

AN INVESTIGATION INTO THE DEGREE OF
UNDERSTANDING OF THE DEVELOPMENTAL
CHARACTERISTICS OF PRE- AND EARLY ADOLESCENTS
BY JUNIOR HIGH AND MIDDLE SCHOOL TEACHERS

Dissertation for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
NICHOLAS C. TIMMER

1977



This is to certify that the

thesis entitled

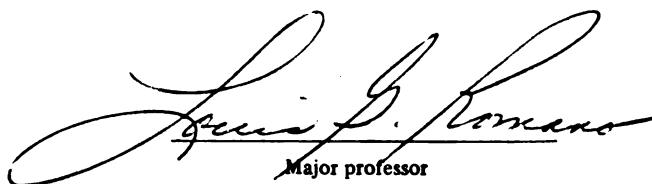
AN INVESTIGATION INTO THE DEGREE OF UNDERSTANDING OF THE
DEVELOPMENTAL CHARACTERISTICS OF PRE- AND EARLY
ADOLESCENTS BY JUNIOR HIGH AND
MIDDLE SCHOOL TEACHERS

presented by

Nicholas C. Timmer

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Admin. & H.E.


Major professor

Date December 6, 1976

ABSTRACT

AN INVESTIGATION INTO THE DEGREE OF UNDERSTANDING OF THE DEVELOPMENTAL CHARACTERISTICS OF PRE- AND EARLY ADOLESCENTS BY JUNIOR HIGH AND MIDDLE SCHOOL TEACHERS

By

Nicholas C. Timmer

This study was designed to assess the amount of understanding that teachers, presently working in our junior high schools and middle schools, have about the developmental characteristics of pre- and early adolescents. If middle schools seek to meet the needs of the students they serve, then teachers should have some knowledge of their students' developmental patterns.

A questionnaire was developed which assessed teacher understandings of pre- and early adolescent physical, intellectual, social, and emotional developmental characteristics. The instrument was administered to 161 middle school and junior high school teachers during the spring of 1976.

In order to gain some insight into middle school theory versus practice, comparisons of mean scores were made between those teaching in junior high schools and those teaching in middle schools. Some degree of understanding of student developmental characteristics was assumed, and it was important to determine how this understanding was acquired. Therefore three other comparisons

were made. Experienced teachers were compared with inexperienced; secondary certified teachers were compared with those who were not secondary certified; and teachers who desired to work with pre- and early adolescents were compared to those who preferred working with another age group.

Mean scores were obtained for each teacher group on each subscale of student characteristics: physical, intellectual, social, and emotional. Analysis of variance statistical procedures were then used to test the four hypotheses. The alpha level for determining significance was set at .05. The data were processed by computer at Michigan State University. Based upon the data, the research hypotheses were either accepted or rejected.

While the results are by no means conclusive, an analysis of the main effects does seem to project a slightly favorable trend toward middle schools and toward teachers who choose to work with 10 to 14 year old students. No significant differences were found when the independent variables of experience and teaching certificate were analyzed.

Interaction effects among the independent variables of school type, experience, certification, and commitment were also examined.

When the interaction of school type and teaching certificate was subjected to analysis of variance, significance at the .05 level was found on the variables of emotional and social characteristics. Significance was also found on the variable of emotional characteristics when the interaction of teaching certificate

and commitment was analyzed. The only significant interaction involved the independent variable of teaching certificate, but in every case the interaction was disordinal. For example, junior high teachers who held certificates other than secondary (K-12 or elementary) had a higher degree of understanding than middle school teachers with similar certification. But middle school teachers who hold secondary certificates demonstrated a higher degree of understanding of developmental characteristics than secondary certified junior high teachers. These data indicate that certification is a factor in understanding student characteristics, but conclusions are difficult to state without further investigation.

Middle school advocates point to an understanding of pre- and early adolescent developmental characteristics as being an important competency for teachers of this age group. The fact that this study did not conclusively demonstrate that this competency is present among certain teacher groups to a higher degree than in others does not diminish the importance of knowing as much about youngsters' growth characteristics as possible. Further investigation into teacher competencies in this area is recommended.

AN INVESTIGATION INTO THE DEGREE OF UNDERSTANDING
OF THE DEVELOPMENTAL CHARACTERISTICS OF PRE-
AND EARLY ADOLESCENTS BY JUNIOR HIGH
AND MIDDLE SCHOOL TEACHERS

By

Nicholas C. Timmer

A DISSERTATION

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

DOCTOR OF PHILOSOPHY

Department of Administration and Higher Education

1977

To Jackie, Nick, Amy and Mandy, whose sacrifices toward achieving this goal were much greater than my own.

ACKNOWLEDGMENTS

I am grateful to each person who so willingly gave his time and talents to assist me in the completion of this study.

I will forever value the guidance and support of Dr. Louis Romano, my chairman, my teammate, my friend.

Thanks, also, to Dr. Donald Nickerson and Dr. Walter Scott, whose comments and suggestions were especially helpful and greatly appreciated.

My deep appreciation to Mother and Dad, whose happy home and loving encouragement inspired all their sons to high professional achievement.

And a very special thanks to Mr. Brad Haines and the staff of Marshall Middle School. Their positive attitude, professionalism, and dedication to kids was not only the inspiration for this study, but also a source of comfort in knowing that the "ship was in good hands" during my frequent absences.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
 Chapter	
I. THE PROBLEM	1
Introduction	1
Purpose of the Study	3
Need for the Study	3
Importance to Education	6
Definition of Terms	8
Assumptions of Delimitations of the Study	10
Review of Related Literature	11
Hypotheses	11
Procedures for the Analysis of Data	11
Overview	13
II. REVIEW OF THE RELATED LITERATURE	15
The Middle School Movement	16
The Early Adolescent	20
The Middle School Teacher	26
Review of Related Studies	30
Summary	34
III. DESIGN OF THE STUDY	36
Introduction	36
Source of the Data	37
Instrument	38
Procedures	40
Hypotheses	41
Interaction	43
Analysis of Data	43
Summary	43
IV. ANALYSIS OF THE DATA	46
Introduction	46
Procedure	47
Presentation of Data	48

Chapter	Page
Hypothesis 1	50
Hypothesis 2	52
Hypothesis 3	53
Hypothesis 4	54
Interaction Effects	55
Data on School Type and Teaching Certificate	55
Data on School Type and Commitment	58
Data on Teaching Certificate and Commitment	59
Summary	60
V. SUMMARY AND CONCLUSIONS	64
Summary	64
Procedure	66
Findings	67
Findings on Interaction Effects	69
Conclusions	69
Recommendations for Further Study	74
Reflections	75
APPENDICES	77
A. DIRECTIONS FOR COMPLETING THE PERSONAL DATA FORM AND FOR ADMINISTERING THE TEACHER QUESTIONNAIRE . .	78
B. PERSONAL DATA FORM	80
C. TEACHER QUESTIONNAIRE	82
D. CORRELATION MATRIX	92
BIBLIOGRAPHY	93

LIST OF TABLES

Table	Page
3.1 The Number of Teachers Tested by Sex, Experience, Certification, and Commitment	44
4.1 Mean Scores for the Total Sample by Teacher Category .	49
4.2 Mean Scores for the Four Subtests of Physical, Intellectual, Social, and Emotional Developmental Characteristics	50
4.3 Analysis of Variance of Mean Scores of Middle School Teachers and Junior High Teachers on the Developmental Characteristics of Pre- and Early Adolescents	51
4.4 Analysis of Variance of Mean Scores of Experienced Teachers and Inexperienced Teachers on the Developmental Characteristics of Pre- and Early Adolescent Children	52
4.5 Analysis of Variance of Mean Scores of Secondary Certified Teachers and Non-secondary Certified Teachers on the Developmental Characteristics of Pre- and Early Adolescent Children	53
4.6 Analysis of Variance of Mean Scores of Committed Teachers and Non-committed Teachers on the Physical, Intellectual, Social, and Emotional Developmental Characteristics of Pre- and Early Adolescent Children	54
4.7 Mean Scores of Interaction Effects for Physical, Intellectual, Social, and Emotional Developmental Categories	56
4.8 Analysis of Variance of Mean Scores of School Type and Teaching Certificate	57
4.9 Analysis of Variance of Mean Scores of School Type and Commitment	58

Table		Page
4.10	Analysis of Variance of Mean Scores of Teaching Certificate and Teacher Commitment	59
4.11	Summary of Significant F Ratios for Main Comparisons and Interaction Effects by Developmental Category . .	63
D1	Correlation Matrix	93

CHAPTER I

THE PROBLEM

Introduction

The transition from junior high schools to middle schools has become a popular national trend. Raymer found in a 1974 study that 1,096 educational organizations in the United States are called middle schools.¹ This is in contrast to a 1966 study by Cuff that identified 499 middle schools nationwide.²

Leading middle school advocates, such as Alexander, Bondi, Eichhorn, Romano, Popper, and Grooms, have long claimed that the junior high with its 7-9 grade organization has outlived its usefulness. The middle school, claim its advocates, with its flexible schedule and individualized instruction, is better equipped to meet the physical, social, emotional, and intellectual needs of its students than the junior high with its academic departmentalization, competitive athletics, and sophisticated social activities. Joseph Bondi noted:

The name "junior" has become all too descriptive of an activity program (including interscholastic sports), a

¹Joe T. Raymer, "A Study to Identify Middle Schools and to Determine the Current Level of Implementation of Eighteen Basic Middle School Characteristics in Selected United States and Michigan Middle Schools" (Ph.D. dissertation, Michigan State University, 1974).

²William A. Cuff, "Middle Schools on the March," NASSP Bulletin 51 (February 1967): 83.

departmentalized schedule, and a social system that imitates that of the senior high school.³

Even though researchers such as Gatewood and Harris have found little difference in practice between a good junior high and a good middle school,⁴ middle school advocates claim that there should be a difference, because middle school programs should originate from the developmental characteristics of emerging adolescents. The works of Mead,⁵ Gesell,⁶ and other observers of child growth and development leave little doubt that there are identifiable growth characteristics of human development between childhood and adolescence. It is a knowledge of these characteristics, then, that should be present among the staff of a middle school organization if it is to provide a program based upon the needs of the students it serves.

Logically, if middle school teachers are ignorant regarding the basic developmental needs of the students they serve, it would follow that middle schools are not achieving, and indeed cannot achieve, the high purpose intended for them by their leading advocates. William Alexander in his book The Emergent Middle School states:

³Joseph Bondi, Developing Middle Schools: A Guidebook (New York: MMS Information Corporation, 1972), p. 9.

⁴Heather Sielor Doob, Summary of Research on Middle Schools (Carlington, Virginia: Educational Research Service, Inc., 1975), pp. 24-27.

⁵Margaret Mead, "Early Adolescence in the United States," NASSP Bulletin 49 (April 1965): 5-10.

⁶Arnold Gesell, Frances L. Ilg, and Louise Ames, Youth: The Years from Ten to Sixteen (New York: Harper and Brothers, 1956).

The nature of the middle school student is, in reality, what differentiates teaching in the middle school from teaching at any other level of the school organizational ladder.⁷

and:

A truly effective school program must be based on a knowledge about the learner who is to be served by the school.⁸

Purpose of the Study

The purpose of this study is to compare the degree to which selected groups of middle school and junior high teachers understand the developmental characteristics of pre- and early adolescents.

Need for the Study

Dilg,⁹ Nevins,¹⁰ and Elie¹¹ in separate research all hypothesized that the middle school in concept and practice was better able to meet the developing characteristics of the pre- and

⁷William B. Alexander et al., The Emergent Middle School (New York: Holt, Rinehart and Winston, Inc., 1968), p. 83.

⁸Ibid., p. 123.

⁹Charles Aaron Dilg, "The Middle School as a Curricular Improvement for Educating Emerging Adolescents--A Descriptive Study" (Ph.D. dissertation, State University of New York at Buffalo, 1970).

¹⁰James B. Nevins, "A Comparative Evaluation of the Curriculum in an Innovative and a Traditional Junior High School Based Upon Certain Characteristics of Student Educational and Personal Development" (Ph.D. dissertation, Texas Tech. University, 1970).

¹¹Marie-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. dissertation, Michigan State University, 1970).

early adolescent than the traditional junior high. A review of middle school literature also indicates that the distinctive feature of a middle school program is that it is founded within the theoretical framework of human growth and development.

If this theoretical base is in fact as important as the advocates claim, then a study should find evidence of a knowledge of these developmental factors present among the professionals serving these children. It also follows that a knowledge of these factors should be in evidence to a higher degree among middle school teachers than among junior high teachers.

Given the relatively rare middle school/junior high teacher training programs in our colleges and universities, a study by Hedberg indicates that the more elementary certified teacher is significantly less custodial than the secondary certified teacher. Therefore, he concludes the more humanistic-oriented middle school would do well to have a good number of elementary certified teachers on its staff.¹² Lounsbury and Vars refer to the child-centered elementary certified teacher and the subject-centered secondary certified teacher.¹³ The implication being that the child-oriented teacher better understands, and therefore teaches to the needs of the child. Do elementary

¹²James Douglas Hedberg, "Pupil Control Ideology of Middle School Teachers and Its Relationship to Student Alienation and to Selected Organizational and Teacher Variables" (Ph.D. dissertation, Michigan State University, 1973).

¹³John H. Lounsbury and Gordon F. Vars, "The Middle School: Fresh Start or New Delusion?" The National Elementary Principal 51 (November 1971): 18.

certificated graduates have a higher degree of understanding of the developmental characteristics of the pre- and early adolescent learner?

