A COMPARATIVE STUDY OF MIDDLE SCHOOL AND JUNIOR HIGH SCHOOL STUDENTS IN TERMS OF SOCIO-EMOTIONAL PROBLEMS, SELF-CONCEPT OF ABILITY TO LEARN, CREATIVE THINKING ABILITY, AND PHYSICAL FITNESS AND HEALTH

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This is to certify that the

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ABSTRACT

A COMPARATIVE STUDY OF MIDDLE SCHOOL AND JUNIOR HIGH SCHOOL STUDENTS IN TERMS OF SOCIO-EMOTIONAL PROBLEMS, SELF-CONCEPT OF ABILITY TO LEARN, CREATIVE THINKING ABILITY, AND PHYSICAL FITNESS AND HEALTH

By

Marie-Therese Elie

There is a current trend to reorganize education for transescents by providing them with a flexible and sequential program of instruction adapted to their needs. The emerging transescent is characterized by an increased awareness of his self, his physical, mental, and socio-emotional idiosyncrasies as he progresses from childhood to adolescence. He needs a learning environment conducive to normal and healthy growth and development.

The middle school concept is posited on the notion that an educational organization and curriculum design especially planned for this age group can better provide for their special needs and interests than the junior high school institution. To implement this goal, evaluation of the middle school and its effect on the behavior of its students is necessary to determine if it alleviates any of the shortcomings of junior high school plans.

The purpose of this study was to compare the group behavior of students attending the middle school and the junior high school on the basis of socio-emotional problems, self-concept of ability to learn, creative thinking ability, and physical fitness and health.

The data required for testing the hypothesis of this investigation were collected by means of four instruments: The Mooney Problem Checklist: Junior High School Form; The Michigan General Self-Concept of Ability Scale; The Torrance Tests of Creative Thinking Ability; and the AAHPER Youth Fitness Inventory. A random sample of 108 seventh and eighth grade boys and girls was selected for testing.

The analysis of variance of repeated measures procedures were applied to the data to evaluate if significant differences would be found between the groups. The .05 level of statistical significance was established as the minimum criterion level for accepting mean differences as being significant. For the interaction effects of treatments, schools, and grades, and .01 level was used to insure against Type 1 error whenever analysis of repeated measures design was used. Multiple "t" tests method at the .01 criterion level was used for post-hoc comparisons of group differences when significant differences were found.

Results

A significant difference was found between the middle school and the junior high school students on the measures

of socio-emotional problems and creative thinking ability. No significant differences were found between the groups on the measures of self-concept of ability to learn, and physical fitness and health.

There is a significant difference between the two groups in terms of awareness of socio-emotional problems. Middle school students reported more concerns than junior high school students on the problem areas of "school," "home and family," "boy-girl relations," and "relations to people in general." No statistical differences were found between the groups in terms of problems related to "health and physical development," "money, work and future," and "self-centered concerns."

There is no significant difference between the groups in terms of their perceived self-concept of ability to learn.

There is a significant difference between the groups in terms of creative thinking ability. Middle school students, regardless of grade, scored significantly higher than junior high school students on measures of "originality" and "flexibility." No significant difference was found on the measure of "fluency."

There is no significant difference between the groups on standard measures of physical fitness and health.

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DEDICATION

To my husband, Jean-Claude, whose love, encouragement and generosity made this realization possible.

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CHAPTER I

INTRODUCTION

Nature of the Problem

The problem of school organization and its effects on the teaching-learning process have been of concern to educators for almost 100 years. The early twentieth century witnessed the reorganization of secondary education and the establishment of the junior high school. This new unit was to serve as a transitional school between childhood and adolescence.

