A COMPARATIVE STUDY OF INSTRUCTIONAL POLICIES OF MIDDLE SCHOOLS ADMINISTERED RESPECTIVELY BY ELEMENTARY - ORIENTED PRINCIPALS AND SECONDARY - ORIENTED PRINCIPALS

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This is to certify that the

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ABSTRACT

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by

Doris Lee Marshall

There are over 1,200 middle schools in the United States, a trend reaching the proportions of a movement. While the related literature well establishes that transescent youth have unique needs that dictate certain broad courses for educational action, variation in instructional policies presently is the hallmark of thought and practice.

Few school principals have been trained specifically for middle school programs. Generally their backgrounds reflect either an elementary school or a secondary school orientation. A knowledge of the relationship of the instructional policies to the organizational orientation of the principal will be instrumental in setting the emergent middle school on an educationally sound foundation. The purpose of this study was to determine if these instructional policies differ between

elementary-oriented and secondary-oriented middle school principals.

Five major hypotheses were established to test for differences in policies regarding the (a) subject matter programs, (b) articulation, (c) social activities, (d) motor development programs, and (e) self-concept identity programs. Each major hypothesis was augmented by two or more of 18 corollary hypotheses.

Data were gathered from 80 multiple choice items on a questionnaire constructed by the writer. Face validity for the questionnaire was established by sending it for review to leading proponents of the middle school movement. The statistical validity and reliability indices were 0.82 and 0.89, respectively.

The questionnaire was mailed to the principal of each of Michigan's 82 middle schools with either a 5-8 or 6-8 grade organization. Fifty-eight per cent of the questionnaires were returned. They were divided into two sample groups, one representing the population of elementary-oriented middle school principals and the other representing the secondary-oriented principals. The number of returns favored the secondary-oriented group by a ratio of three to one.

Hoteling's T^2 test, a multivariant test of analysis, was the statistical instrument used to treat these data. The mathematical transformations were performed

by the Control Data Corporation (CDC) 3600 Computer at Michigan State University. The threshold of significance was established at the 90 per cent level of confidence.

Generally, no significant differences were found between the two groups of principals. The exceptions are discussed in the following specific findings and conclusions:

1. All schools in both samples offered comprehensive courses in the basic skills and exploratory experiences.

2. Fifty-five per cent of the schools had team teaching programs. A school with a unidisciplinary team program generally had multidisciplinary teams, as well. Similarly, 55 per cent of the schools offered a variety of independent study programs.

3. Self-contained lower grades and departmentalized upper grades were the most common grade organization pattern for both groups. Departmentalized programs for all grades accounted for approximately 40 per cent of the combined sample.

4. No clear pattern of grouping pupils for classroom experiences emerged for either sample group.

5. Departmental class period time modules were generally fixed and of the same length for all courses in the schools of both groups of principals.

6. Programs for social facilitation generally were provided and were nearly identical in schools operated by both elementary-oriented and secondary-oriented principals.

7. While elementary-oriented principals demonstrated a statistically significant greater involvement in both programs for incoming

elementary pupils and out-going eighth grade pupils, the policies for both groups of principals provided for only limited programs.

8. Although almost one-half of the schools offered no sex education programs, significant differences between the groups existed within the programs offered. Specific units taught exclusively by the staffs of the secondary-oriented principals contrasted with the elementary-oriented principals' policy to integrate sex education with other units and to utilize both staff and specially trained lay people such as physicians.

9. There was no evidence that any school had explicit policies for each pupil to be known well by at least one teacher.

10. Programs of interscholastic athletics were widespread throughout Michigan's middle schools. They generally were limited only to the upper grade levels.

11. Intramural athletics programs existed in about 75 per cent of the schools and generally were available for pupils at all grade levels, although the participants were predominately boys.

12. All schools had physical education programs, offering an average of four hours of class time each week.

13. Policies for both groups of principals indicated that grades five and six reflected elementary school features in both structure and function; whereas grades seven and eight had many of the features of the secondary school. Michigan's middle schools have not emerged as a distinct educational organization.

14. That departmentalized programs, interscholastic athletics, and school dances represent lower grade level programs for a limited number of schools suggested the encroachment of secondary school concepts into middle school programs, much the same as was the case with the junior high school 40 years ago.

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By

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Clerk, typist, secretary, inspiration, solace, and wife: that's Dody. Lovingly, I dedicate this thesis to her.

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CHAPTER I

THE PROBLEM

Introduction

The reorganization of the grade structure of American public education at the intermediate school has emerged as a composite of traditionally elementary school grades and traditionally junior high or secondary school grades. Exhibiting numerous grade grouping patterns, the new intermediate, (or middle), school may contain the fifth grade at one end of the spectrum and the eighth grade at the other. This reorganization trend is reaching the proportions of a movement. There are roughly 1,200 middle schools in the United States. In Michigan, there are 82 such schools with a modal organization of grades six through eight.

Presently, variation is the hallmark of thought and practice; no single organizational pattern is predominate. Modes of operations and objectives are beginning to precipitate, and with the convergence of a standard organizational structure, the middle school will assume a unique identity. That identity will be affected by many factors, not the least of which will be the principal and his background of experience.

Statement of the Problem

Programs to train teachers specifically to teach at the junior high school level have long been needed and are almost non-existent. Legal certification to teach at any level in the public education system generally qualifies a person to teach at the junior high school level. The new middle schools are no different. They are usually staffed with both elementary-trained and secondary-trained teachers.

Just as middle school teachers are not specially trained for this organization, neither are the principals. The principals' orientation is likely to be polarized toward either the elementary or the secondary grades. Does this polarization affect the instructional policies of the principals? If so, how? Which group, if either, is more closely attuned to the theoretical model of the middle school? The purpose of this study is to determine if there are differences in instructional policies between elementary-oriented and secondary-oriented middle school principals.

Need

Near the turn of the 20th Century, a concern of educators with the problems of early adolescent youth gained nationwide recognition. The early adolescent had unique problems, and the organizational structure of six years of elementary and six years of secondary

schooling failed to provide a matrix in which special attention could be given to his problems.

The child of this concern was the junior high school, and what could have been a prodigy never fulfilled its promise. The cry for academic excellence and the preparation of college bound students soon cast this new intermediate school in a model of a miniature high school.

Gaining momentum in the 1960's, new organizational patterns for the intermediate school are receiving widespread attention. Reasons for the organization of middle schools have ranged from "to eliminate crowded conditions" to "to aid desegregation." But many theorists such as William M. Alexander and Emmett L. Williams,[1] as well as many middle school principals, argue that the basic objective is programmatic, that the emergent middle school organization can and must meet the needs of transescent youth.

Implicit in their works is a common tie -- the fear that the middle school will be molded by the aberration of another organizational premise, that perhaps the high school simply will be moved downward for one or two grades, or that the problem features of the elementary school will be moved up.

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

It is significant and urgent that basic practices be examined now. "The movement continues to grow, very rapidly. . . . It is already late to halt its natural imitation of prior forms. But not too late."[2]

While the principal can accelerate the proposal toward prior forms, he is in a singular position to direct the middle school movement toward an educationally sound rationale. Research findings on the differences in instructional policies as practiced by elementary-oriented and secondary-oriented middle school principals should help to veer this organizational movement toward an educationally defensible rationale.

Definition of Terms

The definitions of terms which follow are presented so that this study may be understood explicitly, accurately interpreted, and replicated at some future time.

1. Articulation - The degree to which the interlocking and interrelation of successive levels of the educational system facilitate the continuous educational progress of pupils or students.
2. Elementary-Oriented Middle School Principal - Any middle school principal who has been

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[2]William M. Alexander, "The New School in the Middle," Phi Delta Kappan, L (February, 1969), 356.

employed as a public school teacher solely with the status of an elementary teaching certificate, and whose prior principalships have not been at the senior high school level.

3. Exploratory Experiences - As distinguished from the basic learning skills, exploratory experiences are the encounters pupils have in programs designed to make them more attuned to themselves and their environment, including interest activities and subjects such as art, music, home economics, etc.
4. Facilitation - The augmentation of the efficiency of an educational performance.
5. Flexible Schedule - A schedule that permits periods to be lengthened, shortened, combined, or shifted in time to meet the varying demands of activity.
6. Independent Study - Study carried on with a minimum or a complete absence of external guidance.
7. Instructional Policy - The planned course of all the directed educational experiences of pupils during their school day.
8. Interscholastic Athletic Competition - A program of athletics which provides for contests between teams or individuals of different schools.

9. Intramural Athletic Competition - A program of self-contained athletics provided for a student body or grade level within a student body, involving only pupils of the same institution.
10. Middle School - A school administrative unit giving a full course of study in grades over four but below nine.
11. Multidisciplinary Team Teaching - Instruction in which two or more teachers formally combine their teaching resources to meet the common instructional objectives of two or more subjects with common groups of pupils.
12. Secondary-Oriented Middle School Principal - Any middle school principal whose prior principalships have not been at the elementary school level and who has been employed as a public school teacher only with the status of a secondary teaching certificate or its equivalent.
13. Social Activities - Grade-wide or school-wide activities which reflect social needs and behavior of youth, such as dances and parties.
14. Transescent Youth - Youngsters whose physical and mental development fall on the maturation interval which has the end of childhood as a lower limit and the beginning of the arrival of adolescence as the upper limit.

15. Unidisciplinary Team Teaching - Instruction in which two or more teachers formally combine their teaching resources to meet the instructional objectives of a common subject with common groups of pupils.

Assumptions of the Study

The study assumes that the questions prepared and organized were appropriate to measure the differences between the instructional policies of secondary-oriented and elementary-oriented principals, and that these are policies that significantly affect the educational climate of the school. It assumes that the individual will respond to the questionnaire with his true perceptions in regard to the school's instructional policies. It further assumes that the dependent variables in the experimental design are normally distributed and that the variance within one population is equal to that within the other population.

Limitations of the Study

This study is limited to the State of Michigan; the quality of the instructional staffs is not considered in this study. Although the terms are carefully defined, lack of consistent responses might result because of the wide training and experience of the administrators. The questions on which the analysis is based are only those

that either elicit a direct quantitative response or a response that can be rank ordered in terms of flexibility of practice. Spurious instructional policies were not tested.

Hypotheses

The dimensions of the problem as it has been outlined can best be conceptualized in the following hypotheses which will be tested in this study.

General Hypothesis 1

Ho:1 Provisions for subject matter facilitation for pupils differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:1a Provisions for courses of study differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:1b Provisions for multidisciplinary team teaching programs differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:1c Provisions for unidisciplinary team teaching programs differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:1d Provisions for the flexible scheduling of class period time modules differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:1e Provisions for exploratory experiences differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:1f Provisions for independent study programs differ significantly between secondary-oriented and elementary-oriented middle school principals.

General Hypothesis 2

Ho:2 Provisions for pupil social facilitation differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:2a Provisions for school dances differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:2b Provisions for activity clubs differ significantly between secondary-oriented and elementary-oriented middle school principals.

General Hypothesis 3

Ho:3 Provisions for pupil identification facilitation differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:3a Provisions for each pupil to be known well by at least one teacher differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:3b Provisions for sex education programs differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:3c Provisions for peer group interaction differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:3d Provisions for parent-pupil-teacher integration differs significantly between secondary-oriented and elementary-oriented middle school principals.

General Hypothesis 4

Ho:4 Provisions for pupil transition facilitation differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:4a Provisions for grade level articulation within the school differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:4b Provisions for grade level articulation with the elementary school differ significantly between

secondary-oriented and elementary-oriented middle school principals.

Ho:4c Provisions for grade level articulation with the secondary school differ significantly between secondary-oriented and elementary-oriented middle school principals.

General Hypothesis 5

Ho:5 Provisions for motor facilitation differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:5a Provisions for interscholastic athletic competition differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:5b Provisions for intramural athletic competition differ significantly between secondary-oriented and elementary-oriented middle school principals.

Ho:5c Provisions for physical education programs differ significantly between secondary-oriented and elementary-oriented middle school principals.

Procedures for Analysis of Data

This study is concerned with exploring the differences in instructional policies between two groups of principals. Statistically, a sample from each of these two populations was drawn. The numerical transformations from the data were analyzed for each hypothesis to determine if there was a significant difference between the mean scores of the two groups of principals. Since more than one question was used to test each hypothesis, a multivariate analysis of data technique was used.

A list was secured from the Michigan State Department of Education of all middle schools functioning in Michigan at the end of the 1968-69 school year. Because

of confounding variables, schools in their first year of operation were not sampled. From the schools on the list, those schools of grade levels appropriate to this study were identified. A small number of middle schools in Michigan have grade patterns other than 5-8 or 6-8. These schools were not included in the sample. All of the principals of schools with a 5-8 or 6-8 grade organization pattern were queried. A questionnaire was constructed by the writer and validated by leading authorities in the field. The questionnaire was structured to reflect the aforementioned facilitations. Questions concerning specialized functions such as guidance were included as an integral part of the instrument.

The questionnaire with cover letter, directions, and a stamped, addressed envelope, was mailed to the principal of each school. A follow-up letter and questionnaire were sent one month later to each principal from whom no reply had been received.

The data were programmed and processed by the Control Data Corporation (CDC) 3600 Computer at Michigan State University. At 90 per cent level of confidence, each set of minor hypotheses was tested with its major hypothesis using Hoteling's T^2 test, a multivariant analysis of variance.

Overview

A frame of reference for the entire study is developed in Chapter I. An introduction to the middle school and its broadly defined problems are given along with the specific problem on which this study is based. The hypotheses are stated and the important terms are defined. The methods for collecting and analyzing the data are discussed.

A review of the related literature is presented in Chapter II. A rationale for the existence of the middle school is developed through its history, philosophy and practice. The nature of middle school pupils is examined. These two sections are synthesized by exploring and establishing the objectives of the middle school. A discussion of how these objectives can be met concludes Chapter II.

The research design and procedures are described in Chapter III. This chapter contains details relative to the subjects, instrument construction and administration, data collection, and analysis procedures.

The analysis of the data is presented in Chapter IV. An appropriate T^2 value is stated, along with the consequent decision for each hypothesis.

A summary of the study, the significant findings, conclusions and implications are presented in Chapter V.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

The breadth of the term instructional policies, the key issue under scrutiny here, dictates a literature review over a wide domain of an integral organization. The review begins with a brief history of the middle school. Then the case for establishing a new intermediate organization with its concomitant problems is examined. Because the middle school is not a unanimously acclaimed concept, a voice is given to the opponents of the movement. Since the subjects of this study are middle school principals, the first section closes by exploring some of their reactions to the school.

The assumption in the remainder of the review is that the middle school is a defensible organizational entity and the study proceeds to develop the key factors that influence instructional policies. Section two deals with the nature of the transescent youth and his emotional, social, physical, and mental development. The third section examines programs and objectives to meet the needs of the early adolescent. The final section deals with strategies to establish and accomplish these programs and objectives.

This review attempts to establish the theme that almost nothing in the structure and function of a middle school can be accepted as an established principle. Most concepts should be viewed as hypotheses to be tested.

History of the American Intermediate School

About 60 years ago, seventh and eighth graders were removed from predominately eight-year elementary schools and placed in either the (then) four-year high schools, or grouped with the ninth graders to form a new organizational unit, the junior high school. Charles W. Elliot, President of Harvard University, issued an initial call for reorganization in a speech before the National Education Association in 1886. His concern was to graduate pupils from high school at an earlier age, a goal never realized. Interest grew and the NEA appointed a "Committee of Ten on Secondary School Studies." Its recommendation, aimed at improving programs for college preparatory pupils, was to establish a six year program in secondary schools or to begin the teaching of secondary school studies two years earlier in the elementary school. During the early years of the 20th Century, the 6-6, 6-3-3, 6-2-4 organizational patterns came into existence.[1]

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[1]Theodore C. Moss, "The Middle School Comes and Takes Another Grade or Two," National Elementary Principal, XLVIII (February, 1969), p. 38.

Factors other than economy of time and better preparation of pupils for college influenced the movement. Age 12 was regarded by many psychologists as the beginning of adolescence; it was believed that youngsters of this age should be housed with pupils in the later years of adolescence. The course of study in the upper grades of the elementary schools generally consisted of penmanship, grammar, reading, spelling, geography, history and arithmetic, a program considered sterile and repetitious when viewed from the vantage point of the high school programs with their vocational courses and extra curricular activities. In theory, the earlier introduction of high school programs should also have reduced the pupil dropout rate, an idea to gain wide acceptance as a valid objective in support of the reorganization movement. In 1907 Thorndike substantiated this claim. John Dewey[2] gave considerable prestige to the movement.

Although influential educators supported the movement, acceptance of the junior high school did not come as a result of convincing research. Studies were made to compare the achivement of pupils in eight year elementary schools with that of pupils in the new junior high schools. Generally, the findings of these studies showed "no significant differences." Those favoring the junior high school began to point out that fundamentals were

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[2] Ibid.

equally well achieved by their pupils, although substantially less time was spent studying them. Subjective evaluations favored the junior high school.[3]

In 1909 and 1910 the first three-year junior high schools were opened in Columbus, Ohio, and Berkeley, California. The schools were opened to relieve overcrowded conditions, a serious problem as the enrollment in public secondary schools between 1890 and 1920 rose from 3.8 per cent to 24 per cent of the normal high school age group. By 1919 there were 387 such schools.[4]

By 1920 most states had accepted compulsory attendance laws and the emphasis in junior high school became one of providing a complete unit of training for those who would be leaving school at an early age. But in the 20 years following 1920, the emphasis on the junior high school changed sharply from that of preparing pupils for college and reducing the dropout rate to one which focused on the immediate needs of the early adolescent. The foundation of its existence rested on the nature of youth in transition. Since 1940, much of the work on the intermediate school has been to refine this position,[5]

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[3]Stanley S. Sanders, "Challenge of the Middle School," Educational Forum, L (January, 1968), p. 191.