It must be assumed that a study will find evidence of a knowledge of developmental characteristics to a significant degree among some segments of the sample population. It is important to determine if this knowledge is primarily acquired through experience or through some other learning method.

A survey done by Melbourne taken from a sample of present junior high/middle school teachers indicated that very few had junior high/middle school teaching as a career choice, that few did their student teaching in a junior high/middle school, and that few ever anticipated teaching at this level.¹⁴ Does this lack of commitment still exist in our middle schools? If so, does this have any effect on understanding the characteristics of these pre- and early adolescents?

Because of the claims of middle school advocates, a study is needed to compare the degree to which middle school and junior high school teachers understand the developmental characteristics of pre- and early adolescents. It is also important to assess the degree to which other factors such as experience, certification, and commitment have on the acquisition of knowledge relating to these developmental factors.

¹⁴Richard Sheehan Melbourne, "Junior High School Teachers' Evaluation of Pre-Service Preparation" (Ph.D. dissertation, St. Louis University, 1969).

Importance to Education

Without exception, the writings of middle school advocates stress the importance of schools founded on the principles of child growth and development. In addition, research conducted by Frost,¹⁵ Underwood,¹⁶ Hubert,¹⁷ and Helder¹⁸ found that an understanding of the developmental characteristics of pre- and early adolescents is an essential trait for teachers of middle school students. Jerry Rottier, chairman of the Division of Education at Findlay College, in a recent article outlining his institution's new teacher preparation program stated:

The complexity of the transescent demands that teachers of these youngsters possess the basic knowledge and understanding of the social, emotional, physical, and intellectual factors that affect them.¹⁹

Surprisingly, then, a review of research failed to locate any studies directed toward determining the degree to which a knowledge of these factors is present among teachers currently working in

¹⁵Ernest R. Frost, "A Proposed Model for the Training of Intermediate Level School Teachers" (Ph.D. dissertation, Ohio University, 1975).

¹⁶Barbara Ann Underwood, "A Comparison of Perceived Concerns of Beginning and Experienced Junior High School and Middle School Teachers" (Ph.D. dissertation, Indiana University, 1974).

¹⁷James Burrell Hubert, "A Survey of the Recommendations of Selected Teachers for the Preparation of Teachers for Junior High and Middle Schools" (Ph.D. dissertation, University of New Mexico, 1972).

¹⁸William James Helder, "An Evaluation of the Preparation of Junior High School Teachers at Michigan State University" (Ph.D. dissertation, Michigan State University, 1971).

¹⁹Jerry Rottier, "Preparing Teachers to Make a Difference--for Transescents," Middle School Journal 7 (March 1976): 13.

our middle and junior high schools. Nor does a review find any studies which indicate that this knowledge makes any difference in the implementation of middle school concepts.

Therefore, this investigation will have the following implications:

1. This study will determine whether the factor of understanding the developmental characteristics of pre- and early adolescents is presented to a higher degree among middle school teachers than among junior high teachers. This would lend substance to the claim by middle school advocates that middle school teachers better understand the needs of their students.

2. By investigating the variable of teacher experience, this study will indicate whether this understanding of developmental characteristics is present to a higher degree among experienced teachers. This may indicate a learned-on-the-job factor which will have implications for in-service training, particularly for beginning teachers.

3. This study will indicate whether non-secondary or secondary trained teachers have a higher degree of understanding of developmental characteristics, thus having implications for teacher training and placement.

4. This study will determine whether those who choose to work with this age group have a higher degree of understanding of developmental characteristics, and therefore indicate the validity of a commitment to middle school/junior high teaching.

5. This study will determine the importance of the presence of this understanding to middle school implementation. If there are good middle schools with a substantial number of teachers who do not understand developmental characteristics, or if this factor is present to the same degree in junior high schools as it is in middle schools, then perhaps the factor is not as important as the advocates indicate. Therefore, its importance to middle school concept implementation is not significant.

6. This study will indicate the need for more pre- and in-service training for teachers, if understanding is present to a low degree.

7. The instrument developed for this study, if reliable, could be used by school administrators to determine whether teachers understand these developmental characteristics of students, thus being significant for use in the selection of teachers for the middle school.

Definition of Terms

Middle school: A middle school is an educational organization with grades 5-8 or 6-8 with the expressed purpose of providing an educational program based upon the developmental characteristics of the children it serves.

Junior high school: A junior high is an educational organization with grades 7-9 whose program reflects many of the characteristics found in the senior high school, and therefore not specifically geared to meeting the needs of pre- and early adolescents.

Developmental characteristics of pre- and early adolescents:

The developmental characteristics of pre- and early adolescents refer to the distinct physical, emotional, social, and intellectual characteristics of 10 to 14 year olds as identified by leading physiologists.

Pre-adolescent: A pre-adolescent is a child whose developmental characteristics indicate that he is between childhood and early adolescence, usually about 10 to 12 years of age.

Early adolescent: An early adolescent is a child whose developmental characteristics indicate that he is about to enter the adolescent stage of human development, usually 12 to 14 years of age.

Transescent: A transescent is a child whose developmental characteristics indicate that he is between the stages of childhood and adolescence, usually 10 to 14 years of age.

Pre-service training of teachers: Pre-service training refers to the training that a prospective teacher receives before entering the profession.

In-service training of teachers: In-service training is the training that a teacher receives while working as a member of the teaching profession.

Experienced teacher: An experienced teacher is one who has taught for more than two years.

Inexperienced teacher: An inexperienced teacher is one who has taught for less than two years.

Non-secondary certified teacher: A teacher holding either a provisional or permanent certificate which certifies him to teach

all subjects in grades K-8 or which certifies him to teach in a specialized area K-12.

Secondary certified teacher: A teacher holding a provisional or permanent certificate which certifies him to teach in specific areas in grades 7-12.

Committed teachers: A committed teacher is one who makes a positive response to the question, "If given a choice would you prefer to continue working with this age group?"

Non-committed teacher: A non-committed teacher is one who makes a negative response to the question, "If given a choice would you prefer to continue working with this age group?"

Assumptions of Delimitations of the Study

The validity of this study is affected by the following factors:

1. The reliability and validity of the survey instrument.
2. The study assumes that the responses given on the questionnaire are valid perceptions of the teacher's own understandings.
3. The study concentrates on one area of middle school/junior high teacher competency. Many other factors contribute to the successful implementation of middle school concepts.
4. The difficulty in defining what constitutes a good middle school and a good junior high school.

Review of Related Literature

A review of the literature will include:

1. Studies relating to the developmental characteristics of pre- and early adolescents.
2. Studies of middle school and junior high school theoretical foundations.
3. Studies of the competencies needed for teachers of the pre- and early adolescent.
4. Studies involving the use of a Likert-type questionnaire.

Hypotheses

- H₁: Middle school teachers will have a significantly higher degree of understanding of the developmental characteristics of pre- and early adolescents than junior high teachers.
- H₂: Experienced teachers will have a significantly higher degree of understanding of the developmental characteristics of pre- and early adolescents than inexperienced teachers.
- H₃: Non-secondary certificated teachers will have a significantly higher degree of understanding of the developmental characteristics of pre- and early adolescents than secondary certificated teachers.
- H₄: Teachers who choose to work with pre- and early adolescents will have a significantly higher degree of understanding of the developmental characteristics than teachers who would prefer to be working with another age group.

Procedures for the Analysis of Data

The Sample

The sample for this study was three middle schools and three junior high schools in Michigan whose programs typify

the concepts commonly associated with the two groups of schools.

The Instrument

The survey instrument was developed by the researcher. It is a Likert-type questionnaire which measures the degree of understanding of the developmental characteristics of pre- and early adolescents on the part of the junior high/middle school teachers. The instrument was screened by a panel of experts and field tested for reliability prior to its use in this study.

Administration of the Instrument

The researcher visited each school and administered the survey instrument to all teachers attending a faculty meeting called by the principal for this purpose. This assured anonymity for the participants and controlled for test reliability.

Treatment of the Data

The data were programmed and processed by the computer at Michigan State University.

1. A four-way analysis of variance table was used to determine the significance of difference between mean scores of the junior high and middle school teachers, between committed and non-committed teachers, between elementary certified and secondary certified teachers, and between experienced and inexperienced teachers.

2. Possible interaction effects among the four independent variables were investigated by the analysis of variance procedure.

3. The four-way ANOVA procedure was selected because of the four independent variables identified in the study.

Overview

This research is an attempt to determine whether there are differences among selected groups of teachers as to their understanding of the physical, intellectual, social, and emotional developmental characteristics of pre- and early adolescent children. The study is limited to selected junior high schools and middle schools in Michigan.

Chapter II contains a review of literature related to the middle school movement and its theoretical foundations. The characteristics of both middle school teachers and students are discussed. A review of research relative to the developmental characteristics of pre- and early adolescents is also presented.

The research design is described in Chapter III. The composition of the sample and the instrument used to gather data along with the procedures used to analyze data are also discussed in this chapter.

Detailed hypotheses of the study and an analysis of the data are presented in Chapter IV. Tables describing the data and the statistics employed to determine the acceptance or rejection of the research hypotheses are shown.

A summary of the study with the significant findings is presented in Chapter V. Conclusions, implications, and suggestions for further study are included in this chapter.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

A discussion of literature has been undertaken to emphasize the concept that the middle school is a school founded on the principle of meeting the needs of youngsters ages 10 to 14. Literature was reviewed and summarized in this chapter for the following reasons:

1. To show that the middle school evolved out of a desire to implement a school program based upon the developmental characteristics of pre- and early adolescence.
2. To demonstrate that students between the ages of 10 and 14 have unique growth characteristics, and therefore are themselves unique.
3. To point out the woeful lack of training and commitment on the part of teachers working with this age group.
4. To summarize studies which involve the growth characteristics of early adolescents and demonstrate that a knowledge of these characteristics is a desirable trait for teachers to have.

Therefore this chapter has four sections: the middle school movement, the early adolescent, the middle school teacher, and studies related to developmental characteristics of early adolescents.

The Middle School Movement

The middle school movement began in the early 1960's when pioneer schools in several midwestern states emerged. Although many advocates claim that this movement is a new concept, there are strong indications that middle schools are rededicating themselves to the principles on which the 7-9 junior high schools were founded some 60 years ago. Bossing and Cramer summarized seven purposes of the junior high school. This summary was taken from their review of early junior high literature.

They noted that junior high schools should:

1. Provide a gradual transition from the elementary school to the secondary school.
2. Exercise a holding power function and reduce drop out during this period.
3. Help youth understand the nature of the society of which they are a part.
4. Provide an exploration period for youth to discover and understand their capacities, interests, and aptitudes.
5. Assist pupils to make the fullest adjustments possible for self-realization and service to society.
6. Provide vocational career preparation.
7. Recognize the uniqueness of¹ this school to provide for the needs of early adolescence.

These purposes are very similar to those espoused by middle school advocates as this review will demonstrate. Why, then, the substantial movement away from the junior high concept over the last 10 years? The answer to this question seems to lie in the concept of rededication. Alexander states, "In our judgement, today's interest in a new middle school stems in part from dissatisfaction with what the junior high has become, not with the

¹Nelson L. Bossing and Roscoe V. Cramer, The Junior High School (Boston: Houghton Mifflin Company, 1965), p. 35.

original conception of function."² Thus, dissatisfaction with the American junior high seems to emanate from a sense of lost purpose. Junior high schools were not achieving what their advocates said that they should be achieving relative to their stated purposes.

The reasons for this lost purpose seem to focus in the word "junior." Literature indicates that over the years the junior high gradually assumed the character of the senior high. It could never establish itself as anything more than a step-child of the high school. Although blessed with a distinct and unique philosophy, rationale, and student population, it never did establish distinct and unique programs. It lacked its own identity and floundered, for several reasons, one of which is pointed out by John R. Dettre. He writes:

It [the junior high] failed to achieve its announced goals not because it lacked right on its side; rather it failed in part because the overall mentality of those in education was such that they were not capable of intellectually and psychologically capitalizing on the emergence of a "third force" and moving to create for themselves a separate and equal status with elementary and secondary.³

The most important reason, however, seems to be the failure of the junior high school to meet the needs of students. Several factors such as social change, and the individual characteristics of each student have not been taken into account when typical junior high school programs have been implemented.

²Alexander et al., op. cit., p. 4.

³John R. Dettre, "The Middle School, A Separate and Equal Entity," The Clearing House 48 (September 1973): 20.

Dissatisfaction with the junior high school has led to the development of the middle school concept as an educational alternative. Basically this concept is an attempt to redefine the functions of schools in the middle. In general, middle school concepts are a composite of the 60-year-old rationale of the junior high, new research into the nature of pre-adolescent learning needs, and an awareness of the cultural forces which impact a child of today.

Eicchorn notes that there are at least three factors present in motivating educators to redefine the purposes of schools in the middle:

1. There is a growing body of knowledge relating to the characteristics of boys and girls in late childhood and early adolescence that is causing a reaffirmation of the principle of uniqueness espoused by early junior high leaders. The fact that biological maturation is occurring at an earlier age adds to its impact.
2. There are significant changes in our culture such as population shifts, population mobility, the dream of racial equality, developments in transportation and communication, and the forces involved in a developing technology which are prompting a reconsideration of school building as well as organizational pattern.
3. There is a growing realization that schools in the middle have become rigid and institutionalized. A variety of developing educational concepts such as continuous learner programs, flexible schedules, nongrading, interdisciplinary curriculum, cooperative planning and teaching and affective programs, appear to succeed in a revised framework.⁴

Upon what justification, then, are emergent middle schools being conceived? Alexander and Kealy in a review of statements of rationale of numerous middle schools suggest the following:

⁴Donald H. Eichhorn, "Middle School in the Making," Educational Leadership 31 (December 1973): 196.