A study released by the National Association of Secondary School Principals in 1966 reports that 67 per cent of principals are part of a 6-3-3 organizational system, compared to 5 per cent which are part of a 5-3-4 educational system, 20 per cent who belong to a 6-2-4 system and 8 per cent who belong to the other remaining grades' structure.[1]

The NASSP study shows the widespread acceptance of the junior high school institution. There are, however, strong and growing expressions of dissatisfaction concerning

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[1]Committee on Junior High School Education; National Association of Secondary School Principals, "Recommended Grades or Years in Junior High or Middle Schools," Bulletin of the National Association of Secondary School Principals, 57 (February, 1967), pp. 68-70.

the efficacy and the effectiveness of its present organizational pattern and purposes. One such criticism was expressed by Wattenberg when he commented:

> The existence of the junior high school provides an opportunity to cope with a set of problems for which we otherwise would not have suitable administrative structures. But, and this is most important "but," much too little has been done to make use of the opportunity.[2]

From a survey of professional literature, it is argued that throughout its history, the junior high school philosophy and organization have indicated a tendency to pattern the philosophy and organization of the senior high school. With its instructional programs and methods, its sophisticated social activities, and its interscholastics competition, it does not provide for the needs and interests of pre-adolescents in their special period of growth and development. In fact, Moss expressed the opinion that such excesses were salient enough "to cause educators to question whether existing junior high schools were meeting their stated objectives."[3]

Dr. William Alexander makes the point when he states:

> There is a major question as to whether the junior high school as it now exists should defend its existence on a traditional basis. Indeed, we doubt whether any institution can have real purpose and vitality if its role is subordinated either to the separate institution

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[2]William W. Wattenberg, "The Junior High School - A Psychologist's View," The Bulletin of the National Association of Secondary School Principals, 49 (April, 1965), p. 36.

[3]Theodore C. Moss, "The Middle School Comes - and Takes Another Grade or Two," The National Elementary School Principals, 48 (February, 1969), p. 39.

it bridges or to the one for which it serves as a preparatory function.[4]

In light of the current situation, the focus of attention has been oriented to the development of a new educational unit called the middle school. It is broadly defined as a new administrative organization for transescents, encompassing what are traditionally grades 5, 6, 7 and 8, or grades 6, 7 and 8. Its educational program is especially designed to meet the needs of this age group. To this effect, Eichhorn called attention to the fact that the middle school conceptual rationale and functional model are based on the physical, socio-psychological, emotional and intellectual needs of today's in-betweeners.[5] Translated into operational terms by Atkins, the middle school is appropriately defined as being "characterized organizationally be flexibility, environmentally by sensitivity to changing needs, and instructionally by individualization."[6]

Thus, rather than merely a change in the organizational grade structure, the true middle school presents a new philosophical outlook based on the development of each pupil's experience. It incorporates within its model an attitude of

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[4]William B. Alexander, "The Junior High School: A Changing View," Bulletin of the National Association of Secondary School Principals, 48 (March, 1964), p. 16.

[5]Donald H. Eichhorn, The Middle School (New York: The Center for Applied Research in Education, Inc., 1966), p. 99.

[6]Neil P. Atkins, "Rethinking Education in the Middle," Theory Into Practice, VII, 3 (June, 1968), pp. 118-19.

continuous search for methods of education to meet the needs of transescents, for flexibility of situation and sequential skills maturation. At best, it is conceived as an attempt of planned organizational changes geared toward the attainment of improved performance in dealing with today's pre-adolescents and early adolescents. And as Jones suggests: "The final objective of planned organizational change is to equip an organization to cope more effectively with demands placed upon its system."[7]

Available surveys from the Educational Service of the NEA, Murphy, Brod, Cuff, and Alexander[8] suggest that in the last five years the acceptance of the middle school organization is now approaching the dimensions of a movement. But while the trend toward its acceptance is gaining impetus, a major question of interest is to know if the new institution provides in reality for the purposes for which it was intended.

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[7]Garth N. Jones, Planned Organizational Change: A Study in Change Dynamics (London: Routledge & Kegan Paul, 1968), p. 138.