[4]Moss, op. cit., p. 39.

[5]Nelson L. Bassing and Roscoe V. Cramer, The Junior High School (Boston: Houghton Mifflin Company, 1965), p. 94.

although many junior high schools reflected the structure of the senior high school.

By mid-century the arguments for the 6-3-3 organization pattern had begun to lose their impact. Many forces were directed toward the schools.[6] A minimum leaving age of 16 or higher was the law in most states. Adult social patterns and puberty were being reached at increasingly earlier ages. Dating, dancing parties, and excessive emphasis on competitive athletics denied the junior high school the distinction of being a unique institution. Parents echoed a common complaint: the junior high school was forcing their children to grow up too fast.[7]

These concerns indicated that perhaps the 5-3-4 plan of grade organization would be superior to any organizational scheme which had the early-adolescent housed with pupils in grade nine or higher. Beginning in the early 1950's with a limited number of schools in the East and

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[6]Franklin Patterson, The Adolescent Citizen (Glencoe, Illinois: The Glencoe Free Press, 1960), p. 3.

[7]Paul Woodring, "The New Intermediate School," Social Foundations of Education, ed. by Dorothy Westley-Gibson (New York: The Free Press, 1967), p. 235.

Southwest, the popularity of the middle school concept grew until in 1967-68, over 1,200 middle schools could be identified in America. A 10 per cent random sample from this population showed that 60 per cent of the schools had a 6-8 grade organization pattern, with enrollments ranging from below 100 to more than 1,300. Self-contained plants housed 80 per cent of these schools. Only 3.8 per cent of the schools were established before 1955, and 10.4 per cent were established prior to 1960. Almost half were established during 1966 and 1967.[8]

The Case for Establishing A New Middle School

The middle school concept is complex and there is danger that it will be misinterpreted or oversimplified. The middle school has not solidified into a single pattern of operation.[9] But this difference is a function of practice rather than of theory. The basic ideas for the establishment of a new intermediate organization can be partitioned into three mutually exclusive sets.

First, problems of modern acculturation are a basic reason to support removal of grade eight from the higher grades. Perhaps the greatest problem and challenge for

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[8]William M. Alexander, "Middle School Movement," Theory Into Practice, VII (June, 1968), p. 115.

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

schools today is that of coping with the desire for early sophistication. This is particularly true of the middle class urban pupil; many ninth graders are already disdainful of the ways of childhood. While the adolescent is ready for new ideas and new experiences, he is less easy to teach, less willing to play the role of the learner, and less likely to accept the teacher as an authority figure.[10] In a study of 320 physical, mental, emotional and social characteristics, the organization of K-4, 5-8 and 9-12 offered the patterns of greatest similarity. Ninth graders are more closely related to twelfth graders than they are to seventh graders. They have interests in doing most of the things the seniors do, and they are ready to begin doing them.[11]

Second, similar arguments can be made that the fifth or sixth grade youngster should not be housed at the elementary level. Regarding social, emotional and physical maturity and opposite-sex choices of intermediate age pupils, the fewest differences were found between pupils in grades six and seven, and between pupils in grades nine and ten.[12] If they do not fit at the

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[10]James Coleman, "Social Change-Impact on the Adolescent," National Association of Secondary Principals' Bulletin, XLIX (April 1965), 11-14.

[11]David W. Meade, "Seventeen, No, Thirteen," Minnesota Journal of Education, XLVII (November, 1966), p. 12.

[12]Ibid.

elementary level now, they will be even more out of place in the future. That two-year-olds can be taught to read is an example of the evidence that supports the case for public education at an earlier age. Very young children will enter school when the early-adolescents are even more sophisticated. The transescent youth will be even further divorced from the elementary school organization.[13]

Third, assuming that the partitioning of the early-adolescent from the upper and lower grades is valid, there remains a fundamental question of whether the new intermediate organization can offer a program to justify its existence. The proponents[14] of the middle school movement are emphatic in their positive response. Brod[15] has summarized many of the theoretical advantages they cite:

1. It gives this unit a status of its own, rather than a "junior" classification.
2. It facilitates the introduction in grades five and six of some specialization and team teaching in staff patterns.
3. It also facilitates the reorganization of teacher education which is sorely needed to

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[13]Glen H. Darling, "The Changing Junior High School," Minnesota Journal of Education, XLVII (November, 1966), p. 12.

[14]See, as examples: Judith Murphy, Middle School (New York: Educational Laboratories, Inc., 1965), and William M. Alexander, The Emergent Middle School (New York: Holt, Rinehart and Winston, Inc., 1968).

[15]Pearl Brod, "The Middle School: Trends Toward Its Development," The Clearing House, XL (February, 1966), p. 332.

provide teachers competent for the middle school; since existing patterns of neither the elementary nor the secondary teacher training programs would suffice, a new pattern must be developed.

4. Developmentally, children in grades 6-8 are probably more alike than children in grades 7-9.
5. Since they are undergoing the common experience of adolesence, sixth-eighth graders should have special attention, special teachers, and special programs, which the middle school permits.
6. It provides an opportunity for gradual change from the self-contained classroom to complete departmentalization.
7. Additional facilities and specialists can be made available to all children one year earlier.
8. It permits the organization of a program with emphasis upon continuation and enrichment of basic education in the fundamentals.
9. It facilitates extending guidance services into the elementary grades.
10. It helps to slow down the "growing up" process from K-8 because the oldest group is removed from each level.
11. It puts children from the entire district together one year earlier, aiding sociologically.
12. Physical unification of grades 9-12 permits better coordination of courses for the senior high school.
13. It eliminates the possibility of some students and parents not being aware of the importance of the ninth grade as part of the senior high school record, particularly in terms of college admission.
14. It eliminates the need for special programs and facilities for one grade and eliminates the problems created by the fact that the ninth grade is functionally a part of the senior high school.
15. It reduces duplication of expensive equipment and facilities for the one grade. The funds can be spent on facilities beneficial to all grades.
16. It provides both present and future flexibility in building planning, particularly when it comes to changing school population.

Later, Brod surveyed over 1,000 middle schools. The survey indicated that the middle school is a success in practice. While the survey indicated that the 6-8

grade organization was preferred to a 5-8 grade organization, the list of advantages of the middle school was a recapitulation of the aforementioned theoretical claims.[16]

It would seem, then, that to remedy the weaknesses of the junior high school would be the most defensible reason for establishing a middle school. Yet more than 50 per cent of the respondents in Alexander's[17] 1967-68 survey indicated other reasons including the need to eliminate crowded conditions, to try out various innovations, to aid desegregation, and to try out plans that had been successful in other school systems.

He[18] examined these schools to determine the number that offered interscholastic athletic programs, which are generally viewed as a weakness in the middle school concept. The numbers were not significantly different between the schools established to remedy the weaknesses of the junior high school and schools established for other reasons. Similarly, he tested these schools for

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[16]Pearl Brod, "Middle Schools in Practice," The Clearing House, XLII (May, 1968), p. 531.

[17]William M. Alexander, "The New School in the Middle," Phi Delta Kappan, L (February, 1969), p. 355.

[18]William M. Alexander, "Middle School Movement," Theory Into Practice, VII (June, 1968), p. 114.

differences between the two groups in the number of departmentalized programs. Again the differences were not significant. Alexander stated that these traits, in fact, were not considered as weaknesses, or that they were no more remedied in one segment of the sample than the other.[19] It should be pointed out that the reason for the establishment of a middle school is not necessarily concerned with the program development of that school. There is little reason to expect significant differences in the above. Alexander[20] concluded that instructional organization of new middle schools reflected the organizational patterns of the schools from which they were synthesized, although many of these schools had certain features distinctive of the middle school movements, including variable and modular schedules and independent study programs.

Those educators fostering the middle school movement realize that many organizational problems must be surmounted. They feel that its merits transcend the limitations. But all educators do not share this point of view.

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[19] Ibid.

[20] Ibid., p. 115.

The Case Against the Middle School

Oestreich readily admits that the junior high school does not meet adequately the need of early adolescent pupils. Since the problem is clearly identified, it would be reasonable to expect to find a number of alternative solutions under test. Such is not the case, and almost without exception, the middle school is the convergent solution.[21] In the early reorganization of secondary education from which the junior high school grew, reliance on the elimination of the four year high school for great educational improvements was a pivotal stance. Today, middle school advocates expect equally great educational improvement with the reinstatement of the four year program. Seemingly, reorganization has received too much attention in this century for its own significance, and it has not been established that the goals espoused by middle school advocates could not be met by introducing certain practices into the elementary school.[22]

Many of the ideas and terms expressed in the October, 1963, issue of the Bulletin[23] of the NASSP, an issue

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[21]Arthur H. Oestreich, "Middle School in Transition," The Clearing House, XLIV (October, 1969), p. 91.

[22]Mauritz Johnson, "Research and Secondary Education," Educational Forum, XXXI (March, 1967), p. 295.

[23]See, for example: Freeman N. Case, "Curricular Changes in the Junior High Schools," National Association of Secondary School Principal's Bulletin, L (October, 1963), p. 49.

devoted entirely to the subject of the junior high school, are the terms and ideas now being expressed in describing the purpose of program in the middle school. The assumption that the middle school differs from a good 7-9 junior high school should be supported by organizational plans which are unique to the middle school. ". . . [A] perceptive school patron might well ask the following question: If the middle school will somehow deal more adequately with the needs of the early adolescent, why are not these same procedures now effective since two-thirds (grades seven and eight) of the school population is already to be found in the present junior high school? If the present junior high school is not as effective as it could be, just how will the new middle school be more effective?"[24]

Vars[25] believes educational goals for early adolescent youngsters have not changed and that the evidence of physiological and psychological differences in today's youth is not totally substantiated. He reports the opinion of junior high school principals is that the 7-8-9 school is more likely to attract and hold competent guidance counselors, subject matter specialists, and male teachers. Under such conditions, the releasing

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[24]Oestreich, loc. cit.

[25]Gordon F. Vars, "Junior High or Middle School? Which Is Best for Education of Young Adolescents?" High School Journal, L (December, 1966), p. 113.

of the ninth grade may reduce the quality of the intermediate teaching staff. He hastens to add that more evidence is needed before this conclusion can be substantiated.

Jennings argues that the likenesses of pupils in grades six and seven and again in grades nine and ten are reasons for retaining the 6-3-3 organization. Moving from one school to another during a time when a pupil's personal growth changes are more stable would be less traumatic than would be the case in a middle school organization pattern.[26] Jennings offered no evidence to support his position, but he receives corollary support from Johnson. Johnson argues that the organizational movement seems to rest on the undesirability of a single social program for the early and late adolescent and that because of the individual variation in the development of youth during these years, the upper and lower limits of the middle school cannot be established with scientific precision.[27]

The theoretical claims have been delineated. The truth of these claims will be validated in the field. The success or failure of the movement will rest with the principals, teachers, pupils and communities that

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[26]Wayne Jennings, "Middle School? No!" Minnesota Journal of Education, XLVII (January, 1967), p. 73.

[27]Johnson, op. cit., p. 296.

compose the school. The subjects of this study, middle school principals, already have expressed reactions.

Daily Concerns of Middle School Principals

According to the survey of "Middle Schools in Action,"[28] reactions of principals to the middle school ranged from favorable to mixed to unfavorable. Favorable reactions included: (a) the middle school better provides for continuity of program, (b) the community is solidly sold on the approach, (c) the middle school eliminates the problem of having the ninth grade at the intermediate level, and (d) the middle school is not a miniature high school.

Reactions from other principals in the survey were mixed. They reported that (a) while teachers are enthusiastic about the middle school concept, it was started because of economical rather than educational considerations; (b) what the school views as minor problems are a recurring concern of parents: sixth grade pupils are unable to function well in a large school setting; (c) while teachers seem more secure in their subject matter area, much of the former teacher guidance no longer exists; and (d) while more departmentalization seems to improve

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[28] National Education Association Research Bulletin, Middle Schools in Theory and Fact (Washington: NEA Press, May, 1969), pp. 12-13.

the academic climate of the school, some teachers tend to think of the school as a secondary school.[29]

Some principals' reactions were unfavorable. They state that (a) pupils do not like the term "middle school," (b) the sixth grade belongs with the elementary school, (c) unfavorable parent reaction has resulted from the curtailment of extracurricular athletics, and (d) the maturity spread of grades five through eight is too great to be of sound educational purpose.[30]

Emphasis should be placed on the fact that each of the above reactions represents the viewpoint of an individual principal as he views his school. While these reactions serve to vignette unique problems and perceptions of individual schools, this alone should not be the basis for any generalizations.[31]

Some of the problems of middle school principals were reported in the same survey. They represent the individual problems of individual principals and should not be interpreted as representing the problems of all middle schools, or even a majority of them. The principals reported problems arise because (a) they have no precedent to follow, (b) teachers with the proper training and

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[29] Ibid., p. 13.

[30] Ibid.

[31] Ibid.

certification are difficult to secure, (c) the rigidity of the districts' programs and material does not reflect the true concept of the middle school, (d) accrediting associations' old policies do not freely allow for experimentation and innovation, (e) sixth graders do not feel like full members of the middle school, (f) teachers resist the change needed to implement the middle school concept, (g) lack of personnel and inadequate plants make for difficulty in providing a program of individualized instruction, (h) the changing of certain classes disturb self-contained or block-time classes, (i) differentiated programs between the grade levels make scheduling difficult, and (j) compared to a self-contained program, departmentalized classes have more discipline problems.[32]

But many concerns of middle school principals transcend the specific problems of the organizational pattern. Principals in the Los Angeles area responding to a survey of interest form listed the following topics as current and important: sex education; innovations; labor relations; teacher, community and student militancy; curriculum for deprived students; student government; educational technology; the evolving role of the principal; personnel for middle schools; schools in transition; narcotics;

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[32] Ibid., pp. 14-15.

the evolving-youth culture; staff orientation; and community relations.[33]

Middle schools have many concerns and problems. What program offers the maximum likelihood estimate of meeting the educational needs of the early adolescent? This is the central issue. The nucleus of the solution rests with the uniqueness of these youngsters.

Transescent Youth

The organizational integrity upon which the middle school is conceptualized is that middle school pupils have certain distinct mental, emotional, social and physical characteristics.

The developmental stages of the years between childhood and adolescence are called transescence. There is no discrete differential between these ages, but, rather there is a gradual change involving physical, mental and social elements. Physically, the young adolescent has a growth spurt and becomes sexually mature. Mentally, he moves from a level of concrete operations to an ability to interact in the abstract. Socially, the reliance on

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[33]Gerald R. Rasmussen, "Meaningful In-Service Program for the Neglected School Administrator," Journal of Secondary Education, XLIV (March, 1969) pp. 129-134.

family for interests, attitudes, and values transfers to the peer group subculture.[34]

With the many changes of puberty, views toward schooling often change as well. For many youths, the opportunity to be with friends is the salient feature of the school. The school provides a setting in which they can reassure themselves regarding their competence in dealing with others, peers and adults alike. It offers a stage where each sex may practice the respective role of becoming manly or becoming womanly. These roles overlap, of course, but for most students, school remains the place where they learn to get ahead. Yet for a few, school is the reflection of a nasty fact, that for them the future holds little brightness.[35]

Not only is the transescent youth faced with a flux of personal growth changes, but also his ecology demands of him a practice of a higher standard of ethics than it did of the early-adolescent when the junior high school first made its appearance on the educational scene. Typically, today's youth is a city boy living in the

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[34]Donald H. Eichhorn, "Teacher Education for the Middle School, A Framework," Theory Into Practice, VII (June, 1968), p. 124.

[35]William Wattenberg, "Youth Education: A Psychological Perspective," Youth Education: Problems, Perspective, Promise, ed. by Raymond H. Muessig (Washington: Association for Supervision and Curriculum Development, N.E.A. Press, 1968), p. 53.

inner city, suburbia or a large town. There is an absence of strong family ties from which stems an earlier interest in the opposite sex. Today's youth lives in a sub-culture encouraged by the mass media and plays an important role as a consumer.[36] He is faced with the forces of the 20th Century. Along with the population explosion has come a concomitant surge in communication and transportation. These developments, coupled with economic prosperity, have forced increased socialization and interdependence on everyone. The role of today's early-adolescent is a demanding one. What passed as a prank in his grandfather's day, would now be considered a criminally delinquent act.[37]

Transescence is a time of turmoil. The growth patterns that accentuate transition will now be examined.

Intellectual Characteristics of Transescent Youth

Changes of mental productivity that occur between childhood and early-adolescence can be conceptualized by looking at the relative differentiation of subject-object interaction, which Piagetian theory defines as egocentrism.[38]

When a child formulates a hypothesis or builds a strategy, he does so strictly from the available data,

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[36]Darling, op. cit., p. 12.

[37]Ibid., p. 10.

[38]David Elkind, "Egocentrism in Adolescence," Child Development, XXXVIII (December, 1967), p. 1,025.

without giving consideration to possibilities which arise from the interaction of the data with his mental activities. The egocentric process here is that he cannot differentiate between available data and his mental activities.[39] With early-adolescence comes the ability to conceptualize all of the combinations of data and the ability to construct contrary-to-fact hypotheses. The adolescent, for example, can deal with the statement, "Suppose that coal is white," a supposition to which the child would reply, "But coal is black." The early-adolescent sees the difference between his data and his mental activities using these data. The child does not.[40] Cognitively, the conquest of thought is the major task of the early-adolescent. He can conceptualize his own thoughts, accept these thoughts as objects, and can reason about them.