1. To provide a program especially adapted to the wide range of individual differences and special needs of the "in-between-ager."
2. To create a school ladder arrangement that promotes continuity of education from school entrance to exit.
3. To facilitate through a new organization, the introduction of needed innovations in curriculum and instruction.⁵

It is interesting to note the similarity between this summary of middle school justification and the summary of junior high school purposes as stated earlier by Bossing and Cramer. They are virtually the same!

For the purposes of this research, however, particular attention must be focused upon the function of meeting the needs of the pre- and early adolescent learner. Without exception, the leading middle school advocates emphasize the creation of a learning program based upon the developmental needs of the pre- and early adolescent. The statements of several are as follows:

Bondi: "Each school must consider the characteristics of its students and develop an instructional program that will take into consideration the unique needs of those students it serves."⁶

Romano and Georgiady: ". . . The middle school concept will require the following important principles:

1. To recognize clearly the unique physical, emotional, social, and psychological characteristics of children in this age group.

⁵William M. Alexander and Ronald P. Kealy, "From Junior High School to Middle School," The High School Journal 52 (December 1969): 152.

⁶Bondi, op. cit., p. 18.

2. To utilize knowledge concerning characteristics of these children as major criteria for developing school programs for them."⁷

Eichhorn: "The emergence of the middle school . . . promises to bring the needed focus to this special period of growth and development in a child's school life."⁸

Alexander: "These changes that occur during the period of transition from childhood to adolescence should be reflected, we believe, in a transitional school program. The program for the 'in-between-ager' should be developed with direct concern for his characteristics."⁹

Curtis: "The middle school is a transitional school concerned with the most appropriate program to cope with the personal and educational developmental needs of emerging adolescence."¹⁰

The Early Adolescent

Literature on the development of the American middle school strongly emphasizes the need for educational programs based upon the unique characteristics of the emerging adolescent. Leading middle school advocates claim that the junior high school is failing to provide learning experiences that meet the needs of

⁷Louis G. Romano, Nicholas P. Georgiady and James E. Heald, The Middle School (Chicago, Illinois: Nelson Hall Company, 1973), p. 466.

⁸James E. Hertling and Howard G. Getz, Education for the Middle Years: Readings (Glenview, Illinois: Scott Foresman and Company, 1971), p. 102.

⁹Alexander et al., op. cit., p. 42.

¹⁰Thomas E. Curtis, "Preparing Teachers for Middle and Junior High Schools," NASSP Bulletin 56 (May 1972): 61.

their students, primarily because the junior high has assumed many of the practices more appropriate to what is commonly found in high schools. Literature reviewed later in this chapter points out that fact that there are few pre-service programs for middle school teachers, and a lack of commitment on the part of teachers and students in training to work with emerging adolescents. This only perpetuates the notion that emerging adolescents are being serviced by those who have little understanding of their needs and who don't really care about working with them.

Strangely, even though the developmental period of early adolescence is one of the most complex, schools, programs, and professionals have not been geared to deal with this age group. Bondi states, "At no time in the schooling of our children do we find greater differences in the physical, social, emotional, and intellectual development of youngsters than during the middle years of 10 to 14 years of age."¹¹

Romano notes that there is a definite lack of scientific studies on the transition period of pre-adolescence. And,

. . . because of the lack of information, educators and parents have not provided the necessary experiences to meet the pre-adolescents' basic needs. This is especially reflected in the junior high school organization where the early adolescent is looked upon merely as a "junior" rather than as a transescent with definite and unique characteristics.¹²

¹¹Bondi, op. cit., p. 19.

¹²Romano, Georgiady, and Heald, op. cit., p. 91.

A thorough understanding, therefore, of this complex youngster, particularly on the part of teachers, is essential if we are going to meet his educational needs.

Who is this unique character? The character with the unfamiliar names like "transescent," "emerging adolescent," and "in-between-ager?" What are some of the developmental characteristics that make him so complex?

Physically, as Thornburg notes, all youths, male and female, will experience significant physical changes during the pre-puberty period.¹³ Although the developmental sequence is essentially the same for all individuals regardless of sex, the chronological age at which physical changes occur varies with the individual. The main point for educators is that all changes taken together make each individual unique, and therefore create the need for a learning program which meets the needs of each individual. Several examples of major physical changes which have implications for learning programs follow.

Emerging adolescents:

1. Grow rapidly.¹⁴
2. Have poor posture and are awkward.¹⁵
3. Bones grow much faster than muscles.¹⁶
4. Energy production varies with changes in the thymus and thyroid glands.¹⁷

¹³Herschel Thornburg, "Learning and Maturation in Middle School Age Youth," The Clearing House 45 (November 1970): 152.

¹⁴Romano, Georgiady, and Heald, op. cit., p. 187.

¹⁵Ibid., p. 191. ¹⁶Ibid., p. 189. ¹⁷Ibid., p. 188.

5. Vision is altered.¹⁸
6. Sex organs begin assuming adult characteristics.¹⁹
7. Physical coordination is poor compared to other growth periods.²⁰

Mental development of emerging adolescents follows the same patterns of unique individual characteristics as does physical development. Eichorn notes that there are wide variations in the rate of mental development among individuals.²¹ This period is generally characterized as a period of intellectual awareness. Studies indicate that the pre- and early adolescent's intellect is no longer tied to the concrete and immediate, but enters a period of logical and deductive reasoning. So even though individuals differ in their rate of mental development, certain characteristics are common to this period.

Emerging adolescents:

1. Are into the period of critical thinking.
2. Can deal with cause and effect relationships.
3. Are interested in man's relationship to man.²²
4. Need individual learning activities.²³

¹⁸Gesell, Ilg, and Ames, op. cit., p. 282.

¹⁹Romano, Georgiady, and Heald, op. cit., p. 188.

²⁰Ibid., p. 176.

²¹Dorothy H. Eichorn, "Variations in Growth Rate," Childhood Education 44 (January 1968): 286.

²²Hertling and Getz, op. cit., pp. 71-72.

²³Romano, Georgiady, and Heald, op. cit., p. 206.

5. Can test hypotheses.²⁴
6. Move from the world of fantasy and begin dealing with the real and possible.²⁵
7. Are intellectually curious.²⁶
8. Can assume much responsibility for their own work.²⁷
9. Can memorize facts.²⁸

The emerging adolescent's social development is characterized by a striving for independence from the family while seeking closer relationships with peers. This change in social emphases is often confusing to the 10 to 14 year old. This behavioral change frequently results in erratic behavior, and has implications in attempting to meet the needs of this group for both parents and teachers. Bondi indicates that guidance in social relationships is essential to the emerging adolescent:

During the middle school years the child will need guidance in working with his peers within the classroom, with other people outside the classroom, and in adjusting to the opposite sex. As he grows more independent of his family, he will need guidance in family adjustment.²⁹

A good summary of several specific social characteristics of pre-adolescents is found in a booklet published by the Michigan Association of School Boards. An emerging adolescent:

²⁴Ibid., p. 180.

²⁵Alexander et al., op. cit., p. 34.

²⁶Bondi, op. cit., p. 23.

²⁷Romano, Georgiady, and Heald, op. cit., p. 182.

²⁸Ibid.

²⁹Bondi, op. cit., p. 21.

1. Needs to be a member of a peer group.
2. Seeks prestige rather than adult approval.
3. Respects good sportsmanship, but is highly competitive.
4. Develops an interest in a worthy self.
5. Wants a stable environment.
6. Possesses a keen sense of right and wrong.
7. Attempts to break away from the family, but is lost without security.
8. Is noisy and restless.
9. Often doesn't follow responsibilities.³⁰

Perhaps the strangest set of developmental traits is found in the emerging adolescent's emotional makeup. Wattenburg uses the word "queer" to describe the behavior of the 10 to 14 year old.

He also notes, ". . . a skilled psychologist observing pre-adolescent children for only a brief period often will not be sure whether they are being 'normal' or are emotionally disturbed."³¹

Emotional traits are characterized by mood instability and the intense desire on the part of these children to leave childhood behind. Research by Gesell, Ilg, and Ames provides an insight into specific emotional characteristics of children aged 10 to 14.

Emerging adolescents:

1. Have trouble controlling their emotions.
2. Have strong feelings about fairness.
3. Are very self-critical.
4. Appreciate humor and often have a strong sense of humor themselves.
5. Experience extreme shifts of behavior between childishness and sophistication.
6. Are quick to show anger.

³⁰The Middle School (East Lansing, Michigan: Michigan Association of School Boards, 1965), p. 6.

³¹William W. Wattenburg, The Adolescent Years (New York: Harcourt, Brace and Co., 1955), p. 66.

7. Experience dramatic shifts in moods often for no apparent reason.
8. Are very fearful and experience a wide variety of fears, particularly of animals and the dark.³²

The growth period of pre-adolescence is identified by change and difference. The meshing of dynamic physical, mental, social, and emotional growth characteristics within each individual makes for a very complex child. These complex children thus have needs--special needs--which must be provided for both by the school and home if we are to help these youngsters through this difficult growth period. Bondi notes that certain needs seem to be basic to the pre-adolescent child:

1. The need to be loved.
2. The need to be safe and free of threat.
3. The need to be part of a group with identification and acceptance.
4. The need to be recognized.
5. The need to be independent.³³

In order to meet these needs, teachers must have a basic understanding of the developmental characteristics that make up these unique individuals.

The Middle School Teacher

In light of what we now know about the pre-adolescent, more and more educators and child psychologists are urging a school program based upon the growth characteristics of this age group. Middle schools have been established to provide programs to meet these needs. While much attention and many resources have been

³²Gesell, Ilg, and Ames, op. cit., pp. 329-53.

³³Bondi, op. cit., p. 22.

given to the establishment of middle school facilities and programs, a review of literature indicates a lack of resources devoted to improving the quality of teachers for this age group.

It would not be an over-simplification to state that the teacher is the key ingredient to the success of any school program. Yet, as Vars notes: "The junior high after 60 years of existence is still a school without teachers."³⁴ Clark states:

Most junior high school teachers are prepared in college for high school teaching; a smaller number have been prepared for elementary schools. If this form of preparation has been demonstrably inadequate for junior high school teaching, it is certainly foolish to assume that middle schools can become successful if they, too, depend on the same pool of teachers.³⁵

Unfortunately, the situation doesn't seem to be improving. In a survey done several years ago by Krinsky and Pumerantz, it was revealed that only 23 percent of the 160 teacher-training institutions had middle school teacher preparation programs. Despite the growth of the middle school concept, this survey represented little change from a 1962 study. The researchers thus concluded that teacher training in intermediate education is "static and neglected."³⁶

Just as unfortunate is the lack of commitment toward working with pre-adolescents often exhibited by students in education

³⁴Romano, Georgiady, and Heald, op. cit., p. 480.

³⁵Sanford Clark, "The Middle School--Specially Trained Teachers Are Vital to Its Success," The Clearing House 46 (December 1971), p. 218.

³⁶Judith L. Krinsky and Philip Pumerantz, "Middle School Teacher Preparation Programs," The Journal of Teacher Education 23 (Winter 1972): 468.

and by teachers in the field. Students are not choosing middle school preparation programs even when they are offered. Vars suspects that the problem could be a lack of visibility for such programs.³⁷ However, without middle grade certification by state agencies, students in education have only two choices when they enter college--elementary and secondary. To many this means elementary teaching or high school teaching.

Several basic conflicts over the direction of teacher training programs for middle school teachers are advanced by Gordon Vars, and therein may lie the reasons for the lack of such programs. Vars found:

1. A lack of agreement on whether it is better to have students interact with children or better to emphasize the science of pedagogy.
2. A lack of agreement on what should be stressed--more subject area specialization or more methods courses?
3. A lack of agreement on whether middle school teachers should be specialists in one subject area or somewhat familiar with several.
4. A lack of agreement on which should come first--special teacher preparation programs or special state certification requirements.
5. A lack of agreement on where effort should be concentrated to get middle school teacher preparation programs headed in the right direction. Should college educators push harder to get programs established? Or should hiring officials exert more pressure on college administrators and certification officials?³⁸

Many teachers presently working in our intermediate schools are there simply because it is a job, and are waiting for the opportunity to transfer to a high school or an elementary school. For example, research done by Adeline Konsh among New

³⁷Romano, Georgiady, and Heald, op. cit., p. 480.

³⁸Ibid., pp. 482-85.

York City English teachers reveals several reasons why teachers requested transfers from the junior high to the senior high. She found that:

1. Junior high teachers neither planned for nor prepared for junior high teaching.
2. Their interests were basically subject-matter content and their own intellectual interests.
3. Many factors, such as too many teaching periods, lack of materials, and discipline problems, contributed to their dissatisfaction.
7. Junior high teaching failed to provide prestige, a rewarding emotional experience, and sufficient intellectual challenge.³⁹

While much literature on the subject of middle school/junior high teacher training, certification, and commitment is quite pessimistic, it is still a fact that our intermediate schools employ many fine teachers dedicated to this age group.

It is also a fact that new and exciting programs are underway in several of our colleges and universities that focus on training teachers for our middle schools. Gordon Lawrence at the University of Florida headed a state project which identified 30 measurable teacher competencies for middle school teachers.

³⁹Adeline Konsh, "Teacher Turnover in New York City Junior High Schools, Some Common Factors in the Backgrounds of English Teachers Who Have Transferred From the Junior High School to the Senior High School of New York City and Their Reactions to Selected Junior High School Practices and Personnel" (Ph.D. dissertation, New York University, 1966).