[8]"Middle Schools," Educational Research Service Circular No. 3, 1965 (Washington, D. C.: National Education Association, May, 1965); Judith Murphy, Middle Schools (New York: Educational Facilities Laboratory, 1965); William A. Cuff, "Middle School on the March," National Association of Secondary School Principals, Bulletin 51 (February, 1967), pp. 83-86; Pearl Brod, "The Middle School: Trends Toward Its Adoption," Clearing House, 40 (Febraury, 1966), pp. 331-333; William M. Alexander, et al., The Emergent Middle School (New York: Holt, Rineahrt and Winston, Inc., 1968), p. 9.

Hines and Alexander[9] and Eichhorn[10] pointed out the necessity of an assessment on how the middle school can offer better opportunities for children in this transition period. They suggest that evaluation to this effect can be determined by applying a test of validity to the model. Therefore, research involving transescents in a middle school as compared with similar students in a junior high school seems to be indicated to ascertain the value of this educational organization plan.

The major principle of educational management is that the learner's growth and development is the fundamental objective of the school. All other aspects of the institution, its facilities and its instructional activities are contributory in character. Any type of organization and its constructive significance is valid insofar as it is aimed to achieve its stated objectives. As suggested by Flanagan, "An important current development in evaluation is to identify objectives very precisely and to assess accurately the extent to which they have been achieved.[11]

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[9]Vynce A. Hines and William M. Alexander, "Evaluating the Middle School," The National Elementary Principal, 68 (February, 1969), pp. 32-36.

[10]Eichhorn, op. cit., p. 3.

[11]John C. Flanagan, "The Uses of Educational Evaluation in the Development of Programs, Courses, Instructional Materials and Equipment, Instructional and Learning Procedures and Administration Arrangements," in Educational Evaluation: New Roles, New Means, ed. by Ralph W. Tyler, The Sixty-Eight Yearbook of the National Society for the Study of Education, Part II, p. 222.

Statement of the Problem

This study is an attempt to compare two administrative organizations, the middle school and the junior high school, and assess their impact on the behavior of their students, as measured by socio-emotional, self-concept of ability to learn, creative thinking ability, and physical fitness and health criteria.

Research Objectives

Specifically, this investigation was made to test the following sub-problems, which are stated in the form of questions:

(1) Is there a significant difference between middle school and junior high school students in terms of socio-emotional problems?

(2) Is there a significant difference between middle school and junior high school students in terms of self-concept of ability to learn?

(3) Is there a significant difference between middle school and junior high school students on selected measures of creative thinking tasks?

(4) Is there a significant difference between the middle school and junior high school students on standard measures of physical fitness and health?

Operational hypotheses in relation with these sub-problems are presented in Chapter III.

Significance of the Problem

Organizational planning for instructional purposes is a major subject of interest to educational administrators. Considered to be the first step in the process of administration, Griffith et al. commented that:

> Failure to consider the function of organization in education has resulted in the development of school systems which have been organized seemingly without purposes.[12]

In the school context and its environment, this concern seems to have been overlooked by many researchers and education theorists. In most textbooks and articles on educational administration, the authors summarize their thought by the catch-all phrase which states that the primary concern of administration should be curriculum improvement. However, they seldom refer to available research or state any model or reference to support their claims. Lacking these, administrators who are responsible to design an organization have only the classical theories or organization and education as a point of reference.

Campbell, Cunningham and McPhee believe that the arguments of particular types of school organization are largely beside the point. They state:

> More important to us, is what programs go on the two ways of organizing the schools. . . .We know of no

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[12]Daniel E. Griffiths, et al., Organizing Schools for Effective Education (Illinois: The Interstate Printers and Publishers Press, Inc., 1964), p. 3.