Clinical evidence of the shift from concrete to abstract thinking processes of youth is given by Adelson, Green and O'Neil[41] in a study of the growth of the idea of law. From interviews with youngsters aged 11 to 18, answers were coded regarding their concrete-abstractness and were tested by chi square statistics. Not only was

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[39] Ibid., p. 1,028.

[40] Ibid., p. 1,029.

[41] Joseph Adelson, Bernard Green and Robert O'Neil, "Growth of the Idea of Law in Adolescence," Developmental Psychology, L (July, 1969), p. 327.

the concrete-abstract transition borne out, but this growth in the years between 13 and 15 was unusually quick. Specifically, the younger pupils made their judgments of law without much concern for the social needs that the law serves while older adolescents seldom lost sight of this.[42] The authors state that, " . . . [I]t would be misleading to attribute the youngster's growth in sophistication solely to his increased knowledge, or to his greater capacity in handling the abstractions inherent in political thought."[43] The authors also noted a fundamental change in outlook, in temper and quality of discourse.

Wattenberg[44] states that the rate of this transition varies widely between pupils. Some pupils' mental growth was stable throughout early-adolescence. For others, the rate of growth changed sharply upward. Some youngsters' growth rate became slower, while for others, growth was erratic. They have a broad spectrum of intellectual adeptness and have developed a wide variety of cognitive styles, expressing various degrees of fluency, seriousness of purpose, and achievement motivation.[45]

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[42] Ibid., p. 331.

[43] Ibid., p. 332.

[44] Wattenberg, op. cit., p. 50.

[45] Ibid., pp. 47-48.

A great variance in growth rates also is common in the physical development of transescent youth.

Physical Characteristics of Transescent Youth

Generally, well-nourished children mature faster than poorly nourished ones, with girls maturing one to one and a half years earlier than boys. Ten per cent of the girls are mature sexually at 11, 50 per cent at 13, and 90 per cent at 15; while with boys 10 per cent are mature sexually at 13, 50 per cent at 15, and 99 per cent at 17.[46]

The beginning of puberty is noted by increase in the growth rate of the breasts, ovaries and uterus in girls. In boys there is an increased rate of growth in the size of the testes, scrotum and penis. For both sexes, shoulders, hips, arms, legs, height and total body mass increase in rate of growth. By and large, these changes occur a full two years earlier for girls than for boys. The different changes do not follow the same sequence for all individuals, and any particular change may vary by as much as five years between individuals.[47]

The adolescent spurt in body height for the typical girl begins just after 10 years of age and peaks at

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[46] Ibid., p. 47.

[47] Howard V. Meredith, "Synopsis of Puberal Changes in Youth," Journal of School Health, XXXVII (April, 1967), p. 171.

about age 12. Following the peak of the growth rate, the velocity sharply falls. Girls are still growing in height at age 14, but at a much slower rate. Differentiated spurts in trunk length, hip width, common girth, leg girth and body height are similarly timed. The change commences between ages 8 and 13, and rarely, both earlier and later. The average age for the beginning of breast enlargement is 10.5 years, falling on a high probability five year interval, with full development being reached in about three years.[48]

For girls the first appearance of pigmented hair in the pubic region occurs at an average age of 11, plus or minus one and one-half years. Pigmented hair in the axillary regions first occurs at about age 12. From the appearance of pubic hair to full density generally requires three years. The first appearance of pubic hair is not closely correlated with the beginning of breast enlargement. The figures given by Meredith are for Western white girls and are approximately those of American Negroes.[49]

Of adolescent changes, the age of menarche has been closely studied. A century ago the average first occurrence of the menstrual cycle was 14.5 years. Today it is 13 years. Fifty per cent of today's girls reach menarche between

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[48] Ibid., p. 171.

[49] Ibid., p. 172.

ages 12 and 14 years. A girl may be in any stage of puberal breast or hair development when the first menstrual cycle begins. Menarche has been quite strongly associated with the age of the beginning of breast enlargement, with the beginning of pigmented pubic hair, and with the time of the maximum rate of height and weight increase. Following menarche, the girl typically grows in height another 2.5 inches, although one girl in seven may grow in height four inches or more. The onset of menarche does not necessarily mean that the girl has the ability to become pregnant. Commonly, there is a period of three or more years of puberal sterility.[50]

In boys, the earliest observable sign of puberal change is an increase in the size of the testes. The increased growth rates commonly occur at age 12 for the testes and about age 12.5 for the penis. The high probability interval for these two changes is 9.5 years to 14.5 years for the testes and 10 years to 15 years for the penis. Generally, between ages 12.5 years and 17 years the average length of the penis almost doubles, and from 12 years to 19 years there is a tenfold increase in the volume of the testes. Meredith's findings are for white boys.[51]

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[50] Ibid., p. 173.

[51] Ibid.

As with girls there is a period of rapid growth in height which typically begins at age 12.5 and reaches a crest at age 14. Thereafter, the rate of increase declines greatly. Ten and one-half years to 16 years is the interval during which this growth spurt generally begins. During a 12-month period, a boy may grow five inches in height. The differentiated growth spurts of the trunk and limb size are similar to those of girls, except they are shifted to two years later.[52]

The interval in which 80 per cent of the boys first have observable pigmented pubic hair is between ages 10 years and 16 years, with 13 years being the average. The average time from the beginning of pigmented pubic hair to a dense growth is about three years. The appearance of axillary hair follows pubic hair by about one year.[53]

Moderate amounts of breast enlargement accompany puberal changes in boys. A node of firm tissue develops under each nipple. The nodes generally are present between ages 11 years and 15 years. Frequently, they are too small to palpate in late adolescence.[54]

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[52] Ibid., p. 174.

[53] Ibid.

[54] Ibid.

That a boy may be in any stage of pubic and axillary hair development when spermatazoa are first discharged in the urine, characterizes the wide range and often broken sequences of pubic development in boys. One 14-year old may have no puberal increase in penis size, while for another the organ may be near maximum size. For some boys the full development of testes, scrotum, penis, pubic and axillary hair may not fully be reached until age 20, while for others full development may be reached at age 15.[55]

Social and Emotional Characteristics of Transescent Youth

Psychologically, the greatest change of puberty is that young people learn how to receive gratification of needs from each other. As a reinforcer for conduct, peer approval begins to overshadow the need for adult approval. This change is accompanied by model identity changes. While the young child models his identity after parents, teachers or other important adults, the adolescent finds his source of models in the mass media or literature, wherein his identity model is the athlete, the young television hero, or any other young person with an immediacy of appeal.[56]

A clinical example of peer influence is given in a case study of a socially-oriented, underachieving, sixth

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[55] Ibid., p. 175.

[56] Wattenberg, op. cit., p. 51.

grade boy conducted by Greenbaum, Harris and Schaeffer.[57] The experimental program for this socially-oriented underachiever--one who will work, not for achievement, but rather for social approval--consisted of rewarding the classmates, as well as the underachiever, for appropriate behavior which was any improvement in his academic performance. For every improvement, the class and subject were rewarded one minute of free time from compulsory calisthenics in physical education. After two months the pupil was in the upper half of his class in reading, mathematics, spelling, social studies and Spanish. The researcher felt that the sharing of reinforcers throughout the social system greatly enhanced modified behavior. An interesting follow-up to this study would be one which would measure the variance of behavior modification between different age groups. This could be a measure of the need for peer acceptance.

Hill and Kochandorfer[58] further experimentally demonstrated peer influence by showing that among 60 sixth grade subjects, incidence of cheating was more closely

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[57]Marvin Greenbaum, Alice Harris and Benson Schaeffer, "The Treatment of Socially Oriented Underachievers," Journal of School Psychology, IV (Winter, 1968), p. 70.

[58]John P. Hill and Roy C. Kochancoefer, "Knowledge of Peer Success and Risk of Detection as Determinates of Cheating," Developmental Psychology, I (May, 1969), p. 231.

related to pupils with knowledge of how peers had performed on the test than to pupils who had no such knowledge.[59]

Peer influence manifests itself in social situations. The early adolescent is conscious of sex-identification. Early in adolescence, free social life revolves around single sex groups: the boys play vigorous games, dreaming of adventure; the girls giggle and start using lipstick. Early interest in the opposite sex is clumsily handled and often is parallelled by a scholastic slump. When boy-girl relationships are mastered, concomitant improvements in scholarship are likely to occur.[60]

For parents and other adults, the youth's behavior is often perplexing and seemingly unexplainable. Elkind[61] offers an interesting theory to explain these extremes in behavior. Although the youngster now is freed from the egocentrism of childhood which prevented him from differentiating between his thought processes and the external data with which he was dealing, new egocentric patterns arise. While he can conceptualize his own

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[59]Donald H. Eichhorn, The Middle School (New York: The Center for Applied Research in Education, Inc., 1966), p. 48.

[60]Wattenberg, op. cit., p. 50.

[61]Elkind, op. cit., p. 1,030.

thoughts and the thoughts of other people, he cannot differentiate between his own preoccupations and the mental processes of others. Consequently, he believes that others also are preoccupied with his appearance and behavior. He feels that he is the primary object of everyone's attention. He acts on the premise that others are as admiring or critical of him as he is of himself. He constructs an imaginary audience,[62] an audience because he sees himself as the focus of attention and imaginary because this is not often the case.

The idea of an imaginary audience can explain the self-consciousness so characteristic of this age. Since this audience is a construct of his imagination, it likewise has access to all of his perceptions of his inadequacies. The imagined audience knows just where to look for cosmetic and behavioral sensitivities. The early adolescent feels that he is under constant and critical scrutiny of others. He reacts by becoming shy.[63]

Often this failure to differentiate can explain loudness, faddish dress and boorishness. Since he can be self-admiring as well as self-critical, he feels that the calling of attention to himself is admired by others.[64]

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[62] Ibid.

[63] Ibid.

[64] Ibid.

While he does not differentiate the objects of his thought from those of others, he over-differentiates his own feelings. He feels that certain intense feelings are reserved only for him: agony, rapture, love. He may become convinced that he will not die and that God is his personal confidant. Elkind[65] refers to this belief in the uniqueness of his feelings as a personal fable.

The imaginary audience and personal fable reach their peaks in adolescence. Gradually, he realizes that the thought processes of others are as unique as his own. With the passing of adolescence, realistic differentiations are made.[66]

The transition from childhood to adolescence is complex. The educational goals and objectives to accommodate these changes are no less so.

Goals and Objectives of the Middle School

Havinghurst[67] has identified three major developmental tasks for transescent youth, around which the school's goals and objectives revolve. The first involves the organization of the knowledge of social and physical reality. The preadolescent is selective of what he

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[65] Ibid., p. 1,031.

[66] Ibid.

[67] Robert J. Havinghurst, "Middle School Children in Contemporary Society," Theory Into Practice, VII (June, 1968), pp. 120-122.

wishes to learn. One youngster may like math, another music, but a need common to almost all is to systematically organize their concepts. The second developmental task is that of learning to work well in the peer group. The transescent youth is concerned with his ability to get along with his peers and is closely attuned to the personalities of his age-mates. It follows that this is an excellent time to develop favorable socio-cultural attitudes. Third, the transescent pupil needs to develop independence. A youngster of this age should be able to stand alone.

For pupils to achieve their goals and objectives in these tasks, the middle school program must be comprehensive. A cognitive skills program is not enough. Likewise, efforts directed only at the social and emotional phases of schooling will be inadequate.

Eichhorne, Meade, Alexander and Williams[68] identified three components of a middle school curriculum. The first is an analytical facet, including mathematics, science, social studies and language. These should be characterized by logical, sequential and cognitive learning in which individual attention can be given to the pupil's progress. The second facet should be programs

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[68]Meade, loc. cit.; Eichhorne, op. cit., p. 123; William M Alexander and Emmett L. Williams, "School for the Middle Years," Controversy In American Education, ed. by Harold Full (New York: The MacMillan Company, 1967), pp. 114-121.

designed to help the pupils learn to know themselves. There should be programs in growth and development, social dynamics, and physical activities. Appropriate experiences in this area would include friendship with members of their own sex, realization that the other sex can be interesting, admiration of adult models, and an opportunity to explore their own identity. The third curriculum facet would be designed for self-expression, helping to develop divergent mental processes. This would include arts, fine arts, composition, literature and the performing arts.

Compton is specific and has stated the goals and programs from an organizational framework:

> 1. Articulation with the elementary school to assure easy transition for youngsters. This may necessitate a pseudo self-contained classroom approach during a portion of the school day for the first year of middle school education.
> 2. Team teaching by subject-matter specialists in areas of general knowledge which are closely related--English language, literature, history, geography, economics, anthropology, science, art, and music.
> 3. Skills laboratories staffed by technologists with subject-matter competencies to provide remedial, developmental, and advanced instruction in such skills as reading, listening, writing, mathematics, science, foreign language, art, music and physical education.
> 4. Independent study for all students, commensurate with the topic selected for study and the students' needs, interests and abilities.
> 5. A home-base group assigned to a teacher with special training in guidance and counseling, as well as the time and the opportunity to aid children with personal and academic problems on a regularly scheduled basis.

6. A program of activities in which each student will be able to participate--based on the personal development of students rather than on enhancement of the school's prestige or the entertainment of the public.
7. A plan of vertical school organization providing for continuous progress of students.
8. Evaluative techniques in light of individual progress, rather than the prevalent punitive system of assigning grades in terms of some elusive "average" for a particular chronological age group.
9. A program tailored to the needs of each student with individualized student schedules.
10. An instructional and administrative staff with an understanding of the in-between-ager, competence in teaching at least one subject area, and a genuine desire to provide the best possible program for these youngsters.[69]

Gersen summarizes the middle school program well. Transescent youths should have a program to meet the physical, intellectual, emotional and social development which are crucial at this stage of their life development. They should have a co-curricular and intramural program designed to these developmental areas, and each pupil should be known well by at least one teacher. The pupils should have a common program consisting of the English language, arts, social studies, unified arts and a strong physical education program.[70]

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[69]Mary F. Compton, "Middle School: Alternative to the Status Quo," Theory Into Practice, VII (June, 1968), p. 109.

[70]Raymond Joseph Gerson, "Proposals for Middle School Curriculum" (unpublished Ph.D. dissertation, Columbia University, 1968), p. 3.

Knowledge About How To Achieve These Goals

The past few years have seen an accelerating increase in the instructional strategies used to implement both the traditional and recent innovations in curriculum. This section will give a critical overview of the most significant strategies.

Many theorists advocate the flexible scheduling of classes. The Carnegie Unit or any other rigidly scheduled periods of time applied indiscriminately to all courses over one or more grade levels fail to meet the individual needs of students. Flexible scheduling is an alternative to this organization and falls into several categories. The most common is perhaps modular schedules in which the school day is built around modules of time. Usually each module is 20 minutes in length. Two or more modules generally constitute a class. The length of a class can be adjusted to meet its individual needs. The fluid block program represents another alternative to a rigid schedule. In this program, six to eight teachers are assigned to 150 to 200 pupils. Teachers work cooperatively to schedule class time and other activities for the pupils. Such schedules can be changed weekly.[71]

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[71]Duane J. Mathesis, "Flexible Requirements Stimulates Innovations," Minnesota Journal of Education, XLIX (September, 1968), p. 39.

One widely-supported flexible scheduling plan calls for 40 per cent of the pupil's time in large group instruction, 20 per cent of the time in small group instruction and 40 per cent of the time in independent study.[72] In practice, many educators feel that 40 per cent of a pupil's time should not be spent in large group instruction; that in fact, it would be difficult to establish any single activity that would be of equal educational value to 150 students. That no more than ten per cent of a pupil's time should be spent in large group instruction is the claim of many educators. Obviously, a teacher's planning time varies inversely with the amount of time spent in large group instruction.[73]

This format places value not only on flexible scheduling, but on team teaching and independent study as well. Yet basic issues can be raised concerning either of these strategies.

"Are the educational accomplishments of the students improved through the use of team teaching?" is a vital question. Answers to this question are far from conclusive and are often contradictory. Assuming that the teacher

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[72]William Van Til, Gordon F. Vars and John H. Lounsbary, Modern Education for the Junior High School Years (Indianapolis, Indiana: The Bobbs-Merril Co., Inc., 1967), p. 211.

[73]David E. Shawner, "Team Teaching: How Successful Is It?" The Clearing House, XLVII (September, 1968), p. 22.

is relieved of secretarial tasks, she should have more time to plan and execute creative teaching. The team allows the teacher to specialize, and an excellent opportunity is created for the individualization of instruction.[74] But team teaching is not designed for the answer-centered curriculum. The entire concept is posited upon open and sustained communication among all staff members, often a difficult objective to achieve.[75]

Three basic questions should guide the decision of whether to adopt team teaching: (a) Does the school recognize that a child is unique? (b) Does the school recognize the uniqueness of the teacher? (c) Is there acknowledgement that instructional practice should not be rigidly bound by arbitrary time schedules? If the answers to these questions are positive, team teaching could be a valid alternative to present practice.[76]

The concept of independent study is widely endorsed. For an individual to be responsible for his own learning and for his continuing education has long been identified as the ultimate goal of education. Independent study should foster that goal. But it appeals only to a limited

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[74] Ibid., p. 24.