These 30 competencies were subdivided into three sets: personal qualities, understandings, and instructional skills. Teachers trained in this competency-based program must demonstrate a commitment to the education of transescents, and an understanding of the physical, intellectual, and socio-emotional nature of the pre-adolescent.⁴⁰

A similar competency-based program was recently launched at Findlay College in Ohio. Jerry Rottier lists eight specific program components for training teachers to work with middle grade students. The first component is "To understand the social emotional, physical, and intellectual development of the transescent."⁴¹

Even though programs such as these leave room for optimism, the present lack of pre-service training, separate certification, and commitment places a heavy strain on teacher selection procedures and in-service programs within our present school organizations. Worse, the students served by uncommitted and untrained teachers who don't know, like, or understand them are being cheated. This is a tragedy in American education.

Review of Related Studies

A review of literature on the history, philosophy, definition, and function of middle schools substantiates the view that

⁴⁰Gordon Lawrence, "Measuring Teacher Competencies for the Middle School," The National Elementary Principal 51 (November 1971): 62.

⁴¹Rottier, op. cit., p. 13.

middle school programs must be founded upon the developmental needs of early adolescence. It is essential that teachers as facilitators of these programs have an understanding of these students and their physical, social, intellectual, and emotional growth patterns.

Even though there are very few teacher training institutions with middle school programs and even fewer states that require middle school certification, middle school advocates, administrators, and teachers emphasize the need for an understanding of the students served.

Surveys of professional people as to their recommendations for junior high/middle school teacher competencies have shown the competency of understanding the growth characteristics of transescents to be of very high priority. Although these studies are limited in number, several are cited to emphasize this point.

Typical is a survey done among middle school and junior high teachers in Indiana. James Stainbrook found that the teachers surveyed ranked "a basic understanding of individual differences in the social, emotional, mental and physical development of young adolescents as a prerequisite to good teaching in our intermediate schools."⁴²

And similarly, Jerome Weiser, who surveyed teachers, administrators, and teacher educators, found that there was

⁴²James Stainbrook, "A Current and Comparative Analysis of the Professional Preparation of Teachers in the Junior High and Developing Middle Schools of Indiana" (Ph.D. dissertation, Indiana University, 1970).

agreement by all surveyed that junior high teachers should know the growth characteristics of middle-aged youngsters.⁴³

Through the writings of middle school experts and practitioners and the findings of several researchers, it can be concluded that a viable competency for teachers of pre- and early adolescents is an understanding of their growth characteristics.

A number of studies have been completed involving the developmental characteristics of early adolescents. In general, research of this nature has attempted to determine if middle school program concepts were instrumental in meeting the growth needs of students serviced.

John Fenlon in a 1975 study examined various middle school practices, comparing them to the cognitive characteristics of pre- and early adolescence. He found that most of the practices were compatible with these particular needs of students.

In a 1970 dissertation, Charles Dilg attempted to determine if the middle school differed from the junior high in attempts to develop curricula based upon emerging adolescent needs. He concluded that several practices of the middle school, particularly

⁴³Jerome A. Weiser, "An Analysis of the Perceptions of Selected Junior High School Teachers, Principals and Teacher Educators in Regard to Desirable Outcomes for Junior High School Teacher Education" (Ph.D. dissertation, Wayne State University, 1969).

⁴⁴John L. Fenlon, "An Examination and Development of Recommendations for Implementing Selected Components of a Middle School Instructional System Based Upon the Cognitive Characteristics of Pre- and Early Adolescence" (Ph.D. dissertation, University of Denver, 1975).

its flexibility, were better able to meet students' needs.⁴⁵ Teachers' understandings of students were not involved in this research.

John Vaughn analyzed research on the physical and intellectual growth characteristics of 10 to 14 year olds. A survey of several schools led to a conclusion that program changes were necessary for education in the middle years because of changing human growth patterns and cultural forces such as racial integration.⁴⁶

A similar study was done by John Hefner. He made several recommendations for a middle school program based upon the development of pre- and early adolescents.⁴⁷ Many of his recommendations are current practices in middle schools today.

Although a review of research indicates substantial interest in the developmental characteristics of early adolescent children, these studies have been directed into the area of middle school and junior high practices. No research was found which focused on teachers and their knowledge (or lack of knowledge) of these early adolescent characteristics.

⁴⁵Dilg, op. cit.

⁴⁶John Warren Vaughn, "Implications of Physical and Intellectual Growth Characteristics, Interests and Cultural Forces for the Improvement of the Middle School Program" (Ph.D. dissertation, Michigan State University, 1969).

⁴⁷John Earl Hefner, "What Research Says About the Years 10-14: A Guide to Middle School Organization" (Ph.D. dissertation, Ball State University, 1969).

Summary

Dissatisfaction with the education of youngsters in the early adolescent stage has focused upon the 7-9 junior high school. Critics have claimed that while the rationale for the junior high educational programs is sound, practice has deviated from rationale. Out of this dissatisfaction has come a new school organization called the "middle school."

Middle school advocates and practitioners claim that this new organizational structure is better equipped than the junior high to implement programs which will improve education for emerging adolescents.

The key to the middle school concept, according to experts like Alexander, Eichhorn, Romano, Bondi, and many others, is its focus on the physical, social, emotional, and intellectual developmental characteristics of the individual student.

The key to success in any educational institution is the teacher. Unfortunately, programs for training and certifying middle school teachers has lagged far behind the implementation of the concept. Teacher training institutions and state certification agencies have not recognized the need for special programs that train and certify teachers to work with these unique youngsters. Perhaps even more unfortunate is the lack of commitment toward working with this age group exhibited by many teachers presently working in our junior highs and middle schools. Without specific training and without a desire on the part of many to

work with youngsters of this age, can there be any understanding of their individual needs which is so essential to a middle school organization?

Previous studies have indicated disenchantment with the methods used for training teachers. They have also indicated that understanding the needs of the students should be a desirable trait among intermediate grade teachers. Although few studies have been done in the area of developmental characteristics, research does tend to substantiate that middle school practices such as flexible scheduling, team teaching, individualized instruction, and exploratory offerings do offer opportunities for better meeting the educational needs of these youngsters.

Without proper training and selection of middle grade teachers, however, it is doubtful whether any program can be successfully implemented which focuses on that individual child.

CHAPTER III

DESIGN OF THE STUDY

Introduction

The major purpose of this study is to compare the degree to which selected groups of middle school and junior high school teachers understand the developmental characteristics of pre- and early adolescents. Theoretically, intermediate grade teachers should have a knowledge of these characteristics if they are to implement programs which meet the needs of the children they serve.

A review of literature indicated a lack of specific training in developmental characteristics for teachers working with this age group. Therefore, this study attempts to determine if there are differences in the degree of understanding among the teachers selected for this study. Specifically, does an understanding of developmental characteristics vary with experience, certification, type of program, and commitment to this age group? Considering the above factors, is there any difference in understanding the variables of physical, intellectual, social, and emotional characteristics?

An instrument was developed which assessed the understandings of selected teacher groups in regard to samples of pre-adolescent growth criteria. The data were statistically analyzed

by comparing the scores of various groups and subgroups within the teacher population selected.

It is the primary concern of this chapter to look at the composition of the sample, the instrument used, the methods used to collect the data, and the procedures used for data analysis.

Source of the Data

This researcher, in consultation with a team of middle school theorists and practitioners, selected three middle schools in lower Michigan for this study. The 18 basic characteristics of good middle schools which were developed and tested by Riegle, Georgiady, and Romano¹ were used as selection criteria. The selection was made without regard to grade organization. It made no difference whether they were 5-8 or 6-8 middle schools. The team has spent many years in the Michigan middle school movement. Therefore, identifying three exemplary middle schools was not difficult.

The selection of the junior high schools proved to be a more difficult task. We were confronted by the question, what is an exemplary junior high? By what criteria is a junior high evaluated? Finally, a list of several junior high schools all with grades 7-9 was developed. The principals of these listed schools were contacted, and the final selection was based upon telephone inquiries which indicated a lack of typical middle school practices within the school.

¹Romano, Georgiady, and Heald, op. cit., pp. 73-84.

It should be stressed that the major area of concern was not the schools nor their programs, but the teachers working within these organizations.

It was important that the teachers responding to the questionnaire work with a cross-section of students from various socioeconomic backgrounds. Even though research doesn't yet indicate variance in developmental characteristics between students of different racial or cultural backgrounds, teaching situations and perhaps teacher perceptions of developmental traits could vary because of these factors. Therefore, these assumed variables were controlled by selecting one junior high and one middle school each from an urban area, a suburban area, and a small town.

Instrument

The purpose of the test instrument was to measure the teacher's understanding of the developmental characteristics of pre- and early adolescents, and then to compare the results among the various groups and subgroups within the sample population.

The development of the instrument began with a survey of the writings of middle school experts and behavioral psychologists. Certain typical developmental traits of emerging adolescents were listed, and further reading was done to determine their common acceptance.

It became apparent during this survey of literature that the uniqueness of these children of interest made questions with right and wrong answers difficult if not impossible to design. It was also assumed that many teachers would respond to a yes-no

type question based upon knowledge of a specific student or a recent experience with a student. Thus the concept of degrees of understanding was decided upon as the best method to gather data which better reflected the teachers' true perceptions of all their students. This concept of degrees also allowed for individual variations in defining what typical really means when dealing with such untypical students.

A Likert-type response to each developmental trait was developed. The direction of the response along a continuum was weighted inversely to the correct end of the scale as determined by research into the developmental traits. Thus varying degrees of understanding could be plotted numerically.

A rough draft of the questionnaire was first reviewed and revised by the researcher's doctoral committee. Another revision was done with consultant help from Dr. Arvo E. Juola of the Department of Learning and Evaluation Services at Michigan State University. This copy was then field tested, first by five people who had many years of experience in working with emerging adolescents, and then by a volunteer group of 24 teachers from a well-known middle school. After their input was considered the questionnaire was put into its final form.

The questionnaire employed in this study contains 60 questions, and is divided into four subsections of physical, intellectual, social, and emotional characteristics. Preceding the questionnaire section was a page with directions for completion

of the instrument, and a page devoted to obtaining necessary personal information from the respondents.

Procedures

Principals in each of the selected schools were asked to schedule a faculty meeting. The researcher attended each meeting to explain and administer the questionnaire. All the meetings were scheduled after the regular school day during the month of May, 1976. The total faculty was present in all cases except for the few teachers who were involved in after-school activities or who were absent that day from work. The faculties to whom the instrument was administered represented a cross-section of sex, race, age, teaching style, educational philosophy, and subject area competencies.

The completed questionnaires were hand scored by the researcher. Because each response was weighted inversely, lower scores indicated a better understanding of student growth characteristics. Individual scores on the total instrument and on each of the subtests were keypunched for computer analysis.

In order to obtain the coefficient of reliability, the computer package SPSS was used, and the coefficient alpha computed.

The resulting coefficients were:

0.957 for the total test

0.8166 for subtest I (physical characteristics)

0.8698 for subtest II (intellectual characteristics)

0.8239 for subtest III (social characteristics)

0.8477 for subtest IV (emotional characteristics)

On the basis of these results, it was concluded that the instrument was highly reliable as a whole, and was measuring the same aspects of understanding for all teachers tested. The subtests appear to be less reliable than the total questionnaire, but the number of items in the subtests is approximately one-fourth of the total number of items, and therefore negatively influences the reliability coefficient.

The data for this research project were programmed for computer analysis. The raw scores from the questionnaire forms were keypunched and coded for individual number, total instrument score, subtest scores, personal and school information. The data were then processed by computer at Michigan State University. Statistics were generated by using an analysis of variance statistical technique.

Hypotheses

It was the purpose of this study to compare teachers in several junior highs and middle schools as to their understandings of the growth characteristics of pre- and early adolescents. The variables of school, experience, commitment, and certification were explored as to their effect on the knowledge of physical, intellectual, social, and emotional characteristics.

The first hypothesis was designed to provide a measurement relative to the degree of understanding of developmental characteristics of middle school teachers compared to junior high school teachers.

- H₁: Middle school teachers will have a higher degree of understanding of the physical, intellectual, social and emotional characteristics of pre- and early adolescents than junior high school teachers.

The second hypothesis was designed to compare the degrees of understanding between teachers with more than two years in either the middle school or junior high with those of less than two years of experience.

- H₂: Experienced teachers will have a higher degree of understanding of the physical, intellectual, social, and emotional characteristics of pre- and early adolescents than inexperienced teachers.

The third hypothesis was developed to compare the certification and therefore pre-service training of teachers in several junior highs and middle schools. Teachers with secondary certificates were compared to those who held either K-12 or elementary certificates as to their understanding of pre- and early adolescent developmental characteristics.

- H₃: Non-secondary certified teachers will have a higher degree of understanding of the physical, intellectual, social and emotional growth characteristics of pre- and early adolescents than secondary certified teachers.

The fourth hypothesis was designed to compare those who wanted to teach in either a junior high or middle school with those who expressed a preference for teaching at a different age level, either elementary school or high school.

- H₄: Teachers who choose to work with pre- and early adolescents will have a higher degree of understanding of the physical, intellectual, social and emotional growth characteristics of this age group than those who prefer to work with another age group.

Interaction

Three main factors of school type, teaching certificate, and commitment were analyzed statistically in order to determine possible significance at the .05 alpha level for the effects of the interaction of these variables on the physical, intellectual, social, and emotional characteristics of pre- and early adolescents.

