listening Devices Were Provided in the Resource Center (Table 30)
30%	The Interior of the School Being Aesthetically Pleasing (Table 32)
30%	The Interior of the School Being Well Maintained (Table 81)
25%	Facility Provides Wings, Clusters or Other Arrangements Which Permit Decentralization (Table 37)
20%	Whether There Is a Student Service Committee (Table 13)
20%	The Interior of the School Being Well Illuminated (Table 31)
15%	There Being a Cultural Studies Program (Table 26)
15%	The Physical Education Program Not Requiring Group Showers (Table 73)
10.53%	There Was an Established Teacher Supervised Study-Skills Center (Table 27)
5.56%	The Number of Hours of Orientation Provided for Incoming Faculty Members (Table 8)
5%	Whether There Was Interscholastic Athletic Competition (Table 14)
5%	Students Being Grouped By the Same Sex in Fine Arts (Table 74)
0%	The Ratio of Students to Total Professional Staff (Table 9)
Mean Total 54.79%