[75] George J. Funaro, "Team Teaching," The Clearing House, XLIII (March, 1969), p. 403.

[76] Ibid., p. 401.

range of students, including the very bright, the highly motivated and the academically inclined.[77]

The attainable objectives of independent study include: (a) the activity is inherently good, (b) faculty time is conserved, (c) enrichment, (d) acceleration, (e) pupils work at their own rate, (f) creativity is fostered, and (g) it helps pupils to discover their own best techniques for learning. No greater mental capabilities are needed for successful independent study than for success in traditional classes.[78]

A successful independent study program must have content that will attract and maintain the pupil's interest, must have adequate resources, and must have content with recognizable limits and a difficulty level such that the pupil can study it in depth with a high probability of success.[79]

The teacher who directs the independent study must have certain special qualities. She must be able to recognize and acknowledge the potential of the learner. She must be able to ask provocative questions while encouraging the questions of her pupils. She must be able to recognize and value originality, develop creative

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[77]Fredrick R. Cyphert, "Independent Study: The Dilemma," Theory Into Practice, V (December, 1966), p. 205.

[78]Ibid., p. 206.

[79]Ibid., p. 207.

readers and predict behavior accurately. Finally, she must be able to develop the skills of research and creative problem-solving.[80]

It would appear that any pupil could have a successful experience in independent study provided that it is under the direction of a very capable teacher.

Programs of flexible scheduling, team teaching and independent study only recently have received general popularity, but programs of social activities have been part of the intermediate school for years.

Howard[81] writes of problems in junior high school activities. Generally, his comments apply to the middle school. In the best of times, school activities are sensitive to criticism,and under duress there is always the cry to get rid of the frills. A common complaint is that intermediate school activities tend to take on the sophistication of the high school program. Instances of excessive emphasis do exist. This is particularly true with interscholastic activities, pep bands, drill teams, majorettes and coverage of certain events by the news media. The school band may be released periodically from

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[80]Paul E. Torrance, "Independent Study As An Instructional Tool," Theory Into Practice, V (December, 1966), p. 220.

[81]Alvin W. Howard, "Problems in Junior High School Activities," School Activities, XL (January, 1969), p. 2.

non-music classes to prepare for a marching program and instruction may be slowed for weeks while the cast prepares for the school play.

On the other hand, some intermediate schools have very limited activity programs which are autocratic and adult directed. Over-emphasis or under-emphasis, there remain the claims that certain activities receive disproportionate support in funds, support, meeting places and meeting times.[82]

Regardless of ubiquitous criticism, activity programs are essential. It is essential that these programs have the real concern of the student as their focal point of operation.[83] It is suggested that for elementary school activities, and hence, with application, at least in part to the middle school, much of the activity program should be conducted within the classroom. Here many opportunities are available if the staff will allow such experiences. Often a lack of confidence in the pupils' abilities and sense of responsibility is revealed by the discouragement of such participation.[84]

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[82] Ibid.

[83] Ibid.

[84] R. D. Greanlee, "Encouraging More Club Activities in Very Large Schools," Instructor, LXXVII (April, 1969), p. 35.

Although an activity program can satisfy many of the identity needs of the early adolescent, there remain many problems that call for adult guidance.

But much research is needed for the establishment of a good guidance program involving counselor educators for the middle school. Many elementary schools have no counselors, and Barr[85] has indicated that secondary-school-oriented counselors have failed to identify with the intermediate school. Often a junior high guidance program is only an adaptation of a senior high program, although the counseling needs of the two groups differ greatly.

A pupil's sense of self-esteem is formed by the important adults in his life and their opinions of him. He must be loved and permitted to love. If the teacher can provide this, then she can help a student learn to meet his needs in socially acceptable ways.[86] It has been demonstrated that self-concept and adjustment are significantly related to each other.[87] Good programs are

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[85]Donald J. Barr, "Look at Junior High School Counseling," Michigan Education Association Journal, XLV (November, 1967), p. 17.

[86]Sister Mary L. Studer, "Role of the Teacher in Developmental Guidance in an Elementary School," NCEA Bulletin, LXIV (November, 1967), p. 187.

[87]Hamed A. S. Zahran, "Self-Concept in the Psychological Guidance of Adolescents," Britan Journal of Educational Psychology, XXVII (June, 1967), p. 239.

needed but are not available. Suffice it to say that all teachers are involved in guidance.[88] There is no neutral ground. A teacher may damage a self-concept, intensify frustrations and increase a pupil's feeling of inadequacy. She may help a pupil provide solutions to his problems. Here, as in perhaps no other role, the teacher must know her limitations. On the one hand, she cannot afford to do nothing; on the other, she must not fulfill the role of a psychotherapist if she is not so trained.[89]

To this point most of the discussion has centered around the internal affairs of the middle school, but the very term "middle" implies that consideration must be given to the educational domain of the pupil before he enters and again after he leaves the school.

What happens to boys and girls at one grade level should not be dictated by what is to come later at another grade level. But consideration must be given to the pupil experiences yet to come so that the pupils will gain the greatest profit.[90] Effectiveness in reading, writing, and arithmetic is a universal need, and emphasis should be placed on an elementary program to foster these skills. Another need to provide for a smooth articulation

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[88]Leslie W. Kindred, The Intermediate Schools (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1968), p. 312.

[89]Studer, loc. cit.

[90]Van Til and others, op. cit., p. 34.

from the elementary school to the secondary school would include a quality of awareness. The pupils should be able to perceive the wide spectrum of opportunities available to them. The pupils should have an ability to explore, a spirit of inquiry. They should be able to learn by discussion and should be able to handle freedom and work independently. Articulation of program for the transescent youth should not be based upon specific programs but rather upon the cultivation of certain kinds of personal traits.

Summary

The American intermediate school came into existence about 60 years ago. Charles W. Elliot called for a reorganization so that pupils could graduate earlier from high school, a fact never realized. Other factors influenced the movement, including claims by psychologists that the early adolescent had special needs for which special housing was needed. That the intermediate school organization would reduce the dropout rate, a claim to be substantiated by research, was a significant rallying point for the leaders of the reorganization movement.

By mid-century many of these early arguments had begun to lose their force. So many of the junior high schools had adopted senior high school programs

inappropriate for intermediate grades that the organization had lost its uniqueness. The junior high was simply a scaled-down high school.

Today's middle schools with a predominate 5-8 or 6-8 grade organization pattern began to emerge in the early 1950's. The trend became a movement. In 1967-68 over 1,200 middle schools were identified in the United States.

The theoretical foundation for the middle school organization rests on the nature of the transescent youth. Transescence is a time of turmoil for the pupil who is typically from a large town, city or urban area, and whose family ties are weakened. Physically larger, he lives in a sub-culture permeated by the mass media and peer groups, and he plays an important role as a consumer. From this vantage point, he faces the sweeping impact of intellectual, physical, social and emotional change.

Intellectually, this period brings great growth in the ability to deal with abstractions. He learns to do more than just compile data in order to obtain a synthesis solution. For example, he can arrive at a rational conclusion by beginning with a hypothesis that is contrary to fact. This intellectual growth spurt has been substantiated with clinical evidence and accelerates at

a faster rate than one would predict by using chronological age growth as a standard.

Physically, early-adolescents do not all grow at the same rate. Growth spurts can begin at any place on a wide chronological interval and are of widely varying duration. Ten per cent of the girls are sexually mature at 11, and 90 per cent are mature by age 15. Sexual maturity in boys lags by two years.

Psychologically, learning to receive gratification from each other represents the greatest change. Peer group values often replace those of the family.

The curriculum of the middle school should be built around the needs of the transescent pupil. The program should have a strong analytical facet, including instruction in the English language, arts, social studies, unified arts and physical education.

The transescent youth should have the opportunity to have value-laden experiences with peers and significant adults. From this premise it is argued that there should be a strong co-curricular and intramural program and that every pupil should be known well by at least one teacher. These programs should also be designed to provide experiences designed to help each pupil find his unique identity, the third major facet of the middle school curriculum.

A wide range of teaching strategies can be identified as appropriate to implement the middle school curriculum. These generally include team teaching, flexible scheduling, independent study, appropriate social activities, and guidance programs.

CHAPTER III

DESIGN OF THE STUDY

Introduction

The major objective of this study was to analyze the instructional policies of middle school principals who had either an elementary school or a secondary school background. This chapter is concerned with the composition of the sample, the development of the statistical instrument, the methods used for collecting the data, and the procedures for the analysis of the data.

Source of the Data

The Michigan State Department of Education listed 97 middle schools which were in operation at the end of the 1968-69 school year. Eighty-two of these schools had a grade organization pattern of 5-8 or 6-8. These two patterns are predominant in the United States and are the patterns to which this study is limited. A wide range of patterns were identified in the remaining 11 schools, including 5-9 and 3-7. A questionnaire was sent to each of the 82 schools. Data for the study were gathered from the questionnaires that were completed and returned by the principals.

Instrument Employed

The original questionnaire included 62 multiple choice questions which were designed to measure 23 hypotheses. Ideas for the questions were gathered from the literature in the field of the middle school. To write questions with quantifiable responses was a basic criterion used in developing the questionnaire. For most questions, the principals could describe the practices of their schools in terms of "How many," "What per cent," or "How often." Such answers are objective and tend to increase the validity of the instrument. Certain bits of crucial data did not lend themselves to quantitative assessment. For this information, a second criterion was established: responses were rank ordered according to the flexibility of the instructional policy. The most inflexible practice listed in the responses was coded with a one. As the flexibility of a practice increased, so did its code number assignment.

These questions, along with the hypotheses that they were to measure, were sent to three leading proponents of the middle school movement: Dr. Emmett Williams, University of Florida; Dr. M. Ann Grooms, University of Cincinnati; and Dr. Nicholas P. Georgiady, University of Miami (Ohio). Dr. Williams responded that his commitments prevented him from being able to give the questionnaire a thorough review. Dr. Grooms

and Dr. Georgiady commented favorably and offered suggestions for its improvement. The instrument was field tested by three local middle school principals.

The questionnaire was revised. Some questions were rewritten. Certain questions were expanded. Particularly, many questions designed to use one response to measure a variable operating at two grade levels, were expanded such that a response could be made for each grade level. For example, a question beginning, "For grades seven and eight, . . ." might have been rewritten into two questions, the first being, "For grade seven, . . ."

The final questionnaire contained 80 questions. An understanding of the structure and the inter-relationship of the hypotheses is necessary to understand the structure of the questionnaire. The questions were designed to measure five major hypotheses. There were 18 corollary hypotheses, each of which was closely related to a major hypothesis. For example, General Hypothesis 1 tested the area of subject matter facilitation. Each of the five hypotheses that were corollaries to this major hypothesis tested for differences in specific areas of subject matter facilitation. A major hypothesis could be conceptualized as a house with each of the related hypotheses represented as a room within the house. Thus it was possible to explore a broad area within the

framework of instructional policies, and at the same time examine specific instructional policies.

In the same manner, a series of questions was written to test each general hypothesis. From this series an appropriate subset of questions was used to test a corollary hypothesis. Thus each specific question was used twice in the analysis procedures. First, it was used as part of a battery of questions to test a general hypothesis. Second, it was used with a limited number of other questions from the battery to test a specific hypothesis. For example, General Hypothesis 2 was measured by questions 35 through 41. This hypothesis had two corollary hypotheses. The first was measured by questions 35 through 37; the second by questions 38 through 41.

In the actual construction of the questionnaire, questions to test the corollary hypotheses were built first. As these subsets of questions were combined, they were examined for their likelihood of accurately measuring the major hypothesis. Adjustments were made when needed. Hopefully, the questions that were combined from the corollary hypotheses provided for a cynergistic analysis of their respective major hypotheses.

Along with a cover letter, the questionnaire was mailed on January 20, 1970, to each of the 82 principals.

The next step in the construction of the questionnaire was to establish its reliability. Was it stable and trustworthy? Was there an inherent weakness in the questionnaire itself which would cause a principal to be unable to choose the response which most nearly reflected the instructional policies of his school? One method to measure the reliability of an instrument is to test a group of subjects and then at a later date, retest the same group with the same instrument. If the test is reliable, the responses of each subject on the second test should correspond closely to his responses on the first test. The goodness of reliability can be measured by correlating the respective responses. The coefficient of correlation is an index of the reliability of the test. The reliability of this questionnaire was determined in such a manner. Three weeks after the first wave of questionnaires returned, 10 of the 30 schools that had returned questionnaires were selected by use of random numbers. These 10 schools constituted the sample to measure the statistical reliability of the instrument. Questionnaires were sent again to the principals of each of these schools. Once more they were asked to complete and return the questionnaire. Eight principals did so. A two column matrix was constructed, in which the numerical value of the response to each question of the first questionnaire by a principal was coupled with the

corresponding response on the second questionnaire submitted by the same principal. Using the standard formula for the calculation of the coefficient of correlation from raw scores whose deviations are taken from zero, the responses from the first set of questionnaires were correlated with the responses from the second set of questionnaires. The index of reliability was 0.89, a satisfactory value.

At the same time that reliability indices were established, validity indices were also established. A test is valid if it measures what it purports to measure. Was there an inherent weakness in the questionnaire which would prevent a principal from selecting the response which most accurately represented the policies of his school? (A test can be reliable without being valid. For example, if a subject consistantly selects response A to a particular question, then that question is reliable. If, however, response B is the correct response, the question is not valid.) Assuming that two groups of subjects have the same knowledge of a field of inquiry, a test is valid if the responses made by one group correspond closely to the responses made by the other. The validity of the questionnaire was determined by correlating the responses made by a small sample of principals to the respective responses made by their assistant principals. As with the reliability sample, 10 schools from those

that had returned questionnaires were randomly selected. Questionnaires were mailed to their assistant principals. Nine questionnaires were returned. The responses of the assistant principals were correlated with those of their respective principals to give a validity index of 0.82.

The responses to the questions were labeled on the questionnaire with letters of the alphabet. The numerical value of a response was not assigned until the questionnaire had been returned. Information regarding the coding procedure was not provided for the respondents, and responses to some questions were deliberately arranged such that the numeric code value was not sequential. (See Appendix A.)

Procedures

By March 1, 1970, 53 questionnaires had been returned. Three questionnaires were discarded because the principals had such a wide background in both elementary education and secondary education that no criteria existed which definitely established them as members of one camp or the other. Four other questionnaires were discarded because one school had reorganized into the traditional 7-9 junior high school, and three never had been middle schools. Apparently an error had been made when their names were listed as middle schools by the State Department of

Education. The effective sample size was 43. The responses from 43 questionnaires were coded for the statistical analysis. Of these, 11 questionnaires were incompletely marked. For example, a respondent inadvertently may have failed to mark an entire page. These principals were contacted by telephone for completion of their questionnaires.

As the questionnaires were returned, two sample groups were formed. Sample group one included all those principals who were elementary-oriented, and sample group two included all those principals who had a secondary school orientation.

The decision to include a principal with a particular group was based on his answers to the questions: How many years have you been a secondary school principal? How many years have you been an elementary school principal? How many years have you taught under a secondary school certificate? How many years have you taught under an elementary school certificate? The decision rule developed from these questions provided for the labeling of a principal as elementary-oriented if his training was in that area, although he may have had a substantial amount of experience at the junior high school level.

Analysis of the Data

The data were programed for a computer analysis. The numerical value of each response was written on a data-coding form. This transcription was checked for accuracy by a second individual. A key punch operator was employed to transfer the data from the data coding form to computer punch cards. She then proofread the cards. They were checked again against the data-coding form by an independent observer. Since the findings of the analysis of the corollary hypotheses could not be read from the computer printouts of the major hypotheses analyses, a deck of cards was prepared for each of the 23 hypotheses, and each hypothesis was tested separately by the Control Data Corporation (CDC) 3600 Computer at Michigan State University.

Each principal represented an independent variable. For hypotheses two through five, each question represented a dependent variable. For these hypotheses, including their corollaries, the numerical value of each response to a question was transferred directly to a data coding form. As a specific example, General Hypothesis 2 was measured by the numerical values of responses to six questions on each of 43 questionnaires. Hence, the design contained six dependent variables and 43 independent variables.

A necessary condition to Hoteling's T^2 test is that a design must contain at least twice as many independent variables as dependent variables, i.e., for each question there must be at least two principals responding to the questionnaires. If a hypothesis is measured by 32 questions, as was the case with General Hypothesis 1, then for each question to be treated as a dependent variable, there must be at least 64 questionnaires available.

For General Hypothesis 1, 41 questionnaires constituted the independent variables. Therefore, the statistical design could not contain more than 20 dependent variables. To analyze this hypothesis, the responses from the 32 questions had to be combined such that the number of numerical values on each questionnaire would be reduced from 32 to not more than 20.

Some questions were closely related, and their numerical response values were combined by multiplication. One composite value was formed by taking the product of the responses to each of the following: Questions 3, 4 and 5; 9, 10 and 11; 17 and 19; 20 and 22; 21 and 23; 27 and 30; 28, 31 and 32. The numerical values to questions 1, 2, 6, 7, 8, 12, 13, 14, 15, 24, 25 and 26 were transferred directly to the data-coding sheet. The responses to the 32 questions were reduced 19 numerical values.

Although General Hypothesis 1 was measured by data from 32 questions, its design contained 41 independent variables and only 19 dependent variables.

The composite values also were utilized in testing the corollaries to this hypothesis.

Contrary to expectations, only one questionnaire was received from an elementary-oriented principal whose school had a 5-8 organizational pattern. Because of an inadequate sample size, data that related specifically to policies toward the fifth grade of any school could not be treated. Responses to questions concerned with grade five were discarded.