Analysis of Data

Initially, the researcher in discussion with the Office of Research Consultants at Michigan State University assumed that the four-way ANOVA model was the most appropriate for analysis of the four null hypotheses. Once the population data were tabulated, however (Table 3.1), it was obvious that the small number of inexperienced teachers in the junior highs and middle schools tested made the classification by experience a rather risky one for statistical analysis. Therefore, an ANOVA model with three factors--schools, certification, and commitment--was used to analyze the data.

It was assumed that both interaction and main effects were possible, and therefore an ANOVA design was judged to be the most powerful for generating statistics.

Summary

Theoretically, emerging middle schools are developed on the basis of meeting the needs of the students served. Therefore

an understanding of the developmental characteristics of students should be present among the teachers working in our middle schools.

Table 3.1.--The number of teachers tested by sex, experience, certification, and commitment.

	Type of School	
	Middle School	Junior High
Males	38	40
Females	47	36
Less than two years experience	10	8
More than two years experience	75	68
Secondary certified	47	50
Other certified	38	26
Committed (desire to teach pre-adolescents)	69	46
Non-committed (desire not to teach pre-adolescents)	16	30

In this study, teachers in selected junior highs and middle schools were tested as to their understanding of the physical, intellectual, social, and emotional growth characteristics of pre- and early adolescents.

The data-gathering instrument was developed by the researcher, and was administered to 161 teachers in the spring of 1976. It contains 60 questions relative to the growth characteristics of pre- and early adolescents. Personal data were also

gathered so that comparisons could be made in the areas of experience, commitment, and certification as well as comparisons between schools.

The statistical model of a three-way analysis of variance was used to test the hypotheses. The data were processed by the computer at Michigan State University.

CHAPTER IV

ANALYSIS OF THE DATA

Introduction

An analysis of the data and the findings resulting from this analysis are presented in this chapter. The four hypotheses, which examine comparisons between middle school and junior high teachers, experienced and inexperienced teachers, secondary certified and non-secondary certified teachers, and committed and non-committed teachers, are stated. The data for each of the dependent variables of physical, intellectual, social, and emotional developmental characteristics of pre- and early adolescent children are presented for each of the four hypotheses. The data of the interaction effects among the independent variables of school type, certification, and commitment are discussed.

The data presented in this chapter were collected by survey questionnaires developed by the researcher and administered to 161 teachers in 6 middle schools and junior high schools in Michigan during the spring of 1976. The questionnaire assessed the understandings of the sample population toward pre- and early adolescent physical, intellectual, social, and emotional developmental characteristics. The data were processed by computer at Michigan State University.

Procedure

An analysis of variance was performed on the teacher questionnaires using the four subtotal scores for each individual as the dependent variables. The four subtotal scores on physical, intellectual, social, and emotional dimensions of the questionnaire were believed to be more representative of the situation than the one total score on each of the individual questionnaires. Therefore, individual teacher scores on each of the four subtests were analyzed because they represent different areas of understanding. Also, the correlation for the total sample ($n = 161$) was projected in order to determine correlations among the four subscores. The correlation matrix is presented in Appendix D.

The alpha level of .05 was used to determine significance. Research hypotheses were either accepted or rejected based upon the significance projected by the analysis of variance procedure.

The analysis of data from the survey of teacher understandings of pre- and early adolescent growth characteristics will be presented as follows:

1. Mean scores for the total sample and for each of the four subtests of physical, intellectual, social, and emotional developmental characteristics will be presented and discussed.
2. Each hypothesis for each teacher comparison on the four growth characteristics will be presented in the same order as in Chapter I.

3. The statistical findings will be stated for each hypothesis along with appropriate data tables.
4. The .05 level of confidence will be used to accept or reject each research hypothesis.
5. A discussion of the findings for each research hypothesis will follow the presentation of the data.
6. Significant interaction effects will be presented and discussed along with appropriate data tables.

Presentation of Data

Mean scores for each of the eight teacher categories of middle school/junior high school, experienced/inexperienced, secondary certified/non-secondary certified, and committed/non-committed are presented in Table 4.1. These means were determined by adding the scores on each individual questionnaire and dividing by the number of teachers responding in each of the eight categories. Teachers were placed in categories based upon their response to the personal data form which accompanied the questionnaire (Appendix B). Lower mean scores indicate a higher degree of understanding because favorable responses on the continuum were given lower numbers.

Table 4.1.--Mean scores for the total sample by teacher category.

Teacher Category	N	Total Score	Mean
Junior high	76	11166	146.921
Middle school	85	12263	144.270
Experienced	143	20800	145.455
Inexperienced	18	2629	146.056
Secondary certified	91	13232	145.407
Non-secondary certified	70	10197	145.672
Committed	113	16359	144.770
Non-committed	48	7073	147.354

Discussion: Except for the comparison between secondary certified and non-secondary certified which slightly favors secondary, the mean scores in each of the other three comparisons favor the middle school teachers, experienced teachers, and committed teachers--the research hypotheses of this study.

The teacher responses are presented as mean scores in Table 4.2 for each of the four major comparisons of junior high/middle school, experienced/inexperienced, secondary certified/non-secondary certified, and committed/non-committed. Within each comparison category, the mean scores of each of the four subtests will be examined as to their statistical significance. Lower scores indicate a higher degree of understanding of the developmental characteristics.

Table 4.2.--Mean scores for the four subtests of physical, intellectual, social, and emotional developmental characteristics.

Teacher Category	N	Physical Characteristics	Intellectual Characteristics	Social Characteristics	Emotional Characteristics
Junior high	76	27.83	47.04	34.53	37.62
Middle school	85	28.24	46.00	34.14	35.89
Inexperienced	18	27.53	48.47	34.65	35.53
Experienced	143	28.10	46.26	34.28	36.85
Non-secondary certified	64	28.41	46.61	34.02	36.67
Secondary certified	97	27.80	46.41	34.53	36.73
Non-committed	46	27.98	48.02	34.83	37.39
Committed	115	28.07	45.88	34.12	36.43

Discussion: When the mean scores are presented by developmental categories, comparisons between the teacher groups are not consistent. For example, junior high school teachers have a better understanding of the physical characteristics of pre- and early adolescents than middle school teachers, while middle school teachers better understand intellectual, social, and emotional characteristics. In the following section these data are statistically analyzed and the implications for this study are discussed.

Hypothesis 1

Middle school teachers will have a higher degree of understanding of the physical, intellectual, social and emotional characteristics of pre- and early adolescents than junior high teachers.

Table 4.3.--Analysis of variance of mean scores of middle school teachers and junior high teachers on the developmental characteristics of pre- and early adolescents.

Source of Variation	Mean Square	df	F	p
Physical characteristics	6.6252	1	.4834	.4880
Intellectual characteristics	43.3544	1	1.9895	.1605
Social characteristics	5.9517	1	.3067	.5805
Emotional characteristics	119.2982	1	5.1382	.0249*

*Significant at the .05 level.

Findings: There is a significant difference between middle school and junior high school teachers as to their understanding of the emotional characteristics of pre- and early adolescents. However, there is no significant difference on the other three variables.

The research hypothesis that middle school teachers understand emotional characteristics of pre- and early adolescents is accepted at the .05 level of confidence.

The hypothesis is rejected for differences in understanding the physical, intellectual, and social characteristics of pre- and early adolescents between middle school and junior high school teachers.

Hypothesis 2

Experienced teachers will have a higher degree of understanding of the physical, intellectual, social and emotional characteristics of pre- and early adolescents than inexperienced teachers.

Analysis of variance was used to evaluate this research hypothesis. The results are reported in Table 4.4.

Table 4.4.--Analysis of variance of mean scores of experienced teachers and inexperienced teachers on the developmental characteristics of pre- and early adolescent children.

Source of Variation	Mean Square	df	F	p
Physical characteristics	5.5255	1	.3949	.5307
Intellectual characteristics	79.4355	1	3.6234	.0589
Social characteristics	2.2965	1	.1147	.7353
Emotional characteristics	21.9910	1	.9163	.3400

Findings: There is no significant difference between experienced and inexperienced teachers as to their understanding of the developmental characteristics of pre- and early adolescents.

Therefore, the research hypothesis that experienced teachers have a better understanding of the growth characteristics of pre- and early adolescent children is rejected for the four developmental categories of physical, intellectual, social, and emotional characteristics.

Hypothesis 3

Non-secondary certified teachers will have a higher degree of understanding of the physical, intellectual, social, and emotional growth characteristics of pre- and early adolescents than secondary certified teachers.

The analysis of variance technique was used to evaluate this research hypothesis. The results are reported in Table 4.5.

Table 4.5.--Analysis of variance of mean scores of secondary certified teachers and non-secondary certified teachers on the developmental characteristics of pre- and early adolescent children.

Source of Variation	Mean Square	df	F	p
Physical characteristics	12.1341	1	.8853	.3483
Intellectual characteristics	3.7613	1	.1726	.6784
Social characteristics	8.5464	1	.4404	.5080
Emotional characteristics	.6414	1	.0276	.8683

Findings: There is no significant difference between secondary certified and non-secondary certified teachers as to their understanding of the developmental characteristics of pre- and early adolescents.

Therefore, the research hypothesis that non-secondary certified teachers have a better understanding of the growth characteristics of pre- and early adolescent children is rejected for all developmental categories.

Hypothesis 4

Teachers who choose to work with pre- and early adolescents will have a higher degree of understanding of the physical, intellectual, social and emotional growth characteristics of this age group than those who prefer to work with another age group.

Analysis of variance was used to evaluate this research hypothesis. The results are reported in Table 4.6.

Table 4.6.--Analysis of variance of mean scores of committed teachers and non-committed teachers on the physical, intellectual, social, and emotional developmental characteristics of pre- and early adolescent children.

Source of Variation	Mean Square	df	F	p
Physical characteristics	.0116	1	.0008	.9769
Intellectual characteristics	123.2233	1	5.6546	.0187*
Social characteristics	12.5314	1	.6457	.4229
Emotional characteristics	9.4948	1	.4089	.5235

*Significant at the .05 level.

Findings: There is a significant difference between teachers who choose to work with emerging adolescent children and those who don't as to their understanding of the intellectual characteristics of these children. However, there are no significant differences on the variables of physical, social, and emotional characteristics.

The hypothesis that committed teachers have a higher degree of understanding of the intellectual characteristics of pre- and early adolescents is accepted at the .05 level of confidence.

The research hypothesis is rejected for differences in the understanding of physical, social, and emotional characteristics between committed and non-committed teachers.

Interaction Effects

A report of the results of this study should include an examination of possible interaction effects. Three main factors of school type, teaching certificate, and commitment were analyzed statistically in order to determine possible significance at the .05 level of confidence of the effects of these variables on each other. The fourth variable, that of experience, was not included in the interaction analysis because the small sample size of inexperienced teachers did not lend itself to reliable statistical analysis.

Mean scores of interaction effects were analyzed by computer for each of the four developmental categories of physical, intellectual, social, and emotional characteristics. The interaction means are listed in Table 4.7.

Data on School Type and Teaching Certificate

The mean scores of the variables of school type and teaching certificate were subjected to the analysis of variance procedure in order to analyze interaction effects on the four dependent

Table 4.7.--Mean scores of interaction effects for physical, intellectual, social, and emotional developmental categories.

Interaction Effects	N	Physical Characteristics	Intellectual Characteristics	Social Characteristics	Emotional Characteristics
Junior high & non-secondary certificate	26	27.65	47.46	33.04	36.46
Junior high & secondary certificate	50	27.92	46.82	35.30	38.22
Middle school & non-secondary certificate	38	28.92	46.03	34.68	36.82
Middle school & secondary certificate	47	27.68	45.98	33.70	35.15
Junior high & non-committed	30	27.60	48.03	35.70	37.57
Junior high & committed	46	27.98	46.39	33.76	37.65
Middle school & non-committed	16	28.69	48.00	33.19	37.06
Middle school & committed	69	28.13	45.54	34.36	35.62
Non-secondary certificate & non-committed	17	27.24	47.12	33.29	35.41
Non-secondary & committed	47	28.83	46.43	34.28	37.13
Secondary certified & non-committed	29	28.41	48.55	35.72	38.55
Secondary certified & committed	68	27.54	45.50	34.01	35.96

variables of developmental characteristics. The results are reported in Table 4.8.

Table 4.8.--Analysis of variance of mean scores of school type and teaching certificate.

Source of Variation	Mean Square	df	F	p
Physical characteristics	21.5121	1	1.5695	.21222
Intellectual characteristics	1.5063	1	.0691	.79300
Social characteristics	103.3423	1	5.3251	.0224*
Emotional characteristics	114.4841	1	4.9308	.0279*

*Significant at the .05 level.

Findings: An analysis of the interaction between school type and teaching certificate was found to be significant at the .05 confidence level for social and emotional developmental characteristics. However, the interaction effects are disordinal. This means that among the teachers holding non-secondary certificates, those in the junior high schools demonstrated a higher degree of understanding of the social and emotional characteristics of pre- and early adolescents than those non-secondary certified teachers teaching in the middle schools.

On the other hand, among teachers holding secondary certificates, those teaching in the middle schools demonstrated a higher

degree of understanding of the social and emotional characteristics than those teaching in the junior high schools.

There were no significant interaction effects between school type and teaching certificate for physical and intellectual developmental characteristics.

Data on School Type and Commitment

The mean scores of the variables of school type and commitment were subjected to the analysis of variance procedure in order to determine significance at the .05 level of confidence for each of the four developmental categories. The results are reported in Table 4.9.

Table 4.9.--Analysis of variance of mean scores of school type and commitment.