Hoteling's T^2 test was the statistical formula used in the analysis of the data. This is a multivariate technique which can be used to study the extent to which two populations overlap each other. If the variances of the two populations are equal, as assumed in this study, then the test will measure differences between the means of the arrays of data gathered from the two samples. This was how the test was used in this study. Specifically, it is a multivariate generalization of the t-test.[1] Whereas the t-test uses one dependent variable to measure the difference between the means of two populations, Hoteling's T^2 test uses two or more dependent variables to test for these differences. Hoteling's T^2 test requires a large number of calculations and has been increasingly used where data can be treated by computers.

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[1]George W. Snedecor and William G. Cochran, Statistical Methods (Ames, Iowa: The Iowa State University Press, 1967), p. 327.

The 90 per cent level of confidence was used as the threshold of significance. The level at which the differences in the mean values of the null hypotheses became significant was available directly from the computer printout.

Characteristics of the Sample

The largest school in the elementary-oriented principals' sample had an enrollment of 1,290 pupils. Its 58 year old principal had been an elementary school principal for nine years and a middle school principal for seven years. The school had 62 teachers and opened in 1963. The smallest school in this group had 482 pupils, 23 teachers, and opened in 1960. Its principal was 52 years old, had been an elementary principal for 10 years and a middle school principal for five years. In this sample the typical school, as measured by mean values, had an enrollment of 668 pupils, and 29 teachers. Its principal was 44 years old, had 10 years of teaching experience, and had been a middle school principal for seven years. Seven principals indicated that they had been elementary school principals. The opening of these schools showed no cluster pattern. The earliest school opening was 1950; the most recent opening year was 1968.

The demographic data for the secondary-oriented principals' sample closely approximated that of the elementary-oriented principals' group. In this group the

largest school had an enrollment of 1,047. It had 45 teachers and opened in 1959. Its principal was 34 years old, with three years of experience as a middle school principal. The smallest school had an enrollment of 281 and opened in 1967. Its 44 year old principal had been a secondary school principal for two years and a middle school principal for four years. Again using mean values, the typical school had an enrollment of 619 pupils and had 28 teachers. Its principal was 40 years old, had taught for 12 years and had been a middle school principal for four years. Only nine principals indicated that they had been principals of secondary schools. Six schools opened in the modal year of 1967. The range of opening years was from 1950 to 1968. (See Appendix B.)

Summary

A questionnaire containing 80 questions was sent to each of Michigan's 5-8 or 6-8 middle schools. The questions, validated statistically and logically, were designed to test five major hypotheses and 18 corollary hypotheses. Forty-three usable questionnaires were returned. These questionnaires were partitioned into two samples, one representing elementary-oriented principals, and the other representing secondary-oriented principals. Hoteling's T^2 test was the formula used to test for differences between means of the two populations.

The data were treated by the Control Data Corporation (CDC) 3600 Computer. Significance was recognized at the 90 per cent level of confidence.

CHAPTER IV

ANALYSIS OF THE DATA

The findings of the analysis are presented in this chapter. For each hypothesis, a corresponding null hypothesis is stated. Along with the degrees of freedom, an F or T^2 value is stated for each null hypothesis. These values were generated by Hoteling's T^2 test. The 90 per cent level of confidence was used as the threshold of significance and was the decision rule upon which the null hypotheses were either rejected or not rejected.

General Hypothesis 1

General Hypothesis 1 was measured by the first 32 questions on the questionnaire. Each questionnaire yielded 19 bits of data. Hoteling's T^2 test requires that there must be two subjects, i.e., two principals, for each dependent variable. For the majority of the hypotheses in this study, the questions were each treated as the dependent variable. In the analysis of Major Hypothesis 1, each question could not be treated as a dependent variable because there were not enough subjects to allow for the analysis. Consequently, the scores of certain closely related questions were combined by

multiplication such that, in effect, the number of dependent variables would not exceed 20. The numerical values of responses to questions 1, 2, 6, 7, 8, 12, 13, 14, 15, 24, 25 and 26 were transferred directly to the computer coding sheet. Seven composite scores were obtained by taking the products of the numerical values associated with questions 3, 4 and 5; 9, 10 and 11; 17 and 19; 20 and 22; 21 and 23; 27 and 30; 28, 31 and 32. Although General Hypothesis 1 was tested by 32 questions, these questions yielded only 19 numerical scores.

Hypothesis: Provisions for subject matter facilitation for pupils differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_1 \neq \mu_2$

Null Hypothesis: Provisions for subject matter facilitation do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_1 = \mu_2$

μ_1: Provisions by elementary-oriented middle school principals for subject matter facilitation.

μ_2: Provisions by secondary-oriented middle school principals for subject matter facilitation.

The test of the null hypothesis yielded an F or T^2 value of 0.6770. The degrees of freedom were 19 and 22. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 1a

Hypothesis 1a was measured by the responses to questions one and two on the questionnaire.

Hypothesis: Provisions for courses of study differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_3 \neq \mu_4$

Null Hypothesis: Provisions for courses of study do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_3 = \mu_4$

μ_3: Provisions by secondary-oriented middle school principals for courses of study.

μ_4: Provisions by elementary-oriented middle school principals for courses of study.

The test of the null hypothesis yielded an F or T^2 value of 0.8009. The degrees of freedom were 2 and 39. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 1b

One score from each questionnaire was obtained by taking the products of the numerical responses to questions three, four and five. These composite scores and the numerical values associated directly with questions six, seven and eight represented the data for the four dependent variables used to test Hypothesis 1b.

Hypothesis: Provisions for multidisciplinary team teaching programs differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_5 \neq \mu_6$

Null Hypothesis: Provisions for multidisciplinary team teaching programs do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_5 = \mu_6$

μ_5: Provisions by elementary-oriented middle school principals for multidisciplinary team teaching programs.

μ_6: Provisions by secondary-oriented middle school principals for multidisciplinary team teaching programs.

The test of the null hypothesis yielded an F or T^2 value of 0.2336. The degrees of freedom were 4 and 37. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 1c

Hypothesis 1c was measured by questions nine through 14 on the questionnaire. It was measured by four dependent variables. The numerical values to the responses to questions 12, 13 and 14 were transferred directly to the data coding form. One composite score from each questionnaire was obtained by taking the products of the numerical values associated with questions 9, 10 and 11.

Hypothesis: Provisions for unidisciplinary team teaching programs differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_7 \neq \mu_8$

Null Hypothesis: Provisions for unidisciplinary team teaching programs do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_7 = \mu_8$

μ_7: Provisions by secondary-oriented middle school principals for unidisciplinary team teaching programs.

μ_8: Provisions by elementary-oriented middle school principals for unidisciplinary team teaching programs.

The test of the null hypothesis yielded an F or T^2 value of 2.3536. The degrees of freedom were 4 and 37. At the 90 per cent level of confidence, the null hypothesis was rejected.

Hypothesis 1d

The dependent variable used to measure Hypothesis 1d was question 15 on the questionnaire.

Hypothesis: Provisions for the flexible scheduling of class period time modules differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_9 \neq \mu_{10}$

Null Hypothesis: Provisions for the flexible scheduling of class period time modules do not differ

significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_9 = \mu_{10}$

μ_9: Provisions by secondary-oriented middle school principals for the flexible scheduling of class period time.

μ_{10}: Provisions by elementary-oriented middle school principals for the flexible scheduling of class period time.

The test of the null hypothesis yielded an F or T^2 value of 0.1447. The degrees of freedom were 1 and 40. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 1e

The dependent variables used to test Hypothesis 1e were the responses to questions 24 through 26 and the three composite variables formed by taking the product of the numerical values of the responses to questions 17 and 19; 20 and 22; 21 and 23.

Hypothesis: Provisions for exploratory experiences differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{11} \neq \mu_{12}$

Null Hypothesis: Provisions for exploratory experiences do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{11} = \mu_{12}$

μ_{11}: Provisions by secondary-oriented middle school principals for exploratory experiences.

μ_{12}: Provisions by elementary-oriented middle school principals for exploratory experiences.

The test for the null hypothesis yielded an F or T^2 value of 0.4426. There were 6 and 35 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 1f

The composite scores obtained from the products of the numerical values to the responses to questions 27 and 30, and to questions 28, 31 and 32 constituted the dependent variables against which Hypothesis 1f was tested.

Hypothesis: Provisions for independent study programs differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{13} \neq \mu_{14}$

Null Hypothesis: Provisions for independent study programs do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{13} = \mu_{14}$

μ_{13}: Provisions by secondary-oriented middle school principals for independent study programs.

μ_{14}: Provisions by elementary-oriented middle school principals for independent study programs.

The test of the null hypothesis yielded an F or T^2 value of 0.0800. There were 2 and 39 degrees of freedom.

At the 90 per cent level of confidence, the null hypothesis was not rejected.

General Hypothesis 2

Questions 35 through 41 were the dependent variables in the design to measure General Hypothesis 2. The numerical values of the responses were transcribed directly to the data coding sheet.

Hypothesis: Provisions for pupil social facilitation differ significantly between secondary-oriented and elementary-oriented middle school principals.

$\mu_{15} \neq \mu_{16}$

Null Hypothesis: Provisions for pupil social facilitation do not differ significantly between secondary-oriented and elementary-oriented middle school principals.

$\mu_{15} = \mu_{16}$

μ_{15}: Provisions by secondary-oriented middle school principals for pupil social facilitation.

μ_{16}: Provisions by elementary-oriented middle school principals for pupil social facilitation.

The test of the null hypothesis yielded an F or T^2 value of 0.5394. The degrees of freedom were 7 and 35. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 2a

The dependent variables for the measure of Hypothesis 2a were questions 35 through 37 on the quesionnaire. The numerical values of the responses were transcribed directly to the data coding form.

Hypothesis: Provisions for school dances differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{17} \neq \mu_{18}$

Null Hypothesis: Provisions for school dances do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{17} = \mu_{18}$

μ_{17}: Provisions by secondary-oriented middle school principals for school dances.

μ_{18}: Provisions by elementary-oriented middle school principals for school dances.

The test of the null hypothesis yielded an F or T^2 value of 1.0823. The degrees of freedom were 3 and 39. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 2b

Questions 38 through 41 constituted the dependent variables in the design to measure Hypothesis 2b. The data were composed of the numerical values assigned to the responses to these questions.

Hypothesis: Provisions for activity clubs differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{19} \neq \mu_{20}$

Null Hypothesis: Provisions for activity clubs do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{19} = \mu_{20}$

μ_{19}: Provisions by secondary-oriented middle school principals for activity clubs.

μ_{20}: Provisions by elementary-oriented middle school principals for activity clubs.

The test of the null hypothesis yielded an F or T^2 value of 0.0364. There were 4 and 38 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

General Hypothesis 3

The design for the test of General Hypothesis 3 included 12 dependent variables. The data for each variable came, respectively, from questions 43 through 55, except 50. (Question 50 related specifically to grade 5 and was not used in the analysis.)

Hypothesis: Provisions for pupil identification facilitation differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{21} \neq \mu_{22}$

Null Hypothesis: Provisions for pupil identification facilitation do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{21} = \mu_{22}$

μ_{21}: Provisions by secondary-oriented middle school principals for pupil identification facilitation.

μ_{22}: Provisions by elementary-oriented middle school principals for pupil identification facilitation.

The test of the null hypothesis yielded an F or T^2 value of 1.8263. There were 12 and 30 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was rejected.

Hypothesis 3a

Hypothesis 3a was evaluated by the responses to questions 43 through 46. Each question represented a dependent variable.

Hypothesis: Provisions for each pupil to be known well by at least one teacher differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{23} \neq \mu_{24}$

Null Hypothesis: Provisions for each pupil to be known well by at least one teacher do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{23} = \mu_{24}$

μ_{23}: Provisions by secondary-oriented middle school principals for each pupil to be known well by at least one teacher.

μ_{24}: Provisions by elementary-oriented middle school principals for each pupil to be known well by at least one teacher.

The test of the null hypothesis yielded an F or T^2 value of 1.3916. There were 4 and 38 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 3b

The numerical responses to questions 47 through 49, the dependent variables, represented the data used to test Hypothesis 3b.

Hypothesis: Provisions for sex education programs differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{25} \neq \mu_{26}$

Null Hypothesis: Provisions for sex education programs do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{25} = \mu_{26}$

μ_{25}: Provisions by secondary-oriented middle school principals for sex education programs.

μ_{26}: Provisions by elementary-oriented middle school principals for sex education programs.

The test of the null hypothesis yielded an F or T^2 score of 2.5035. There were 3 and 39 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was rejected.

Hypothesis 3c

Three dependent variables were used in the design to measure Hypothesis 3c. Data for each dependent variable were taken, respectively, from questions 51 through 53.

Hypothesis: Provisions for peer group interaction differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{27} \neq \mu_{28}$

Null Hypothesis: Provisions for peer group interaction do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{27} = \mu_{28}$

μ_{27}: Provisions by secondary-oriented middle school principals for peer group interaction.

μ_{28}: Provisions by elementary-oriented middle school principals for peer group interaction.

The test of the null hypothesis yielded an F or T^2 value of 0.6121. There were 3 and 39 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 3d

Data from the responses to the dependent variables, questions 54 and 55, were used to evaluate Hypothesis 3d.

Hypothesis: Provisions for pupil-parent-teacher integration differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{29} \neq \mu_{30}$

Null Hypothesis: Provisions for pupil-parent-teacher integration do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{29} = \mu_{30}$

μ_{29}: Provisions by secondary-oriented middle school principals for pupil-teacher-parent orientation.

μ_{30}: Provisions by elementary-oriented middle school principals for pupil-teacher-parent interaction.

The test of the null hypothesis yielded an F or T^2 value of 0.0349. There were 2 and 40 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

General Hypothesis 4

The statistical design of General Hypothesis 4 included 11 dependent variables, which were questions 57 through 68, excluding 60. The data were the numerical values of the reponses to those questions. (Question 60 related specifically to grade 5.)

Hypothesis: Provisions for pupil transition facilitation differ significantly between secondary-oriented and elementary-oriented middle school principals.

$\mu_{31} \neq \mu_{32}$

Null Hypothesis: Provisions for pupil transition facilitation do not differ significantly between secondary-oriented and elementary-oriented middle school principals.

$\mu_{31} = \mu_{32}$

μ_{31}: Provisions by secondary-oriented middle school principals for transition facilitation.

μ_{32}: Provisions by elementary-oriented middle school principals for transition facilitation.

The test of the null hypothesis yielded an F or T^2 value of 1.4847. There were 11 and 31 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 4a

The numerical values of the responses to questions 57, 58, 59, 61, 62 and 63, the dependent variables in this design, were the data for the test of Hypothesis 4a.

Hypothesis: Provisions for grade level articulation within the school differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{33} \neq \mu_{34}$

Null Hypothesis: Provisions for grade level articulation within the school do not differ significantly

between secondary-oriented and elementary-oriented middle school principals. $\mu_{33} = \mu_{34}$

μ_{33}: Provisions by secondary-oriented middle school principals for grade level articulation within the school.

μ_{34}: Provisions by elementary-oriented middle school principals for grade level articulation within the school.

The test of the null hypothesis yielded an F or T^2 value of 0.7968. There were 6 and 36 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 4b

Hypothesis 4b was measured by numerical values of the responses to questions 64 and 65, the dependent variables in this design.

Hypothesis: Provisions for grade level articulation with the elementary school differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{35} \neq \mu_{36}$

Null Hypothesis: Provisions for grade level articulation with the elementary school do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{35} = \mu_{36}$

μ_{35}: Provisions by secondary-oriented middle school principals for grade level articulation with the elementary school.

μ_{36}: Provisions by elementary-oriented middle school principals for grade level articulation with the elementary school.

The test of the null hypothesis yielded an F or T^2 value of 5.0448. The degrees of freedom were 2 and 40. At the 90 per cent level of confidence, the null hypothesis was rejected.

Hypothesis 4c

Questions 66 through 68 comprised the dependent variables in the design to test Hypothesis 4c. The numerical values of the responses to these questions were the data.

Hypothesis: Provisions for grade level articulation with the secondary school differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{37} \neq \mu_{38}$

Null Hypothesis: Provisions for grade level articulation with the secondary school do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{37} = \mu_{38}$

μ_{37}: Provisions by secondary-oriented middle school principals for grade level articulation with the secondary school.

μ_{38}: Provisions by elementary-oriented middle school principals for grade level articulation with the secondary school.

A test of the null hypothesis yielded an F or T^2 value of 2.2773. There were 3 and 39 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was rejected.

General Hypothesis 5

Questions 69 through 80, excluding 77, constituted the dependent variables in the design to test General Hypothesis 5. The numerical values of the responses constituted the raw data. (Question 77 related specifically to grade 5.)

Hypothesis: Provisions for motor facilitation differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{39} \neq \mu_{40}$

Null Hypothesis: Provisions for motor facilitation do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{39} = \mu_{40}$

μ_{39}: Provisions of secondary-oriented middle school principals for motor facilitation.

μ_{40}: Provisions of elementary-oriented middle school principals for motor facilitation.

The test of the null hypothesis yielded an F or T^2 value of 1.6107. There were 11 and 25 degrees of freedom.

At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 5a

Hypothesis 5a was evaluated by the numerical responses to questions 69 through 71, the dependent variables in the design.

Hypothesis: Provisions for interscholastic athletic competition differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{41} \neq \mu_{42}$

Null Hypothesis: Provisions for interscholastic athletic competition do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{41} = \mu_{42}$

μ_{41}: Provisions by secondary-oriented middle school principals for interscholastic athletic competition.

μ_{42}: Provisions by elementary-oriented middle school principals for interscholastic athletic competition.

The test of the null hypothesis yielded an F or T^2 value of 1.1626. There were 3 and 34 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 5b

The design used the numerical values of the responses to questions 72 through 74, the dependent variables, to test Hypothesis 5b.

Hypothesis: Provisions for intramural athletic competition differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{43} \neq \mu_{44}$

Null Hypothesis: Provisions for intramural athletic competition do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{43} = \mu_{44}$

μ_{43}: Provisions by secondary-oriented middle school principals for intramural athletic competition.

μ_{44}: Provisions by elementary-oriented middle school principals for intramural athletic competition.

The test of the null hypothesis yielded an F or T^2 value of 1.4089. There were 3 and 34 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Hypothesis 5c

Hypothesis 5c was measured by the numerical responses to questions 75, 76, 78, 79 and 80, the dependent variables in this design.

Hypothesis: Provisions for physical education programs differ significantly between secondary-oriented

and elementary-oriented middle school principals.

$\mu_{45} \neq \mu_{46}$

Null Hypothesis: Provisions for physical education programs do not differ significantly between secondary-oriented and elementary-oriented middle school principals. $\mu_{45} = \mu_{46}$

μ_{45}: Provisions by secondary-oriented middle school principals for physical education programs.

μ_{46}: Provisions by elementary-oriented middle school principals for physical education programs.

The test of the null hypothesis yielded an F or T^2 value of 1.5278. There were 6 and 31 degrees of freedom. At the 90 per cent level of confidence, the null hypothesis was not rejected.

Summary

Generally, the null hypotheses showed that no differences existed in the instructional policies of the two groups of principals; and therefore the null hypotheses could not be rejected. Statistically significant differences were established concerning policies of unidisciplinary team teaching programs, pupil identification facilitation, sex education programs, and programs of middle school grade level articulation with both the elementary and the secondary school. The meanings of this analysis are discussed in Chapter V.

CHAPTER V

CONCLUSIONS

Summary

There are over 1,200 middle schools in the United States, a trend reaching the proportions of a movement. While the related literature well establishes that transescent youth have unique needs that dictate certain broad courses for educational action, variation in instructional policies presently is the hallmark of thought and practice.

Few school principals have been trained specifically for middle school programs. Generally, their backgrounds reflect either an elementary school or a secondary school orientation. A knowledge of the relationship of the instructional policies to the organizational orientation of the principal will be instrumental in setting the emergent middle school on an educationally sound foundation. The purpose of this study was to determine if these instructional policies differ between elementary-oriented and secondary-oriented middle school principals.

Five major hypotheses were established to test for differences in policies regarding the (a) subject matter

programs, (b) articulation, (c) social activities, (d) motor development programs, and (e) self-concept identity programs. Each major hypothesis was augmented by two or more of 18 corollary hypotheses.

Data were gathered from 80 multiple choice items on a questionnaire constructed by the writer. Face validity for the questionnaire was established by sending it for review to leading proponents of the middle school movement. The validity and reliability indices were 0.82 and 0.89, respectively.

The questionnaire was mailed to the principal of each of Michigan's 82 middle schools with either a 5-8 or 6-8 grade organization. Fifty-eight per cent of the questionnaires were returned. They were divided into two sample groups, one representing the population of elementary-oriented middle school principals and the other representing the secondary-oriented principals. The number of returns favored the secondary-oriented group by a ratio of three to one.

Hoteling's T^2 test, a multivariant test of analysis, was the statistical instrument used to test these data. The mathematical transformations were performed by the Control Data Corporation (CDC) 3600 Computer at Michigan State University. The threshold of significance was established at the 90 per cent level of confidence.

Generally, no significanct differences were found between the educational policies of the two groups of principals. The exceptions were discussed in the specific findings and conclusions. Significantly, most of the policies of the two samples were so similar that the data could be combined for a discussion of specific programs or practices. By and large, the practices of the two groups were indistinguishable.

Findings

Subject Matter Facilitation

All schools responding to the questionnaire offered a wide variety of basic skills courses and exploratory learning experiences.

Provisions for both multidisciplinary and unidisciplinary team teaching programs did not differ greatly between the two groups of principals. For both populations, approximately 55 per cent of the schools had team teaching programs. Generally, schools with unidisciplinary team teaching programs also had multidisciplinary teams. Multidisciplinary teams were found predominately in the lower grades, while unidisciplinary teams were more common at the upper grade levels.

Practices of independent study programs were indistinguishable between the two groups of principals. Approximately 55 per cent of the combined repondents reported

independent study programs. These programs provided for independent study, either at all grade levels or only at the upper grade levels. Pupil participation formed a discrete dichotomy: involvement was limited to less than 25 per cent of the pupils, or it exceeded 75 per cent.

For departmentalized courses, the structure of class period time modules was essentially the same for both groups of principals. Eighty per cent of the combined respondents reported that the time length of a departmentalized class was fixed and the same for all classes. The remainder reported that the time length was determined by the nature of the class, but once determined it remained fixed for the duration of the program. There was no evidence of any fluid-block scheduling procedures for departmentalized structures.

Articulation Facilitation

Grouping practices for elementary-oriented principals closely approximated those of the secondary-oriented principals. There was no clear pattern of practice with either group. Perhaps the most significant finding in grouping patterns was the lack of differentiation of practice over successive grade levels. By and large, the pattern at grade five remained unaltered through grade eight.

While the general hypothesis of differences in grade level articulation between the two populations was

not supported, significant differences did exist in programs for both incoming elementary pupils and for pupils preparing for immediate transition to the secondary school. In both cases, and for both elementary-oriented and secondary-oriented principals, these programs were of a limited scope. Pupil visitations from the elementary school to the middle school and from the middle school to the secondary school seldom exceeded one-half day. No definite pattern for parent involvement could be discerned.

Although articulation programs were limited for both groups, many secondary-oriented principals indicated that they had no provision for programs of visitation for either the incoming elementary pupils or the outgoing secondary pupils. The statistical significance of the hypothesis was established by these factors.

Within the schools, two patterns of grade level organization emerged. Thirty per cent of the elementary-oriented principals and 43 per cent of the secondary-oriented principals reported that all grade levels were departmentalized, but the majority of principals in both samples had the lower grades organized into self-contained classes, and grades seven and eight were departmentalized. Generally, self-contained classes received instruction in specific areas such as music and physical education by subject matter specialists. Random and

ability grouping procedures were practiced predominately and with nearly equal frequency in organizing pupils within a class.

Social Facilitation

The statistical parameters for social facilitation policies between the two groups were almost identical. Generally, school dances were restricted to the upper grade levels and held four times each year in both days and evening. Eighty per cent of the schools responding to the questionnaire held school dances. This is 5 per cent higher than the number of schools reporting club-type activity programs.

As measured by modes, the typical activity program consumed four hours each month, involved less than one-half of the student body and less than one-fourth of the teaching staff. Yet variance between programs was the obvious distinction in the data. For example, one school reported a program involving less than 25 per cent of the pupils and more than 75 per cent of the staff. Another school reported a program with these figures interchanged.

Pupil Identification Facilitation

Provisions for pupil identification facilitation differed significantly between elementary-oriented and secondary-oriented middle school principals. The strength of their difference rested on the function of sex education programs within the schools. Generally, in the schools

of elementary-oriented principals, sex education was taught as an integral part of other course work and was taught both by the staff and specially trained lay people, such as physicians. This was sharply contrasted with the programs of the secondary-oriented principals, in which sex education was taught exclusively by the staff and as specific units. Significant of both groups was the fact that 41 per cent of the combined sample reported no sex education programs.

No pattern for the provisions of each pupil to be known well by at least one teacher could be identified. While in many schools the amount of time spent with one teacher was sufficient for the teacher to provide much personal attention and extensive guidance, it appeared that this provision was a function of subject matter facilitation rather than of guidance. Teacher-pupil interpersonal relations seemed to be only a peripheral issue in the formal structure of the school. Although there is no question of the need and value of good relationships, the quality of an individual or a staff to function well in this area is so diverse that it may be that a wise principal will attempt to develop these programs through the school's informal organization.

Motor Facilitation

Programs to augment motor facilitation do not differ significantly between elementary-oriented middle school principals and secondary-oriented middle school principals.

Physical education programs function in the schools of all the responding principals. A wide majority of principals reported both programs of interscholastic athletics and intramural athletics.

Generally, interscholastic athletics were restricted to grades seven and eight. Only one principal reported that his school had no interscholastic athletics. One elementary-oriented principal and two secondary-oriented principals had programs available to pupils at all grade levels. No provision for interscholastic competition for only the lower grades was reported. Less than 25 per cent of the eligible pupils participated in interscholastic sports.

More than 75 per cent of each group of principals reported having provisions for programs of intramural athletics. Generally, these programs, which offered from one to five sports, were provided for all grade levels, with about 50 per cent of the boys active. Participation by girls lagged by 25 per cent.

All schools reported physical education programs in which the typical pupil spent four hours weekly. About 40 per cent of the schools had programs that provided for increased time for physical education with each successive grade level. Only three schools provided no physical education for pupils in the lower grades.

Conclusions

Except as indicated in the specific conclusions, the hypotheses of differences in instructional policies between elementary-oriented and secondary-oriented middle school principals were not supported.

1. All schools in both samples offered comprehensive courses in basic skills and exploratory experiences.

2. Fifty-five per cent of the schools had team teaching programs. A school with a unidisciplinary team program generally had multidisciplinary teams, as well. Similarly, 55 per cent of the schools offered a variety of independent study programs.

3. Self-contained lower grades and departmentalized upper grades were the most common grade organization pattern for both groups. Departmentalized programs for all grades accounted for approximately 40 per cent of the combined sample.

4. No clear pattern of grouping pupils for classroom experiences emerged for either sample group.

5. Departmental class period time modules were generally fixed and of the same length for all courses in the schools of both groups of principals.

6. Programs for social facilitation generally were provided and were nearly identical in schools operated by both elementary-oriented and secondary-oriented principals.

7. While elementary-oriented principals demonstrated a statistically significant greater involvement in both programs for incoming elementary pupils and out-going eighth grade pupils, the policies for both groups of principals provided for only limited programs.

8. Although almost one-half of the schools offered no sex education program, significant difference between the groups existed within the

programs offered. Specific units taught exclusively by the staffs of the secondary-oriented principals contrasted with the elementary-oriented principals' policy to integrate sex education with other units and to utilize both staff and specially trained lay people, such as physicians.

9. There was no evidence that any school had explicit policies for each pupil to be known well by at least one teacher.

10. Programs of interscholastic athletics were widespread throughout Michigan's middle schools, although they generally were limited only to the upper grade levels.

11. Intramural athletics programs existed in about 75 per cent of the schools and generally were available for pupils at all grade levels, although the participants were predominately boys.

12. All schools had physical education programs, offering an average of four hours of class time each week.

13. Policies for both groups of principals indicated that grades five and six reflected elementary school features in both structure and function, whereas grades seven and eight had many of the features of the secondary school. Michigan's middle schools have not emerged as a distinct educational organization.

14. That departmentalized programs, interscholastic athletics, and school dances represent lower grade level programs for a limited number of schools suggested the encroachment of secondary school concepts into middle school programs, much the same as was the case with the junior high school 40 years ago.

Recommendations for Further Study

Since the fundamental changes in early adolescence often create a personal identity crisis for the pupil, the lack of specific programs to cope with this problem, as

reported in the related literature and substantiated by this study, should be cause for alarm. Identifying, developing, and instituting middle school guidance programs should be high priority research items.

The question of interscholastic athletics programs should be resolved. Most middle schools have them. Those educators who view these programs as a weakness often base their claims on opinions unsupported by evidence. The issue may be a tempest in a teapot.

Perhaps the most important issue raised in this study is one of influence. Generally, the instructional policies of the two groups of principals were indistinguishable. If the background of a principal does not greatly influence the policies of the school, then who or what does? It seems unlikely that planned growth patterns can be institutionalized until the forces that promote or inhibit such growth can be isolated.

A study of the subjective differences in elementary-oriented and secondary-oriented middle school principals would be an interesting parallel to this thesis. How does the principal feel about his job? What does he perceive to be the differences in the roles of elementary- and secondary-oriented teachers? How would he explain the difference between theory and practice within his school?

It would appear that the theory for providing proper socialization patterns for transescent youth could be in

conflict with the theory for providing for their intellectual needs. In practice, providing training by subject matter specialists can negate acceptable patterns of peer group and of teacher interaction. An excellent research project would be to develop a curriculum theory that would integrate social and intellectual development.

A study that would be of immeasurable value but perhaps too sophisticated for a doctoral thesis would be establishing an analysis of variance project that would discriminate between elementary-oriented and secondary-oriented middle school principals in the growth patterns of pupils in each of the major developmental areas: social, emotional, physical, and intellectual maturity.

Not only should organizational studies be promoted, but emphasis should be placed on the case study, as well. Case studies of particular pupils in almost any area of middle school theory would be significant in understanding the transescent youth and the middle school movement.

Reflections

Although perhaps not the most scholarly section, the most difficult, but yet most rewarding chapter of this thesis was the review of literature. The task was to make in thorough and comprehensive, but not cumbersome. Further, it should not be merely a passive recapitulation or compendium of the middle school movement, but, rather, it should identify the issues facing the school. It should

raise more questions than it answers. The writer feels that he was fairly successful in meeting these objectives.

A few years ago it would have been unlikely for a student to undertake a research design of the scope presented herein. Even with the aid of an electric desk calculator, the amount of time required to analyze the data of 23 hypotheses based on 80 questions would have been prohibitive. Although this problem was resolved with the use of a computer, another problem evolved. It may have been unreasonable to expect principals to respond to the comprehensive content of the questionnaire. If the writer were to repeat this study, he would sharply revise the questionnaire. An effort would be made to write and print the questionnaire, such that the same data could be obtained, but with considerably less effort required of the principals.

The writer has had an interest in statistical research for a number of years. He greatly enjoyed designing the experiment, writing the hypotheses, and collecting and analyzing the data. He enjoyed the challenge to write significant conclusions without transcending the boundaries of the data. This thesis has been a meaningful experience.

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APPENDIX A

THE QUESTIONNAIRE

(The numerical values assigned to responses are listed in parentheses.)

Middle School Instructional Policies

Questionnaire

Instructions. Page one is designed to collect information from which the sample can be well-defined. Please fill in the blanks.

The remainder of the questionnaire consists of 80 questions designed to provide data such that a number of hypotheses concerning instructional policies can be tested.

In each question, circle the multiple choice answer that provides an accurate assessment of your school's operation. PLEASE BE SURE TO CIRCLE ONE ANSWER PER QUESTION.

Following each question is room for comment. Use this space if none of the available answers satisfactorily describes your school. You also may wish to comment on the answer you circled and the unique features of your school.