Source of Variation	Mean Square	df	F	p
Physical characteristics	8.1375	1	.5937	.4422
Intellectual characteristics	5.5965	1	.2568	.6131
Social characteristics	73.7958	1	3.8026	.0531
Emotional characteristics	19.5385	1	.8415	.3605

Findings: The interaction effects between school type and commitment were not statistically significant for any of the four

developmental categories of physical, intellectual, social, and emotional characteristics.

Data on Teaching Certificate and Commitment

The mean scores of the variables teaching certificate and commitment were subjected to the analysis of variance procedures in order to analyze interaction effects on the four dependent variables of developmental characteristics. The results are reported in Table 4.10.

Table 4.10.--Analysis of variance of mean scores of teaching certificate and teacher commitment.

Source of Variation	Mean Square	df	F	p
Physical characteristics	34.5321	1	2.5194	.1145
Intellectual characteristics	55.7590	1	2.5587	.1118
Social characteristics	23.1677	1	1.1938	.2763
Emotional characteristics	108.4031	1	4.6689	.0323*

*Significant at the .05 level.

Findings: The interaction between teaching certificate and commitment is significant at the .05 level of confidence for emotional developmental characteristics. However, the interaction is disordinal. This means that among the non-committed teachers those holding non-secondary certificates demonstrated a higher

degree of understanding of the emotional characteristics of pre- and early adolescents than those having secondary teaching certificates.

Among the teachers who chose to work with students aged 10 to 14, the trend was reversed. Those holding secondary certificates demonstrated a higher degree of understanding of emotional characteristics than those who held certificates other than secondary.

There was no significant interaction effect between teaching certificate and commitment on the physical, intellectual, and social developmental characteristics.

Summary

In this study four research hypotheses were developed for the purpose of statistically comparing various categories of teachers as to their understandings of the physical, intellectual, social, and emotional characteristics of pre- and early adolescents.

A questionnaire was developed which measured the degrees of teacher understanding of growth characteristics. The instrument was administered to 161 junior high and middle school teachers. Mean scores on each of the four developmental factors were analyzed by using analysis of variance statistical procedures.

The four research hypothesis which compared teacher understandings are summarized as follows:

- H₁: Middle school teachers will demonstrate a higher degree of understanding of pre- and early adolescent developmental characteristics than junior high teachers.

The results of the analysis of mean scores for the first hypothesis which compared the understandings of teachers in the junior high with those in the middle school on the four developmental categories showed significance in favor of middle school teachers on student emotional characteristics at the .05 level of confidence.

- H₂: Teachers with more than two years experience will demonstrate a higher degree of understanding of pre- and early adolescent developmental characteristics than teachers with less than two years teaching experience.

The second hypothesis analyzed mean scores between experienced teachers and non-experienced teachers on each of four developmental factors--physical, intellectual, social, and emotional. No significant results were found.

- H₃: Teachers who hold certificates other than a secondary certificate will demonstrate a higher degree of understanding of pre- and early adolescent developmental characteristics than teachers with secondary certificates.

The understandings of teachers who held secondary teaching certificates were compared with those who held other types of certificates--elementary, K-12, or special education--in the third hypothesis. Again, no significant differences were found between the two groups on any of the four developmental categories.

- H₄: Teachers who choose to work with pre- and early adolescents will demonstrate a higher degree of understanding of their developmental characteristics than teachers who would rather work with another age group.

The fourth research hypothesis analyzed mean scores between the understandings of teachers who chose to work with pre- and early adolescents with those who preferred working with another age group. Significance at the .05 level was found on the

developmental category of intellectual characteristics only. No significant differences were found on the variables of physical, social, or emotional characteristics.

Therefore, the understanding of pre- and early adolescent growth characteristics was compared between four categories of teachers on each of four developmental variables. Out of the 16 comparisons analyzed, two were found to be significant.

The interaction of the independent variables of school type, teaching certificate, and commitment were also statistically analyzed for each developmental category. Significance at the .05 level was found on the variables of emotional and social characteristics when the interaction of school type and teaching certificate was subjected to analysis of variance. Significance was also found on the variable of emotional characteristics when the interaction of teaching certificate and commitment was analyzed statistically.

The contents of Table 4.11 represent a summary of the significant findings on the major comparisons and interaction effects.

Table 4.11.--Summary of significant F ratios for main comparisons and interaction effects by developmental category.

Comparison/Interaction	F	p	Sig.
1. Middle school/junior high			
physical	.4834	.4880	No
intellectual	1.9895	.1605	No
social	.3067	.5805	No
emotional	5.1382	.0249	Yes
2. Experienced/inexperienced			
physical	.3949	.5307	No
intellectual	3.6234	.0589	No
social	.1147	.7353	No
emotional	.9163	.3400	No
3. Non-secondary/secondary			
physical	.8853	.3483	No
intellectual	.1726	.6784	No
social	.4404	.5080	No
emotional	.0276	.8603	No
4. Committed/non-committed			
physical	.0008	.9769	No
intellectual	5.6546	.0187	Yes
social	.6457	.4229	No
emotional	.4089	.5235	No
5. School type and teaching certificate			
physical	1.5695	.2122	No
intellectual	.0691	.7930	No
social	5.3251	.0224	Yes
emotional	4.9308	.0279	Yes
6. School type and commitment			
physical	.5937	.4422	No
intellectual	.2568	.6131	No
social	3.8026	.0531	No
emotional	.8415	.3605	No
7. Commitment and certificate			
physical	2.5194	.1145	No
intellectual	2.4487	.1118	No
social	1.1938	.2763	No
emotional	4.6689	.0323	Yes

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

One of the most significant changes in education in many years is now taking place throughout the United States. This change can be defined as a movement away from the 7-9 junior high school organization to a grade 5-8 or 6-8 middle school. It can also be defined as a rededication of educational philosophy and program to the principles upon which our junior high schools were founded some 60 years ago. Regardless of the definition, the movement, according to recent surveys, is assuming "bandwagon" proportions.

There are basically two causes for concern about the movement among middle school advocates. First, research indicates that many districts are implementing middle school programs for the wrong reasons. Instead of being founded on the sound rationale of providing a better educational program for 10 to 14 year olds, districts are changing over for mechanical reasons, such as better utilization of building space or court-ordered busing. Another cause of concern is that frequently theory is being put into practice without an adequate amount of research taking place. This study attempts to address the second of these concerns.

Without exception, leading middle school writers define a good middle school as having a program which meets the physical, intellectual, social, and emotional needs of the students served. From this theoretical base, the practitioners then take over and begin to implement individualized instruction, team teaching, flexible scheduling, and the many other middle school "innovations" which purport to meet the needs of the students. Too often, however, the needs of the teacher, the key figure in implementing a program which really does meet the needs of students, are neglected.

Research done by Krinsky and Pumerantz indicates a surprising lack of training programs for teachers of our pre- and early adolescent children. Therefore teachers in our junior highs and middle schools sadly lack a good background in a knowledge of the developmental characteristics of pre- and early adolescents.¹ Without this knowledge on the part of teachers, educational change based upon student needs will be difficult if not impossible to achieve.

This study was designed to assess the amount of understanding that teachers, presently working in our junior high schools and middle schools, have about the developmental characteristics of pre- and early adolescents. If middle schools seek to meet the needs of the students they serve, then teachers should have some knowledge of their students' developmental patterns.

A questionnaire was developed which assessed teacher understandings of pre- and early adolescent physical, intellectual,

¹Krinsky and Pumerantz, op. cit., p. 468.

social, and emotional developmental characteristics. The instrument was administered to 161 middle school and junior high school teachers during the spring of 1976.

In order to gain some insight into middle school theory versus practice, comparisons of mean scores were made between those teaching in junior high schools and those teaching in middle schools. Some degree of understanding of student developmental characteristics was assumed, and it was important to determine how this understanding was acquired. Therefore three other comparisons were made. Experienced teachers were compared with inexperienced; secondary certified teachers were compared with those who were not secondary certified; and teachers who desired to work with pre- and early adolescents were compared to those who preferred working with another age group.

Procedure

Mean scores were obtained for each teacher group on each subscale of student characteristics: physical, intellectual, social, and emotional. Analysis of variance statistical procedures were then used to test the four hypotheses. The alpha level for determining significance was set at .05. The data were processed by computer at Michigan State University. Based upon the data, the alternate hypotheses were either accepted or rejected. Interaction effects among the independent variables of school type, certification, and commitment were also examined as to their statistical significance and their implications for this study.

Findings

Four research hypotheses were tested. The significant findings of each are presented.

- H₁: Middle school teachers will have a higher degree of understanding of the physical, intellectual, social and emotional characteristics of pre- and early adolescents than junior high school teachers.

The mean scores of 76 junior high school teachers were compared to the mean scores of 85 middle school teachers on each of the four developmental categories. There was no significance between the two groups at the .05 level of confidence on the factors of physical, intellectual, or social characteristics. However, middle school teachers had a higher degree of understanding of the pre- and early adolescent's emotional characteristics than did junior high school teachers.

- H₂: Experienced teachers will have a higher degree of understanding of the physical, intellectual, social, and emotional characteristics of pre- and early adolescents than inexperienced teachers.

The mean scores of 143 experienced teachers were compared to the mean scores of 18 inexperienced teachers. There were no significant differences between these two groups on any of the four developmental categories of physical, intellectual, social, and emotional characteristics. Unfortunately, the small number of inexperienced teachers (those with less than two years experience) was not anticipated prior to gathering data for this research. Therefore the highly unequal cell design for this particular variable makes statistical analysis rather risky.

The rejection of the alternate hypothesis is by no means a conclusive result. In future studies dealing with this teacher characteristic, a sufficient number of inexperienced teachers must be identified prior to making random selections.

- H₃: Non-secondary certified teachers will have a higher degree of understanding of the physical, intellectual, social, and emotional growth characteristics of pre- and early adolescents than secondary certified teachers.

The mean scores of 97 secondary teachers were compared to the mean scores of 64 teachers who held either elementary, special education, or K-12 special certificates. There were no statistically significant differences between the two groups as to their understanding of the developmental characteristics of pre- and early adolescent children. Therefore the alternate hypothesis was rejected for each of the four dependent variables of physical, intellectual, social, and emotional developmental characteristics.

- H₄: Teachers who choose to work with pre- and early adolescent children will have a higher degree of understanding of their physical, intellectual, social and emotional characteristics than those who prefer to work with another age group.

This research hypothesis compared the mean scores of 115 committed teachers to the mean scores of 46 non-committed teachers working in junior highs and middle schools. Teachers who chose to work with students of this age level had a significantly better understanding of their intellectual characteristics than did those who preferred to work with another age group. No difference was found between the two groups on their understanding of the physical, social, and emotional characteristics.

Findings on Interaction Effects

In addition to the simple effects of the four research hypotheses, significant differences were found when analyzing the interaction between the independent variables of school type, certification, and commitment. The experience variable was not analyzed as to its interaction effects because of the small sample of inexperienced teachers tested.

Teachers in junior high schools with non-secondary certificates demonstrated a higher degree of understanding of the social and emotional characteristics than those with non-secondary certificates teaching in the middle schools. On the other hand, secondary certified middle school teachers scored better than secondary certified junior high teachers on their understanding of the same two developmental characteristics.

Teacher certification also showed significance when statistically analyzed with commitment. Among teachers who chose to work with this age group, those holding secondary certificates understood the emotional characteristics of pre- and early adolescents better than teachers with non-secondary certificates. While among non-committed teachers, those who were certified other than secondary understood emotional characteristics better than those who were secondary certified.

Conclusions

The initial concern of this study was to compare various groups of teachers as to their understandings of the developmental

characteristics of pre- and early adolescent students. While the results of this study are by no means conclusive, an analysis of data does seem to project a slightly favorable trend toward middle schools and toward teachers who choose to work with 10 to 14 year old students. No significant differences were found when the independent variables of experience and teaching certificate were analyzed.

Mean scores for the entire sample of teachers in each category seem to indicate a trend in favor of the hypotheses tested except in the category of teacher certification (Table 4.1), even though these trends did not prove to be significant at the .05 level of confidence. Perhaps further research done with a larger population sample would prove to be more conclusive.

In this section the four variables of school type, experience, commitment, and certification will be analyzed and discussed.

Middle school teachers scored significantly better than junior high school teachers on an understanding of the emotional characteristics of pre- and early adolescents. It is impossible to state emphatically why significance occurred only on the emotional factor and not on the others. Perhaps significance occurred because middle school teachers, according to advocates, tend to be more student oriented rather than subject oriented. Therefore they become more involved in trying to deal with their students' emotional problems. This assumption obviously merits further investigation.

No significance occurred between middle school and junior high teachers when the mean scores of the other factors of physical, intellectual, and social characteristics were analyzed. However, to conclude that such findings negate the theory that teachers in our middle schools better understand the developmental patterns of pre- and early adolescents would reach beyond the data presented in this study. Much more research is needed before drawing such conclusions.

No significant differences were reported on any of the four developmental categories of physical, intellectual, social, and emotional, when teacher experience data were analyzed. Perhaps this was a result of the unanticipated small sample size among inexperienced teachers tested. Because of this fact, no conclusions should be drawn on the basis of the data collected.

Teachers who indicated a preference for working with students aged 10 to 14 understand pre- and early adolescent intellectual characteristics better than teachers who expressed a preference for working with another age group. More investigation into this finding is necessary before any definite conclusions can be stated. Because most of the non-committed teachers expressed a preference for teaching in the high school, it is conceivable that their understandings of intellectual or cognitive characteristics are geared more toward older students. This could be partially responsible for the claim of middle school advocates that junior high school teachers are more subject centered than child centered.