After you have completed the questionnaire, please use the envelope provided to return it to:

D. L. Marshall
2751 Golf Club Blvd.
Jackson, Michigan 49203

Please print or type replies

D. L. Marshall
January, 1970

MIDDLE SCHOOLS

School system _____

Name of school _____

City _____ State _____ Zip Code _____

Principal _____

A. Please supply the following data regarding your School:

1. Grades included _____
2. Number of students _____
3. First year of operation as a middle school _____
4. School staff:

   Number of administrative personnel in addition to principal:

   Assistant principals _____

   Others (please list) _____

   _____

   Number of teachers _____

   Number of teacher aides _____

   Number of guidance counselors: _____ Full-time

   _____ Part-time

B. Please supply the following data regarding yourself (the principal):

1. Sex: Male; Female
2. Age
3. Number of years of teaching experience under an elementary school teaching certificate (or its equivalent)
4. Number of years of teaching experience under a secondary school teaching certificate (or its equivalent)
5. Number of years as an elementary school principal

6. Number of years as a high school principal
7. Number of years as a junior high school principal
8. Number of years as a middle school principal

1. How many hours per week is spent in the instruction of the following subjects?

(Mean of Sum)	Grades five or six						Grades seven or eight					
English Language Arts	0	1	2	3	4	5	0	1	2	3	4	5
Social Studies	0	1	2	3	4	5	0	1	2	3	4	5
Mathematics	0	1	2	3	4	5	0	1	2	3	4	5
Science	0	1	2	3	4	5	0	1	2	3	4	5
Physical Education	0	1	2	3	4	5	0	1	2	3	4	5
Unified Arts	0	1	2	3	4	5	0	1	2	3	4	5

Comments: _____

_____

2. The amount of time provided for instruction in basic learning skills:

a. Increases with each successive grade level. (1)
b. Decreases with each successive grade level. (2)
c. Remains constant over all grade levels. (3)

Comments: _____

_____

3. There are:

a. No multidisciplinary teaching teams. (0)
b. Multidisciplinary teaching teams only for grades five or six. (16)
c. Multidisciplinary teaching teams only for grades seven or eight. (32)
d. Multidisciplinary teaching teams at all grade levels. (64)

Comments: _____

_____

4. What per cent of the teaching staff is a part of a multidisciplinary team?

a. 0-25% (1/4) b. 26-50% (1/2) c. 50-75% (3/4) d. 76-100% (1)

Comments: _____

_____

5. What per cent of the student body receives instruction from a multidisciplinary team?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

6. What per cent of the school week is spent in multidisciplinary team instruction in grades five or six?

a. 0-25% (1) b. 26-50% (2) C. 51-75% (3) d. 76-100% (4)

Comments: _____

_____

7. What per cent of the school week is spent in multidisciplinary team instruction in grades seven or eight?

a. 0-25% (1) b. 26-50% (2) c. 51-75% (3) d. 76-100% (4)

Comments: _____

_____

8. The amount of time spent on multidisciplinary team instruction:

a. Decreases with each successive grade. (1)
b. Remains constant over all grade levels. (2)
c. Increases over each successive grade. (3)

Comments: _____

_____

9. We have:

a. No unidisciplinary teaching teams. (0)
b. Unidisciplinary teaching teams only for grade five. (16)

c. Unidisciplinary teaching teams only for grade six. (16)
d. Unidisciplinary teaching teams only for grade seven. (32)
e. Unidisciplinary teaching teams only for grade eight. (32)
f. Unidisciplinary teaching teams at all grade levels. (64)
g. More than one of the above. (Specify) (64)

Comments: _____

_____

10. What per cent of the teaching staff is a part of a unidisciplinary team?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

11. What per cent of the student body receives instruction from a unidisciplinary team?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

12. What per cent of the school week is spent in unidisciplinary team instruction in grades five or six?

a. 0-25% (1) b. 26-50% (2) c. 51-75% (3) d. 76-100% (4)

Comments: _____

_____

13. What per cent of the school week is spent in unidisciplinary team instruction in grades seven or eight?

a. 0-25% (1) b. 26-50% (2) c. 51-75% (3) d. 76-100% (4)

Comments: _____

_____

14. The amount of time spent on unidisciplinary team instruction:

a. Decreases with each successive grade. (1)
b. Remains constant over all grade levels. (2)
c. Increases over each successive grade. (3)

Comments: _____

_____

15. With regard to departmentalized scheduling, which of the following statements characterizes your school:

a. The school has no departmentalized program. (1)
b. The time length of a departmentalized class is fixed and is the same for all classes. (2)
c. The time length of a departmentalized class is determined by the nature of the class, but once determined it remains fixed for the duration of the program. For example: Homemaking may meet for two hours per day, three days a week for an entire day, while mathematics meets for 35 minutes daily. (3)
d. The time length of a departmentalized class is determined by the nature of the class, but the classes periodically and regularly vary in time length. (Example: Science classes might meet for 50 minutes per day, four days and meet for 75 minutes on the fifth day.) (4)
e. The time length of a departmentalized class is determined as the need arises. (Example: Bi-weekly staff meetings are held to construct time schedules.) (5)

Comments: _____

_____

16. Exploratory experiences such as music, art, and practical arts:

a. Are not provided in grade five. (0)
b. Are taught by a self-contained teacher. (4)
c. Are taught by subject matter specialists. (8)

Comments: _____

_____

17. Exploratory experiences such as music, art, and practical arts:

a. Are not provided in grade six. (0)
b. Are taught by a self-contained teacher. (4)
c. Are taught by subject matter specialists. (8)

Comments: _____

_____

18. What per cent of the fifth grade pupils receives weekly instruction in all exploratory experiences:

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

19. What per cent of the sixth grade pupils receives weekly instruction in all exploratory experiences?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

20. Exploratory experiences such as music, art and practical arts:

a. Are not provided in grade seven. (0)
b. Are taught by a self-contained teacher. (4)
c. Are taught by a subject matter specialist. (8)

Comments: _____

_____

21. Exploratory experiences such as music, art and practical arts:

a. Are not provided in grade eight. (0)
b. Are taught by a self-contained teacher. (4)
c. Are taught by a subject matter specialist. (8)

Comments: _____

_____

22. What per cent of the seventh grade pupils receives weekly instruction in all exploratory experiences?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

23. What per cent of the eighth grade pupils receives weekly instruction in all exploratory experiences?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

24. Circle the following exploratory courses in which pupils may receive instruction over the course of a semester or year:

For grade five	For grade six	
Art	Art	(Mean of Sum)
Foreign languages	Foreign languages	
Vocal music	Vocal music	
Unified arts	Unified arts	
Instrumental Music	Instrumental Music	
Dramatics	Dramatics	
Journalism	Journalism	
Typing	Typing	
Others (specify)	Others (specify)	

Comments: _____

_____

25. Circle the following exploratory courses in which pupils may receive instruction over the course of a semester or year:

For grade seven	For grade eight	
Art	Art	(Mean of Sum)
Foreign language	Foreign language	
Vocal music	Vocal music	
Practical arts	Practical arts	
Instrumental Music	Instrumental Music	

Dramatics	Dramatics
Journalism	Journalism
Typing	Typing
Others (specify)	Others (specify)

Comments: _____

_____

26. The amount of time provided for exploratory experiences:

a. Increases with each successive grade. (3)
b. Decreases with each successive grade. (2)
c. Remains constant over all grade levels. (1)

Comments: _____

_____

27. Independent study is provided:

a. Only for grade five. (4)
b. Only for grade six. (8)
c. For both grades five and six. (16)
d. For neither grade level. (0)

Comments: _____

_____

28. Independent study is provided:

a. Only for grade seven. (4)
b. Only for grade eight. (8)
c. For both grades seven and eight. (16)
d. For neither grade level. (0)

Comments: _____

_____

29. What per cent of the pupils in grade five participates in independent study programs?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

30. What per cent of the pupils in grade six participates in independent study programs?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

31. What per cent of the pupils in grade seven participates in independent study programs?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

32. What per cent of the pupils in grade eight participates in independent study programs?

a. 0-25% (1/4) b. 26-50% (1/2) c. 51-75% (3/4) d. 76-100% (1)

Comments: _____

_____

33. Independent study consumes what per cent of a pupil's instructional week?

a. 0-25% (1) b. 26-50% (2) c. 51-75% (3) d. 76-100% (4)

Comments: _____

_____

34. The amount of time provided for team teaching programs:

a. Decreases with each successive grade. (1)
b. Remains constant over the grade levels. (2)
c. Increases with each successive grade. (3)

Comments: _____

_____

35. School dances:

a. Are not held at this school. (1)
b. Are held only for lower grade levels.(state grades) (2)
c. Are held for pupils of all grade levels. (3)
d. Are held only for upper grade levels. (state grades) (4)

Comments: _____

_____

36. School dances:

a. Are not held at this school. (1)
b. Are held only during the regular school day.(4)
c. Are held during the regular school day and during the evening. (3)
d. Are held only during the evening. (2)

Comments: _____

_____

37. During the year the school holds:

a. No school dances. (4)
b. One to three school dances. (3)
c. Four to six school dances. (2)
d. More than six school dances. (1)

38. An activity club program:

a. Is not available at this school. (1)
b. Is available only for grades five and six. (2)
c. Is available only for grades six and seven. (3)
d. Is available for all grade levels. (4)

39. The amount of time per pupil allotted each month to activity clubs mentioned above is:

a. None (1)
b. Less than one hour (2)
c. Between one and three hours (3)
d. Between three and five hours (4)
d. More than five hours (5)

40. Activity clubs have an enrollment of:

a. 0 (No program is available at the school) (1)
b. Less than 25 per cent of the total pupil enrollment. (2)

c. Twenty-five to 50 per cent of the total pupil enrollment. (3)
d. Fifty to 75 per cent of the total pupil enrollment. (4)
e. More than 75 per cent of the total pupil enrollment. (5)

Comments: _____

_____

41. Activity clubs are sponsored by:

a. No staff members. (1)
b. Less than 25 per cent of the staff members. (2)
c. Twenty-five to 50 per cent of the staff members. (3)
d. Fifty to 75 per cent of the staff members. (4)
e. More than 75 per cent of the staff members. (5)

Comments: _____

_____

42. For fifth grade pupils, the maximum amount of time daily in which each child is involved in instruction with an individual teacher is:

a. Less than an hour (1)
b. One hour (2)
c. Two hours (3)
d. Three hours (4)
e. More than three hours (5)

Comments: _____

_____

43. For sixth grade pupils, the maximum amount of time daily in which each child is involved in instruction with an individual teacher is:

a. Less than an hour (1)
b. One hour (2)
c. Two hours (3)
d. Three hours (4)
e. More than three hours (5)

Comments: _____

_____

44. For seventh grade pupils, the maximum amount of time daily in which each child is involved with an individual teacher is:

a. Less than an hour (1)
b. One hour (2)
c. Two hours (3)
d. Three hours (4)
e. More than three hours (5)

Comments: _____

_____

45. For eighth grade pupils, the maximum amount of time daily in which each child is involved with an individual teacher is:

a. Less than an hour (1)
b. One hour (2)
c. Two hours (3)
d. Three hours (4)
e. More than three hours (5)

Comments: _____

_____

46. As a general policy, in the pupil-teacher relationship:

a. No formal provisions are made for the teacher to provide specified guidance services. (1)
b. Teachers are expected to provide guidance services for all of their pupils. (3)
c. Teachers are expected to provide guidance services to only a limited number of pupils. (2)

Comments: _____

_____

47. Instruction in sex education:

a. Is not provided. (1)
b. Is provided for grade five. (2)
c. Is provided for grade six. (3)
d. Is provided for grade seven. (4)
e. Is provided for grade eight. (5)
f. Is provided for all grade levels. (7)
g. More than one of the above. (specify) (6)

Comments: _____

_____

48. Instruction in sex education:

a. Is not provided. (1)
b. Is offered as a unit for less than two weeks. (2)
c. Is offered as a unit for more than two weeks. (3)
d. Is not offered as a unit but as an integrated part of a broader field of study. (4)

Comments: _____

_____

49. Instruction in sex education:

a. Is given by specially trained lay people such as physicians. (2)
b. Is given exclusively by the teaching staff. (3)
c. Is given by both the teaching staff and specially trained lay people such as physicians. (4)
d. Is not provided. (1)

Comments: _____

_____

50. The amount of unstructured time such as recesses and socialization periods provided daily for fifth graders is:

a. None (1)
b. Fifteen minutes (2)
c. Thirty minutes (3)
d. Sixty minutes (4)
e. More than sixty minutes (5)

Comments: _____

_____

51. A. The amount of unstructured time such as recesses and socialization periods provided daily for sixth graders is:

a. None (1)
b. Fifteen minutes (2)
c. Thirty minutes (3)

d. Sixty minutes (4)
e. More than sixty minutes (5)

Comments: _____

_____

52. B. The amount of unstructured time such as recesses and socialization periods provided daily for seventh graders is:

a. None (1)
b. Fifteen minutes (2)
c. Thirty minutes (3)
d. Sixty minutes (4)
e. More than sixty minutes (5)

Comments: _____

_____

53. B. The amount of unstructured time such as recesses and socialization periods provided daily for eighth graders is:

a. None (1)
b. Fifteen minutes (2)
c. Thirty minutes (3)
d. Sixty minutes (4)
e. More than sixty minutes (5)

Comments: _____

_____

54. What per cent of the parents of the student body attends regularly scheduled programs designed to integrate parent, pupil and school?

a. 0 (There is no regularly scheduled program of this nature) (1)
b. up to 25% (2)
c. 26 to 50% (3)
d. 51 to 75% (4)
e. 76 to 100% (5)

Comments: _____

_____

55. Conferences with parents to discuss their individual children:

a. Are scheduled as needed. (1)
b. Are regularly scheduled once a year. (2)
c. Are regularly scheduled twice a year. (3)
d. Are regularly scheduled three times a year. (4)
e. Are regularly scheduled more than three times a year. (5)

Comments: _____

_____

56. Which statement represents the instructional structure for grade five?

a. The structure is non-graded for those pupils who would traditionally be fifth graders. (4)
b. Grade five is self-contained, although certain exploratory experiences such as art and music are taught by subject matter specialists. (3)
c. Grade five is self-contained and the self-contained teacher is responsible for the total program. (2)
d. Grade five is departmentalized. (1)

Comments: _____

_____

57. Which statement represents the instructional structure for grade six?

a. The structure is non-graded for those pupils who would traditionally be sixth graders. (4)
b. Grade six is self-contained, although certain exploratory experiences such as art and music are taught by subject matter specialists. (3)
c. Grade six is self-contained and the self-contained teacher is responsible for the total program. (2)
d. Grade six is departmentalized. (1)

Comments: _____

_____

58. Which statement represents the instructional structure for grade seven?

a. The structure is non-graded for those pupils who would traditionally be seventh graders. (4)

b. Grade seven is self-contained, although certain exploratory experiences such as art and music are taught by subject matter specialists. (3)
c. Grade seven is departmentalized. (2)
d. Grade seven is self-contained and the self-contained teacher is responsible for the total program. (1)

Comments: _____

_____

59. Which statement represents the instructional structure for grade eight?

a. The structure is non-graded for those pupils who would traditionally be eighth graders. (4)
b. Grade eight is self-contained, although certain exploratory experiences such as art and music are taught by subject matter specialists. (3)
c. Grade eight is departmentalized. (2)
d. Grade eight is self-contained and the self-contained teacher is responsible for the total program. (1)

Comments: _____

_____

60. Which statement represents the grouping practice of the school for grade five?

a. The structure is non-graded for those pupils who would traditionally be fifth graders. (3)
b. Pupils are randomly assigned to groups. (2)
c. Pupils are assigned to groups according to social or ability factors. (1)

Comments: _____

_____

61. Which statement represents the grouping practice of the school for grade six?

a. The structure is non-graded for those pupils who would traditionally be sixth graders. (3)
b. Pupils are randomly assigned to groups. (2)
c. Pupils are assigned to groups according to social or ability factors. (1)

Comments: _____

_____

62. Which statement represents the grouping practice of the school for grade seven?

a. The structure is non-graded for those pupils who would traditionally be seventh graders. (3)
b. Pupils are randomly assigned to groups. (2)
c. Pupils are assigned to groups according to social or ability factors. (1)

Comments: _____

_____

63. Which statement represents the grouping practice of the school for grade eight?

a. The structure is non-graded for those pupils who would traditionally be eighth graders. (3)
b. Pupils are randomly assigned to groups. (2)
c. Pupils are assigned to groups according to social or ability factors. (1)

Comments: _____

_____

64. The orientation program for elementary school classes provides for:

a. No pupil visitations to the middle school. (1)
b. A visit to the school for one-half day. (2)
c. A visit to the school for one full day. (3)
d. Multiple visits to the school. (4)

Comments: _____

_____

65. For parents of incoming pupils:

a. No orientation program is provided. (1)
b. An orientation program is provided after the opening of school. (2)
c. An orientation program is provided prior to the opening of school. (3)

Comments: _____

_____

66. The orientation program for out-going pupils provides for:

a. No visitation to the secondary schools. (1)
b. A half-day visitation to the secondary schools. (2)
c. A full day visitation to the secondary schools. (3)
d. Multiple visits to the secondary schools. (4)

Comments: _____

_____

67. The orientation program for out-going pupils includes:

a. No formal guidance sessions. (1)
b. Large group guidance sessions. (2)
c. Small group guidance sessions. (3)
d. Teacher initiated individual conference sessions. (4)
e. More than one of the above or other activities. (specify) (5)

Comments: _____

_____

68. The orientation program for out-going pupils provides:

a. No formal contact with parents. (1)
b. Large group sessions for parents. (2)
c. Small group sessions for parents. (3)
d. Staff initiated individual conferences with parents. (4)
e. More than one of above (specify) (5)

Comments: _____

_____

69. A program of interscholastic athletics:

a. Is not available. (4)
b. Is available only for pupils in the upper grades. (specify grade levels) (3)
c. Is available for pupils in all grade levels. (2)
d. Is available only for pupils in the lower grades. (specify grade levels) (1)

Comments: _____

_____

70. How many interscholastic sports are generally available at this school?

a. 0 (7) b. 1 (6) c. 2 (5) d. 3 (4) e. 4 (3) f. 5 (2)

g. More than 5 (1)

Comments: _____

_____

71. What per cent of the boys in this school participates in interscholastic sports?

a. 0-25% (4) b. 26-50% (3) c. 51-76% (2) d. 76-100% (1)

Comments: _____

_____

72. A program of intramural athletics:

a. Is not available. (1)
b. Is available for pupils in grade five. (2)
c. Is available for pupils in grade six. (3)
d. Is available for pupils in grade seven. (4)
e. Is available for pupils in grade eight. (5)
f. Is available for pupils in all grade levels.(6)
g. More than one of the above (specify) (6)

Comments: _____

_____

73. How many intramural sports are available at this school?

a. 0 (1) b. 1 (2) c. 2 (3) d. 3 (4) e. 4 (5) f. 5 (6)

g. More than 5 (7)

Comments: _____

_____

74. What per cent of the boys and girls participates in intramural athletics?

Boys		Girls	
a. 0-25%	(1)	a. 0-25%	(1)
b. 26-50%	(2)	b. 26-50%	(2)
c. 51-75%	(3)	c. 51-75%	(3)
d. 76-100%	(4)	d. 76-100%	(4)

(Sum of Column Values)

Comments: _____

_____

75. A program of physical education:

a. Is not provided in this school. (1)
b. Is provided for pupils in grade five. (2)
c. Is provided for pupils in grade six. (3)
d. Is provided for pupils in all grade levels. (5)
e. More than one of the above (specify) (4)

Comments: _____

_____

76. A program of physical education:

a. Is not provided in this school. (1)
b. Is provided for pupils in grade seven. (2)
c. Is provided for pupils in grade eight. (3)
d. Is provided for pupils in all grade levels. (5)
e. More than one of the above (specify) (4)

Comments: _____

_____

77. For pupils in grade five, the amount of time spent weekly in physical education is:

a. 0 (1)
b. One hour (2)
c. Two hours (3)
d. Three hours (4)
e. Four hours(5)
f. More than four hours (6)

Comments: _____

_____

78. For pupils in grade six, the amount of time spent weekly in physical education is:

a. 0 (1)
b. One hour (2)
c. Two hours (3)
d. Three hours (4)
e. Four hours (5)
f. More than four hours (6)

Comments: _____

_____

79. For pupils in grade seven, the amount of time spent weekly in physical education is:

a. 0 (1)
b. One hour (2)
c. Two hours (3)
d. Three hours (4)
e. Four hours (5)
f. More than four hours (6)

Comments: _____

_____

80. For pupils in grade eight, the amount of time spent weekly in physical education is:

a. 0 (1)
b. One hour (2)
c. Two hours (3)
d. Three hours (4)
e. Four hours (5)
f. More than four hours (6)

Comments: _____

_____

PLEASE ATTACH ANY PRINTED MATERIAL AVAILABLE ON YOUR SCHOOL AND ITS PROGRAMS, INCLUDING FLOOR PLANS, NEWSPAPER AND MAGAZINE ARTICLES, ETC.