A lack of significance on the other three dependent variables leads to the conclusion that commitment has no bearing on understanding the physical, emotional, and social characteristics. It is therefore conceivable that these understandings are learned through on-the-job observation regardless of teacher attitudes toward working with students of this particular age group.

Because there was no significant interaction when school type and commitment were analyzed for their effects on each other, we can assume that the significant simple effects are peculiar to these variables.

In this study all of the significant interaction effects involved the variable of teacher certification, and because the interaction effects in both instances (certification and school type and certification and commitment) are disordinal, it is difficult to make conclusions based upon these findings. However, certain assumptions in line with middle school theory can be drawn from these data.

As was previously noted, the junior high schools used for the gathering of data had a definite lack of so-called middle school practices. The significance of the non-secondary certified teachers in the junior highs demonstrating a better understanding of these social and emotional characteristics than their middle school counterparts indicates an attempt on the part of these people to become more involved with the more affective dimensions of student behavior than the traditional program would dictate. They could be operating more in line with their non-subject-centered

training. Similar assumptions could be made based upon the findings that secondary middle school teachers have a better understanding than secondary junior high teachers of emotional and social development. The traditional subject-centered approach among many secondary certified teachers is tempered somewhat by the individualized approach to student learning found in most middle schools. The middle school approach therefore would force many middle school teachers into a teaching/learning situation whereby knowledge of student social and emotional characteristics becomes essential.

Assumptions can also be made regarding the significant interaction effects between certification and commitment. Secondary certified committed teachers demonstrated a higher degree of understanding of emotional characteristics. The fact that secondary certified teachers were working with this age group by choice indicates a concern for them and a desire to become involved with all aspects of a child's learning environment. Non-committed secondary teachers did not demonstrate the same degree of understanding.

A conclusion in line with middle school student centeredness can also be made when analyzing the data which show significance in favor of non-committed non-secondary certified teachers on emotional characteristics. The fact that they prefer to work with another age group does not necessarily negate their ability to understand pre- and early adolescents, because this could be

offset by their certification which is indicative of training in areas other than straight academic subject matter.

The fact that all the significant interaction effects were found on both the social and emotional developmental characteristics indicates that the more affective dimensions of student growth and development are the most difficult for certain groups of teachers to understand.

There are some indications that many teachers committed to working with this age group, and those who teach in the middle schools, understand their students better. However, the results are not conclusive enough to be considered as factors in middle school implementation. In addition, the use of the information presented in this study should be limited. Decisions regarding teacher training and placement, for example, should not be made based upon these data without further investigation.

Recommendations for Further Study

Middle school advocates point to an understanding of pre- and early adolescent developmental characteristics as being an important competency for teachers of this age group. The fact that this study did not conclusively demonstrate that this competency is present among certain teacher groups to a higher degree than in others does not diminish the importance of knowing as much about youngsters' growth as possible. Further investigation into teacher competencies in this area is recommended.

The factor of experience as it relates to understanding the characteristics of students merits more investigation, because it has definite implications for teacher training.

Literature indicates little concern among teacher training institutions for teaching developmental characteristics of students. A survey to determine the amount of exposure that prospective teachers receive in the area of child growth and development would merit further study.

Given the rapid nationwide transition from junior high to middle schools, research into the competencies of teachers who make the transition might turn up a knowledge of student growth and development factors among those who make the transition smoothly.

Finally, further research is definitely needed into whether a knowledge of pre- and early adolescent growth and development makes any difference in meeting the educational needs of students. Thus far it is only an assumption.

Reflections

This has been a meaningful experience in research as well as a valuable insight into the developmental characteristics of our pre- and early adolescents. This researcher had much to learn about these young people despite many years working with students of this age group. This study has only led to more concern that widely divergent learning styles and unique personalities are directly related to the physical, intellectual, social, and

emotional growth characteristics of these children. It is also more apparent than ever that a thorough understanding of these developmental traits is essential if one is going to teach these children. They deserve understanding. They deserve good teachers.

APPENDICES

APPENDIX A

**DIRECTIONS FOR COMPLETING THE PERSONAL DATA FORM
AND FOR ADMINISTERING THE TEACHER QUESTIONNAIRE**

APPENDIX A

DIRECTIONS FOR COMPLETING THE PERSONAL DATA FORM AND FOR ADMINISTERING THE TEACHER QUESTIONNAIRE

You have been selected to participate in this study authorized by Michigan State University. The questionnaire is designed to find out how much teachers are aware of the developmental characteristics of emerging adolescents in our junior highs and middle schools, and will have implications for the pre- and in-service training of teachers.

Part A of the questionnaire asks for your response to some personal questions. Please answer by putting an (X) in the appropriate box. We are not interested in knowing who you are so DO NOT SIGN YOUR NAME.

Part B of the questionnaire lists 60 physical, emotional, social, and intellectual characteristics. They may or may not be developmental characteristics of early adolescents, so read each question carefully and thoughtfully. Notice that your responses will be recorded along a continuum, because we are interested in determining varying degrees of understanding of the characteristics. In other words, being close counts in this study.

PLEASE CIRCLE THE NUMBER that best indicates your understanding of the particular characteristic in question. The results depend on your serious approach to this task so please be careful. Your responses should be based upon your awareness of the developmental characteristics of the TYPICAL early adolescent, who is defined as being between the ages of 10 and 14.

APPENDIX B

PERSONAL DATA FORM

APPENDIX B

PERSONAL DATA FORM

PART A Personal Information

1. Are you?

Female
Male

2. How much teaching experience do you have?

Less than two years
More than two years

3. What type of teaching certificate do you hold?

Elementary (permanent or provisional)
Secondary (permanent or provisional)
Other (K-12, special, etc.)

4. If you could pick the level at which you most wanted to teach, what level would you choose?

Elementary school
Middle school (5-8/6-8)
Junior high (7-9)
High school

5. What is your present position?

Physical education teacher
Arts and crafts teacher (includes home ec., woods, metals, art, etc.)
Academic teacher (social studies, math, English, science, language, etc.)
Music teacher
Counselor
Special ed. teacher
Other

APPENDIX C

TEACHER QUESTIONNAIRE

APPENDIX C

TEACHER QUESTIONNAIRE

Physical Characteristics

1. Prior to puberty, what happens to the growth of the early adolescent?

it rapidly accelerates	slowly accelerates	it decelerates		
1	2	3	4	5
2. To what degree are early adolescents calm and unexcitable?

to a considerable degree	somewhat	to a small degree		
1	2	3	4	5
3. To what degree does poor posture and awkwardness become evident during this period?

very evident	somewhat evident	not evident		
1	2	3	4	5
4. To what degree do boys and girls have the same endurance during this period?

boys have more endurance	boys and girls have about the same endurance	girls have more endurance		
1	2	3	4	5
5. How much physical change will occur in an individual during the transition between childhood and adolescence?

more than other periods in his life	about the same as other periods	less than other periods		
1	2	3	4	5
6. To what degree do bones grow faster than muscles during this period?

much faster	somewhat faster	no faster		
1	2	3	4	5

7. To what extent does the change in thymus and thyroid influence energy production?

large extent		some extent		no extent
1	2	3	4	5

8. To what extent does the pituitary gland influence the growth rate of early adolescents?

large influence		some influence		no influence
1	2	3	4	5

9. How do boys and girls compare in rate of growth during this period?

boys more rapidly	boys and girls the same	girls more rapidly		
1	2	3	4	5

10. To what degree are vision and hearing altered by the changes in the development of the child during this period?

high degree		to some degree		low degree
1	2	3	4	5

11. How physically coordinated are early adolescents compared to most other growth periods?

very coordinated		somewhat coordinated		poorly coordinated
1	2	3	4	5

12. To what degree do early adolescents prefer team games to individual games?

most prefer team		some prefer team		few prefer team
1	2	3	4	5

Intellectual Characteristics

1. To what degree does a child's attention span change as he moves through the developmental period of early adolescence?

it increases		stays the same		decreases
1	2	3	4	5

2. To what extent is daydreaming a normal function of the early adolescent?

considerable		some		insignificant
1	2	3	4	5

3. To what extent do you agree with the following statement?
Eleven year olds are in the same phase of intellectual development as fourteen year olds.

I agree very much		I agree somewhat		I don't agree
1	2	3	4	5

4. To what extent do early adolescents need individual learning activities?

frequently		sometimes		rarely
1	2	3	4	5

5. To what extent can early adolescents test hypotheses as a function of intellectual development?

most can		some can		few can
1	2	3	4	5

6. To what extent do you agree with the following statement?
Early adolescents desire to achieve in school.

much		some		little
1	2	3	4	5

7. To what degree do boys and girls have the same capacity for concentration during this growth period?

boys have a higher capacity		boys and girls are about the same		girls have a higher capacity
1	2	3	4	5

8. To what extent are early adolescents into the period of concrete intellectual operations?

most are		some are		few are
1	2	3	4	5

9. To what extent do early adolescents plan for the future?

frequently		some		rarely
1	2	3	4	5

10. To what degree is the following statement typical of the youngsters you serve? Early adolescents are unable to deal with the real and the possible.

very typical		somewhat typical		not typical
1	2	3	4	5

11. How does the early adolescent attitude change toward homework as he develops through this period?

it becomes more positive		stays the same		becomes more negative
1	2	3	4	5

12. What happens to the gap between the good achiever and the poor achiever during early adolescence?

it narrows very much		it remains about the same		it widens very much
1	2	3	4	5

13. How important is chronological age in planning learning programs for this age group?

very important		somewhat important		not important
1	2	3	4	5

14. How typical is the characteristic of curiosity to an early adolescent?

very typical		somewhat typical		not typical
1	2	3	4	5

15. How much responsibility can early adolescents be given for planning and evaluating their own work?

very much		some		very little
1	2	3	4	5

16. To what extent do you agree with the following statement?
Early adolescents need security on one hand and freedom on the other.

strongly agree		somewhat agree		strongly disagree
1	2	3	4	5

17. To what extent can most early adolescents memorize a multitude of facts?

to a great extent		to some extent		to a small extent
1	2	3	4	5

18. What degree of difficulty do early adolescents encounter in doing problem-solving activities?

great difficulty		some difficulty		little difficulty
1	2	3	4	5

Social Characteristics

1. To what degree are early adolescents concerned about their relationships with their peers?

very concerned		somewhat concerned		seldom concerned
1	2	3	4	5

2. To what extent do early adolescents reject conforming to peer group norms?

frequently		some		seldom
1	2	3	4	5

3. How much imitation of adults is done by early adolescents in order to achieve adult status?

much		some		little
1	2	3	4	5

4. To what degree do early adolescents participate in group activities?

more than in later elementary		same as in later elementary		less than in later elementary
1	2	3	4	5

5. How well do early adolescents get along with adults?

many have good relationships		some have good relationships		few have good relationships
1	2	3	4	5

6. To what extent do you agree with the following statement?
Social isolation results from an inability on the part of these children to solve personality problems.

agree		somewhat agree		disagree
1	2	3	4	5

7. To what extent do boys and girls differ in their desire for association with the opposite sex during this period?

girls desire associations more than boys		both sexes about the same		boys desire associations more than girls
1	2	3	4	5

8. To what extent is "liking to do things for others" a characteristic of this age group?

considerable		somewhat		little
1	2	3	4	5

9. How many early adolescents develop codes of acceptable behavior that are in direct conflict with adult codes?

many		some		few
1	2	3	4	5

10. To what degree is the need to be recognized a characteristic of this age group?

strong need		sometimes needed		seldom needed
1	2	3	4	5

11. To what extent does the early adolescent desire to be alone?

often		sometimes		seldom
1	2	3	4	5

12. Compared to his peer group, how much influence does a teacher have on the early adolescent?

much		some		little
1	2	3	4	5

13. To what extent do you agree with the following statement? Social groups tend to more readily accept a boy who participates in girls' games than a girl who participates in boys' games.

strongly agree		agree somewhat		disagree
1	2	3	4	5

14. To what extent is jealousy a characteristic of this age group?

to a great extent		some extent		a small extent
1	2	3	4	5

15. To what degree is hero worship present in early adolescents?

considerable		somewhat		little
1	2	3	4	5

Emotional Characteristics

1. To what degree do early adolescents have trouble controlling their emotions?

frequently have trouble		sometimes have trouble		rarely have trouble
1	2	3	4	5

2. To what extent does a person in this age group change moods?

a great extent		sometimes		to small extent
1	2	3	4	5

3. How would you describe the early adolescent's sense of justice?

strong		varies		weak
1	2	3	4	5

4. As a child grows through this period, what happens to his tendency to express his feelings?

it increases		stays the same		decreases
1	2	3	4	5

5. Compared to other age groups, to what degree do early adolescents show anger?

more often		about the same		less often
1	2	3	4	5

6. To what extent do you agree with the following? Most early adolescents are fearful of the dark.

considerable		somewhat		don't agree
1	2	3	4	5

7. How would you describe the early adolescent's feelings about fairness?

strong		varies		weak
1	2	3	4	5

8. To what extent do you agree with the following? Early adolescents tend to be critical of others but are rarely critical of themselves.

agree		agree somewhat		disagree
1	2	3	4	5

9. To what degree does early adolescent's perceptions of himself change during this period?

considerable		somewhat		little change
1	2	3	4	5

10. To what degree do most early adolescents worry about death?

considerable		somewhat		little
1	2	3	4	5

11. How concerned are early adolescents with what is right and what is wrong?

very much		some		very little
1	2	3	4	5

12. To what extent do you agree with the following statement? The early adolescent "jumps around" between the extremes of sophistication and childishness.

considerably		somewhat		little
1	2	3	4	5

13. How would you describe the personal outlook of early adolescents?

happy and optimistic		varies between extremes		sad and pessimistic
1	2	3	4	5

14. As a child moves through this developmental period, what happens to his tendency to resort to physical violence as a result of anger?

it increases		stays the same		it decreases
1	2	3	4	5

15. To what degree do early adolescents' sense of humor find outlet in practical jokes?

considerable		somewhat		very little
1	2	3	4	5

APPENDIX D

CORRELATION MATRIX

APPENDIX D
CORRELATION MATRIX

Table D1.--Correlation matrix.