APPENDIX B

DEMOGRAPHICAL DATA ON MICHIGAN'S MIDDLE SCHOOLS

TABLE 1

MIDDLE SCHOOLS OPERATING IN MICHIGAN
DURING 1968-69 SCHOOL YEAR

District	School	Grade Range
Algonac	Junior High School	5-8
Bad Axe	Intermediate School	5-8
Battle Creek (Lakeview)	Highland School	6-8
Battle Creek (Lakeview)	Woodrow School	6-8
Battle Creek (Springfield)	Springfield School	6-8
Bay City	Kalb School	6-8
Bay City	Lindsay School	5-8
Bay City	MacGregor School	5-8
Bay City	McAlear-Sawdon School	6-8
Bay City	Washington School	6-8
Big Rapids	Junior High School	6-8
Birch Run	Intermediate School	5-8
Brighton	Intermediate School	5-8
Bronson	Junior High School	6-8
Cedar Springs	Junior High School	6-8
Charlotte	Junior High School	6-8
Chelsea	Harrison Street School	6-8
Chesaning	Junior High School	6-8
Clio	Carter School	6-8
Coleman	Junior High School	5-8
Coloma	Junior High School	6-8
Coopersville	Junior High School	4-8
Davison	Junior High School	6-8
DeWitt	Furstenau School	5-8
Dexter	Wiley Intermediate School	5-8
Durand	Lucas School	6-8
Eaton Rapids	Junior High School	6-8
Frankenmuth	Main Street Middle School	5-8
Garden City	Burger School	5-9
Garden City	Cambridge School	6-9
Garden City	Radcliff School	5-9
Garden City	Vogel School	5-9
Gladwin	Intermediate School	4-8
Grand Blanc	Central School	6-8
Grand Blanc	McGrath School	6-8
Grand Rapids (Kentwood)	Hamilton School	5-7
Grand Rapids (Northview)	Junior High School	6-8

District	Schools	Grade Range
Grant	Junior High School	5-8
Greenville	Junior High School	6-8
Haslett	Junior High School	6-8
Highland Park	Ferris School	6-8
Highland Park	Ford School	6-8
Hillsdale	Davis Intermediate School	6-8
Howard City (Tri-County)	Junior High School	4-8
Ida	Intermediate School	6-8
Imlay City	Junior High School	5-8
Ishpeming	Phelps School	6-8
Jackson (East Jackson)	Junior High School	6-8
Lake Odessa (Lakewood)	Junior High School	6-8
Leslie	Junior High School	5-8
Linden	Junior High School	6-8
Lowell	Junior High School	6-8
Marysville	Junior High School	6-8
Michigan Center	Junior High School	5-8
Monroe (Jefferson)	Junior High School	5-9
Montague	Chisholm School	5-8
Mt. Clemens (Chippewa Valley)	Clinton Valley School	6-8
Muskegon (Mona Shores)	Maple Grove School	6-8
Muskegon (Orchard View)	Middle School	6-8
New Baltimore (Anchor Bay)	Junior High School	6-8
Newaygo	Junior High School	4-8
Niles (Brandywine)	Junior High School	6-8
North Adams	Junior High School	6-8
North Branch	Junior High School	6-8
Northville	Junior High School	6-8
Norway (Norway-Vulcan)	Vulcan School	5-8
Okemos	Central School	6-8
Oscoda	Richardson School	6-8
Otisville (Lakeville)	Otisville School	4-8
Parchment	Intermediate School	5-8
Parma (Western)	Junior High School	6-8
Plymouth	West School	6-8
Port Hope	Junior High School	6-8
Port Huron	Chippewa School	6-8
Port Huron	Fort Gratiot School	6-8

District	School	Grade Range
Port Huron	Garfield School	6-8
Port Huron	Howard School	6-8
Port Huron	Kimball School	6-8
Port Huron	Washington School	6-8
Quincy	Junior High School	5-8
Richland (Gull Lake)	Richland School	4-7
Rogers City	Junior High School	6-8
Saginaw (Carrollton)	Junior High School	4-8
Saginaw (Saginaw Twp.)	Chippewa School	5-8
Saginaw (Saginaw Twp.)	Mackinaw School	5-8
Saginaw (Saginaw Twp.)	Ottawa School	5-8
St. Clair (East China)	Marine City School	6-8
St. Clair (East China)	St. Clair School	4-8
Sandusky	Intermediate School	5-8
Sanford (Meridian)	Junior High School	6-8
Saranac	Junior High School	5-7
South Lyon	Junior High School	6-8
Sparta	Junior High School	6-8
Stanton (Central Montcalm)	Sheridan School	6-8
Stanton (Central Montcalm)	Stanton School	6-8
Sturgis	Central School	6-8
Zeeland	Middle School	6-8

TOTAL SCHOOLS BY GRADE RANGE

Range	Number
4-7	1
4-8	7
5-7	2
5-8	22
5-9	4
6-8	60
6-9	1
	97

TABLE 2

DATA REGARDING MICHIGAN'S SCHOOLS'
(Secondary-oriented Principals)

Name of School	No. of Students	First Year of Operation	Other Administrative Personnel	Number of Teachers	Number of Teacher Aids	Number of Counselors
Anchor Bay	550	1966	1	23	2	2
Arthur Lucas	800	1965	1	30	0	1
Bad Axe	449	1964	0	21	0	0
Big Rapids	550	1963	0	20	1/2	1
Bronson	450	1968	0	18	1	0
Cedar Rapids	505	-	0	21	3	3/4
Central	866	1966	1	33	1	1
Central Intermediate	800	1962	0	37	0	1
Chippeaw	700	1962	0	35	0	2
Cooke	746	-	1	35	1	1 full 1 part
Davis	588	1969	0	29	1	1 part
Dwight Beach	595	1968	0	35	0	1 full 1 part
East Jackson	436	1967	0	20	0	1 part
Ft. Gratiot	1,000	1963	0	43	0	2
Grant	385	-	0	17	5	1 part
Highland	700	1961	1	36	0	1 full 1/2 part
Ida	490	1965	0	20	0	1
Kinaua	786	1960	1	44	0	2 full 2 part
Lake Odessa	378	1964	0	17	2	0
Linsday	550	1950	0	24	2	0
Lowell	628	1963	0	28	0	1 part
Mackinaw	1,047	1959	1	45	0	0
Marysville	602	1967	0	27	0	1
Orchard View	804	1965	0	32	0	1
Quincy	410	1969	0	15	2	0
Rogus City	308	1964	0	16	0	0
Ruth Fox	461	1967	0	19	0	1
South Lyon	750	1967	0	19	0	1
Springfield	335	1963	0	24	0	1
Vulcan-Norway	281	1967	0	13	2	0
Washington Intermediate	906	1960	1	-	-	-
West Junior High	957	1967	1	43	1 1/2	2

TABLE 3

DATA REGARDING MICHIGAN'S MIDDLE SCHOOLS' SECONDARY-ORIENTED PRINCIPALS

Name of School	Sex	Age	Years Teaching Experience	Years as Secondary School Principal	Years as Middle School Principal
Anchor Bay	Male	36	12	-	4
Arthur Lucas	"	50	16	-	5
Bad Axe	"	29	6	-	1
Big Rapids	"	41	12	-	6
Bronson	"	31	8	3	1
Cedar Rapids	"	41	2	14	-
Central	"	36	8	-	4
Central Intermediate	"	58	33	-	8
Chippeaw	"	43	10	-	7
Cooke	"	41	13	-	2
Davis	"	40	15	-	1
Dwight Beach	"	41	18	7	2
East Jackson	"	36	8 1/2	4	3
Ft. Gratiot	"	40	8	-	1
Grant	"	27	4	2	-
Highland	"	43	20	6	9
Ida	"	45	15	-	5
Kinawa	"	41	-	19	10
Lake Odessa	"	46	12	-	6
Linsday	"	50	24	-	4
Lowell	"	41	13	-	4
Mackinaw	"	34	8	-	3
Marysville	"	51	26	-	3
Orchard View	"	36	6	-	4
Quincy	"	30	4	1	1
Rogus City	"	47	9	-	-
Ruth Fox	"	33	9	-	1
South Lyon	"	33	12	-	5
Springfield	"	31	2	1	3
Vulcan-Norway	"	44	20	2	3
Washington Intermediate	"	53	10	-	5
West Junior High	"	48	10	3	3

TABLE 4

DATA REGARDING MICHIGAN'S SCHOOLS'
(Elementary-oriented Principals)

Name of School	No. of Students	First Year of Operations	No. of Administrative Personnel	Number of Teachers	Number of Teachers Aids	Number of Counselors
Alaw Kalb	650	1955	0	28	2	0
Brandywine	628	-	1 part	32	0	2
Charlotte	876	1965	1/2	31 1/2	0	1
Coloma	616	1967	0	23	0	1
Henry Ford	730	1965	1	30	0	2 full 1 part
Hills & Dales	600	1965	1	27	6	2 full 2 part
Howard D. Crull	500	1966	0	27	2	2 part
Kimball	504	1964	0	27	0	2
MacGreger	598	1950	0	27	0	2 part
Mcaliar-Sawden	605	1962	0	27	0	2 part
Mackinaw	1,050	1960	1	48	0	0
Nellie B. Chisholm	482	1960	0	23	2	0
Parchment	875	1958	1/2	42	0	1
Perry	1,290	1963	2	62	0	3
Sandusky	612	1968	0	23	2	0

TABLE 5

DATA REGARDING MICHIGAN'S MIDDLE SCHOOLS' ELEMENTARY-ORIENTED PRINCIPALS

Name of School	Sex	Age	Years of Teaching Experience	Years as Secondary School Principal	Years as Middle School Principal
Alaw Kalb	Male	55	10	-	15
Brandywine	"	39	18	0	8
Charlotte	"	40	4	8	2
Coloma	"	40	15	0	5
Henry Ford	"	36	6	0	1
Hills and Dales	"	35	5	4	3
Howard D. Crull	"	44	14	0	7
Kimball	"	36	5	0	1
MacGreger	"	53	6	4	10
Mcaliar-Sawden	"	52	10	3	9
Mackinaw	"	31	2	-	3
Nellie B. Chisholm	"	52	31	10	5
Parchment	"	40	4	1	9
Perry	"	58	-	9	7
Sandusky	"	31	5	5	5

APPENDIX C

HOTELING'S TRANSFORMATIONS ON THE DEPENDENT VARIABLES OF EACH GENERAL HYPOTHESIS

HOTELING'S TRANSFORMATIONS ON THE DEPENDENT VARIABLES
OF GENERAL HYPOTHESIS 1

F-Ratio for multivariate test of equality of mean vectors = 0.6770

D.F. = 19 and 22.0000 P less than 0.8031

Variable	Between Mean Square	Univariate F	P Less Than	Step Down F	P Less Than
1	0.1167	0.3769	0.5428	0.3769	0.5428
2	0.2381	1.2422	0.2717	1.2229	0.2756
3	7.7357	0.0200	0.8882	0.0217	0.8838
4	0.0857	0.0901	0.7656	0.0244	0.8768
5	0.1524	0.1687	0.6835	0.9557	0.3348
6	0.0214	0.0657	0.7991	0.0004	0.9848
7	1.6214	2.9394	0.0942	2.8753	0.0991
8	0.4024	0.4485	0.5069	1.9814	0.1686
9	0.4667	0.3067	0.5829	0.5059	0.4821
10	2.1429	7.9121	0.0076	3.7688	0.0614
11	0.0381	0.1447	0.7057	0.3235	0.5738
12	0.0214	0.0040	0.9497	0.0061	0.9385
13	4.2000	0.9666	0.3315	0.7315	0.3997
14	0.9524	0.2495	0.6202	0.7084	0.4074
15	0.1929	0.2126	0.6473	0.0215	0.8847
16	1.3714	0.8501	0.3621	0.5298	0.4735
17	0.5357	0.6108	0.4391	0.6445	0.4300
18	0.2381	0.0176	0.8951	0.0008	0.9774
19	0.1524	0.0040	0.9498	0.2612	0.6144

Degrees of freedom for Hypothesis = 1
Degrees of freedom for error = 40

HOTELING'S TRANSFORMATIONS ON THE DEPENDENT VARIABLES
OF GENERAL HYPOTHESIS 2

F-Ratio for multivariate test of equality of mean vectors = 0.5394

D.F. = 7 and 35.000 P less than 0.7987

Variable	Between Mean Square	Univariate F	P Less Than	Step Down F	P Less Than
1	0.6083	0.8864	0.3520	0.8864	0.3520
2	0.1052	0.2455	0.6230	1.0659	0.3081
3	0.7215	1.1491	0.2901	1.2797	0.2649
4	0.1551	0.0826	0.7753	0.7865	0.3808
5	0.2367	0.1320	0.7183	0.0031	0.9563
6	0.1675	0.1052	0.7474	0.0685	0.7951
7	0.0773	0.0387	0.8452	0.0000	0.9985

Degrees of freedom for Hypothesis = 1
Degrees of freedom for error = 41

HOTELING'S TRANSFORMATIONS ON THE DEPENDENT VARIABLES
OF GENERAL HYPOTHESIS 3

F-Ratio for multivariate test of equality of mean vectors = 1.8263

D.F. = 12 and 30.0000 P less than 0.0891

Variable	Between Mean Square	Univariate F	P Less Than	Step Down F	P Less Than
1	6.2597	3.2280	0.0798	3.2280	0.0798
2	4.3470	3.8108	0.0578	1.9464	0.1707
3	4.3470	3.8108	0.0578	0.5155	0.4771
4	0.0153	0.0219	0.8832	0.0103	0.9196
5	3.3494	0.4501	0.5061	0.7772	0.3837
6	6.9339	3.9410	0.0539	4.3503	0.0442
7	0.0002	0.0001	0.9909	7.1421	0.0114
8	0.3006	0.1750	0.6780	0.0013	0.9710
9	0.0101	0.0060	0.9387	0.1100	0.7423
10	0.4010	0.2335	0.6315	1.5507	0.2221
11	0.0060	0.0041	0.9492	0.1471	0.7039
12	0.0501	0.0602	0.8074	1.0911	0.3046

Degrees of freedom for Hypothesis = 1
Degrees of freedom for error = 41

HOTELING'S TRANSFORMATIONS ON THE DEPENDENT VARIABLES
OF GENERAL HYPOTHESIS 4

F-Ratio for multivariate test of equality of mean vectors = 1.4847

D.F. = 11 and 31.0000 P less than 0.1873

Variable	Between Mean Square	Univariate F	P Less Than	Step Down F	P Less Than
1	0.9169	0.8364	0.3658	0.8364	0.3658
2	0.0861	0.2998	0.5870	0.0322	0.8587
3	0.0038	0.0140	0.9064	1.9794	0.1674
4	0.6700	2.4754	0.1234	1.5671	0.2183
5	0.4723	1.3266	0.2561	0.0948	0.7599
6	0.5157	1.5628	0.2184	0.4060	0.5281
7	1.5075	2.0974	0.1552	0.3414	0.5628
8	5.4385	10.0279	0.0030	4.4581	0.0422
9	0.2519	0.3667	0.5482	0.1383	0.7124
10	7.9008	4.9180	0.0322	3.5624	0.0682
11	0.0215	0.0110	0.9171	1.7809	0.1918

Degrees of freedom for Hypothesis = 1
Degrees of freedom for error = 41

HOTELING'S TRANSFORMATIONS ON THE DEPENDENT VARIABLES
OF GENERAL HYPOTHESIS 5

F-Ratio for multivariate test of equality of mean vectors = 1.6107

D.F. = 11 and 26.0000 P less than 0.1522

Variable	Between Mean Square	Univariate F	P Less Than	Step Down F	P Less Than
1	0.1504	0.9972	0.3247	0.9972	0.3247
2	1.4921	0.8283	0.3689	1.8081	0.1874
3	0.1820	0.2784	0.6010	0.6856	0.4135
4	3.4647	0.5825	0.4503	0.5350	0.4697
5	0.2947	0.0542	0.8172	0.5173	0.4772
6	0.7955	0.5997	0.4438	2.3013	0.1394
7	1.0962	5.9666	0.0197	1.2544	0.2719
8	1.1789	0.8861	0.3529	0.0969	0.7579
9	0.9398	0.5599	0.4592	2.6264	0.1168
10	0.0060	0.0038	0.9514	1.0327	0.3189
11	0.0635	0.0418	0.8393	1.8166	0.1899

Degrees of freedom for Hypothesis = 1
Degrees of freedom for error = 41