Factors	Physical	Intellectual	Social	Emotional
Physical	1.00			
Intellectual	.18	1.00		
Social	.23	.31	1.00	
Emotional	.16	.33	.33	1.00

BIBLIOGRAPHY

BIBLIOGRAPHY

Books

- Adams, James F. Understanding Adolescence. Boston: Allyn and Bacon, Inc., 1969.
- Alexander, William B. et al. The Emergent Middle School. New York: Holt, Rinehart and Winston, Inc., 1968.
- Atkins, Neil P. Education for the Middle School Years: Readings. Glenview, Illinois: Scott Foresman and Company, 1971.
- Bernard, H. W., and Huchins, W. C. Readings in Human Development. Boston: Allyn and Bacon, Inc., 1967.
- Bondi, Joseph. Developing Middle Schools; A Guidebook. New York: MMS Information Corporation, 1972.
- Bossing, Nelson L., and Cramer, Roscoe V. The Junior High School. Boston: Houghton Mifflin Company, 1965.
- Cole, Luella, and Hall, Irma Nelson. Psychology of Adolescence. New York: Holt, Rinehart and Winston, Inc., 1965.
- DeVita, Joseph C.; Pumerantz, Philip; and Wilklow, Leighton B. The Effective Middle School. West Nyack, New York: Parker Publishing Company, Inc., 1970.
- Eichhorn, Donald H. The Middle School. New York: The Center for Applied Research in Education, 1966.
- Gesell, Arnold; Ilg, Francis L.; and Ames, Louise B. Youth: The Years From Ten to Sixteen. New York: Harper and Brothers, 1956.
- Grooms, M. Ann. Perspectives on the Middle School. Columbus, Ohio: Charles E. Merrill Books, Inc., 1967.
- Hansen, John. The Middle School Program. Chicago: Rand McNally and Company, 1971.
- Hertling, James, and Getz, Howard G. Education for the Middle Years: Readings. Glenview, Illinois: Scott, Foresman and Company, 1971.
- Hurlock, Elizabeth B. Adolescent Development. New York: McGraw-Hill Book Company, Inc., 1955.

- Moss, Theodore C. Middle School. Boston: Houghton Mifflin Company, 1969.
- Popper, Samuel H. The American Middle Schools: An Organizational Analysis. Waltham, Massachusetts: Blaisdell Publishing Company, 1967.
- Romano, Louis G.; Georgiady, Nicholas P.; and Heald, James E. The Middle School. Chicago: Nelson Hall Company, 1973.
- Steel, Robert G. D., and Torrie, James H. Principles and Procedures of Statistics. New York: McGraw-Hill Book Company, Inc., 1960.
- Stone, Joseph L. Childhood and Adolescence. New York: Random House, 1957.
- Stradley, William. A Practical Guide for the Middle School. New York: The Center for Applied Research in Education, Inc., 1971.
- Wattenberg, William W. The Adolescent Years. New York: Harcourt, Brace and Company, 1955.

Periodicals

- Alexander, William M. "Middle School Movement." Theory Into Practice 7 (June 1968): 114-17.
- _____. "What Educational Plan for the In-Between-Ager?" NEA Journal 55 (March 1966): 30-32.
- _____, and Kealy, Ronald P. "From Junior High to Middle School." The High School Journal 52 (December 1969): 151-63.
- Batezel, W. G. "Middle School: Philosophy, Program, Organization." The Clearing House 42 (April 1968): 487-90.
- Brower, Joan, and Howard, Alvin. "Who Should Teach at Schools for The Middle Years?" The Clearing House 46 (January 1972): 279-83.
- Clark, Sanford. "The Middle School--Specially Trained Teachers Are Vital to Its Success." The Clearing House 46 (December 1971): 218-22.
- Coleman, James S. "Social Change: Impact on the Adolescent." NASSP Bulletin 49 (April 1965): 11-14.
- Compton, Mary. "The Middle School in Theory and in Practice." Educational Digest 34 (April 1969): 22-24.

- Cuff, William. "Middle Schools on the March." NASSP Bulletin 51 (February 1967): 82-86.
- Curtis, Thomas E. "Preparing Teachers for Middle and Junior High Schools." NASSP Bulletin 56 (May 1972): 61-70.
- Dettre, John R. "The Middle School, A Separate and Equal Entity." The Clearing House 48 (September 1973): 19-23.
- Eichhorn, Donald H. "Middle School in the Making." Educational Leadership 31 (December 1973): 195-97.
- Eichorn, Dorothy H. "Variations in Growth Rate." Childhood Education 44 (January 1968): 286-91.
- Gatewood, Thomas E. "What Research Says About the Junior High Versus the Middle School." The North Central Association Quarterly 46 (Fall 1971): 264-76.
- Grooms, M. Ann. "Middle School and Other Innovations." NASSP Bulletin 51 (May 1967): 158-60.
- Havighurst, Robert J. "Do Junior High School Students Grow Up Too Fast?" NASSP Bulletin 47 (April 1963): 151-62.
- _____. "Lost Innocence: Modern Junior High School Youth." NASSP Bulletin 51 (April 1965): 1-4.
- _____. "Middle School Child in Contemporary Society." Theory Into Practice 7 (June 1968): 120-22.
- Howell, C. E. "Junior High: How Valid Are Its Original Aims?" Clearing House 23 (October 1948): 75-78.
- Hubert, Jeanne B. "On Preparing Teachers for the Junior High and Middle School: The Teacher Input." The Clearing House 47 (May 1973): 550-54.
- Kagan, Jerome. "A Conception of Early Adolescence." National Elementary Principal 51 (November 1971): 26-35.
- Krinsky, Judith L., and Pumerantz, Philip. "Middle School Teacher Preparation Programs." The Journal of Teacher Education 23 (Winter 1972): 468-70.
- Lawrence, Gordon. "Measuring Teacher Competencies for the Middle School." National Elementary Principal 51 (November 1971): 60-66.
- Lewis, Gertrude M. "I Am, I Want--I Need. Pre-adolescents Look at Themselves and Their Values." Childhood Education 46 (January 1970): 186-94.

- Lounsbury, John H., and Vars, Gordon F. "The Middle School: Fresh Start or New Delusion?" The National Elementary Principal 51 (November 1971): 12-19.
- Marshall, S. "Middle Schools: They Must Be Staffed by Progressive Primary Teachers." Times Education Supplement 2769 (June 14, 1968): 1976.
- Mead, Margaret. "Early Adolescence in the United States." NASSP Bulletin 49 (April 1965): 5-10.
- Michigan Journal of Secondary Education (Summer 1971).
- National Elementary Principal (November 1971).
- Powell, William W. "Training Teachers for the Junior High and the Middle School." Michigan Journal of Secondary Education 42 (Fall 1967): 22-26.
- Rice, Arthur. "What's Wrong With the Junior High School? Nearly Everything." Nation's Schools 79 (November 1964): 30-33.
- Romano, Louis G. "Is Your Middle School a Middle School?" Michigan School Board Journal 19 (September 1972): 10-12.
- Rottier, Jerry. "Preparing Teachers to Make a Difference--for Transescents." Middle School Journal 7 (March 1976): 12-13.
- Schmuck, Richard. "Concerns of Contemporary Adolescents." NASSP Bulletin 47 (April 1965): 18-21.
- Schoo, Philip H. "Optimum Setting for the Early Adolescent: Junior High or Middle School?" North Central Association Quarterly 48 (Spring 1974): 340-49.
- Southworth, H. C. "Teacher Education for the Middle School: A Framework." Theory Into Practice 7 (January 1968): 123-28.
- Stucrwich, Harlan. "Dropout: Early Adolescent Education." The Clearing House 42 (December 1968): 216-19.
- Thornburg, Herschel. "Learning and Maturation in Middle School Age Youth." The Clearing House 45 (November 1970): 150-55.
- Trump, J. Lloyd. "Junior High Versus Middle School." NASSP Bulletin 51 (February 1967): 71-73.
- Vars, Gordon F. "Junior High or Middle School? Which Is Best for the Education of Young Adolescents?" The High School Journal 49 (December 1966): 109-13.

Walker, G. H., Jr., and Gatewood, Thomas E. "The Status of Middle Schools in Michigan." Michigan Journal of Secondary Education (Summer 1972): 11-15.

Wiles, Jon, and Thomason, Julia. "Middle School Research 1968-1974: A Review of Substantial Studies." Educational Leadership 32 (March 1975): 421-23.

Williams, Emmett L. "The Middle School Movement." Today's Education 57 (December 1968): 41-42.

Booklets

Doob, Heather S. Summary of Research on Middle Schools. Carlington, Virginia: Educational Research Service, Inc., 1975.

The Early Adolescent. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1963.

Leeper, Robert R., ed. Middle School in the Making: Readings From Educational Leadership. Washington, D.C.: Association for Supervision and Curriculum Development, 1974.

The Middle School. East Lansing, Michigan: Michigan Association of School Boards, 1965.

Policies and Standards for the Approval of Junior High/Middle Schools. North Central Association of Colleges and Secondary Schools, 1971-1972.

Unpublished Materials

Caul, Jacqueline L. "A Comparative Study of Student, Teacher and Principal Perceptions of Organizational Structure Between Middle Schools With High Levels and Those With Low Levels of Middle School Concept Implementation." Ph.D. dissertation, Michigan State University, 1975.

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

"The Education of Youth in the Middle Years." A Joint Position Paper of the Michigan Association of Secondary School Principals and the Michigan Department of Education, 1975. (Mimeographed.)

- Elie, Marie-Therese. "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. dissertation, Michigan State University, 1970.
- Fenlon, John L. "An Examination and Development of Recommendations for Implementing Selected Components of a Middle School Instructional System Based Upon the Cognitive Characteristics of Pre- and Early Adolescence." Ph.D. dissertation, University of Denver, 1975.
- Frost, Ernest R. "A Proposed Model for the Training of Intermediate Level School Teachers." Ph.D. dissertation, Ohio University, 1975.
- Hedberg, James D. "Pupil Control Ideology of Middle School Teachers and Its Relationship to Student Alienation and to Selected Organizational and Teacher Variables." Ph.D. dissertation, Michigan State University, 1973.
- Hefner, John Earl. "What Research Says About the Years 10-14; A Guide to Middle School Organization." Ph.D. dissertation, Ball State University, 1969.
- Helder, William James. "An Evaluation of the Preparation of Junior High School Teachers at Michigan State University." Ph.D. dissertation, Michigan State University, 1971.
- Hubert, James Burress. "A Survey of the Recommendations of Selected Teachers for the Preparation of Teachers for Junior High and Middle Schools." Ph.D. dissertation, University of New Mexico, 1972.
- Konsh, Adeline. "Teacher Turnover in New York City Junior High Schools, Some Common Factors in the Backgrounds of English Teachers Who Have Transferred From the Junior High School to the Senior High School of New York City and Their Reactions to Selected Junior High School Practices and Personnel." Ph.D. dissertation, New York University, 1966.
- McKimmy, James A. "A Correlation Comparison of the Relationship Between Interpersonal Values of Teachers and the Measured Self-Esteem and Social Behavior of Early Adolescent Students in Selected Middle Schools and Junior High Schools." Ph.D. dissertation, Michigan State University, 1971.
- Melbourne, Richard Sheehan. "Junior High School Teachers' Evaluation of Pre-service Preparation." Ph.D. dissertation, St. Louis University, 1969.

- Nevins, James B. "A Comparative Evaluation of the Curriculum in an Innovative and a Traditional Junior High School Based Upon Certain Characteristics of Student Educational and Personal Development." Ph.D. dissertation, Texas Tech. University, 1970.
- Position Statement of the Michigan Junior High Middle School Task Force. 1974. (Mimeographed.)
- Powell, William W. "The Development of Evaluative Criteria for Middle School." Ph.D. dissertation, Michigan State University, 1974.
- Raymer, Joe T. "A Study to Identify Middle Schools and to Determine the Current Level of Implementation of Eighteen Basic Middle School Characteristics in Selected United States and Michigan Middle Schools." Ph.D. dissertation, Michigan State University, 1974.
- Stainbrook, James. "A Current and Comparative Analysis of the Professional Preparation of Teachers in the Junior High and Developing Middle Schools of Indiana." Ph.D. dissertation, Indiana University, 1970.
- Underwood, Barbara Ann. "A Comparison of Perceived Concerns of Beginning and Experienced Junior High School and Middle School Teachers." Ph.D. dissertation, Indiana University, 1974.
- Vaughn, John Warren. "Implications of Physical and Intellectual Growth Characteristics, Interests and Cultural Forces for the Improvement of the Middle School Program." Ph.D. dissertation, Michigan State University, 1969.
- Weiser, Jerome A. "An Analysis of the Perceptions of Selected Junior High School Teachers, Principals and Teacher Educators in Regard to Desirable Outcomes for Junior High School Teacher Education." Ph.D. dissertation, Wayne State University, 1969.

MICHIGAN STATE UNIV. LIBRARIES



31293102512815