> administrative organization which, per se, we would defend above all other forms of organization.[13]

Such viewpoints are defensible as long as it is possible to assume that school administrators have a rationale for making decisions about the multitude of facets that shape the instructional programs. According to Sanders:

> Besieged from every quarter with proposals for reorganization. . .in the midst of so many alternatives, what the administrator needs most is not another organizational scheme but a rationale for making decisions about those that are available.[14]

In spite of these remarks, little has been done by way of research on organizational design of school systems and it is difficult to differentiate between organizational patterns as to their effectiveness. Considering this issue, Miles submits a thoughtful explanation. According to him, while it is difficult to technically evaluate school products, it is not impossible. And the fact that it is barely done might be an indicator "of organizational defense against the conflicts and problems that would inevitably be laid bare if systematic evaluation were to be carried out."[15]

There is some evidence to suggest that much of the confusion surrounding the functional relationship between

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[13]Roald F. Campbell, L. L. Cunningham, and R. M. McPhee, The Organization and Control of American Schools (Ohio: Charles E. Merrill Books, Inc., 1965), p. 5.

[14]David C. Sanders, "School Organization: How Do You Decide?" The National Elementary School Principal, 42 (September, 1962), p. 25.

[15]Mathiew B. Miles, ed., Innovations in Education (New York: Teachers College Press, Columbia University, 1964), pp. 657-59.

educational organization and the product evaluation of its effectiveness is also a function of the literature from which the arguments are taken. For example, Heathers noted that questions on optimal patterns of school organization have not yet been answered. Further, he added that implementing the structural features of a plan is not likely to affect the instructional outcomes until the content and methods of instruction have been adapted to the purpose of a plan. At the most, he believes: "An organization plan can provide better opportunities for employing curricula and teachers to good effect."[16]

It is recognized from this approach that an organizational scheme is not a panacea for a good instructional program, but it should, however, be able to suggest ways about how to design an educational structure to serve given educational ends and to optimize given organizational criteria. This predicament implies that we need to know the dimensions which define an organization and its effectiveness.

Considering the strains faced by educational administrators, there is a relatively new emphasis to consider school systems as legitimate complex organizations, hence subject to the concepts and models found in the area of

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[16]Glen Heathers, "School Organization, Non-Grading, Dual Progress and Team Teaching," The Changing American School in The Sixty-Fifth Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1966), p. 127.

organizational literature.[17] Yet, as noted by Bidwell, "Few students of organization have turned their attention to schools and few students of schools have been sensitive to their organizational attributes."[18]

Examining schools as organizations has come from the conceptualization that the problems which they encounter are, to a large extent, organizational in character. Flizak wrote, commenting upon this phenomenon:

> An organization, its goals and structure, is believed to have a significant influence upon its members and their life. This belief has been particularly espoused by people in industry, business, government and the military as judged by the large number of publications dealing with questions related to organizations, their structure, dynamics, and influence upon their participants.[19]

This argument might lead one to assume a vast array of similarities between the school context and other organizational settings. Applying these findings without a close scrutiny of the formal and informal variables that differentiate organizations is to infer beyond empirical support.

It is of common understanding among organizational theorists that the nature of the tasks an organization has to perform to attain its goals is the major attribute to their differentiation. The type of tasks involved establishes

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[17] David Goslin, The School in Contemporary Society (Illinois: The Scott Foresman Co., 1965), pp. 46-48.

[18] Charles E. Bidwell, "The School as a Formal Organization," Handbook of Organizations, ed. by James G. March (New York: Rand McNally and Co., 1965), p. 972.

[19] Christopher W. Flizak, "Organizational Structure and Teacher-Role Orientation," Administrator's Notebook, 17, 2 (Chicago: Midwest Administration Center, October, 1968).

their environmental domain and suggests methods of control and accepted standards of performance, all of which contribute to specify their structure and authority system. Thus, organizations differ in degree of specificity but not in character.[20]

This research bases its reasoning on the theoretical importance that "an organizational structure must be developed and maintained consistent with theoretical requirements," as specified by Thompson, and "yet at the same time consistent with input and output requirements and the reality of the task environment."[21] The middle school concept is an attempt to provide organizational flexibility in terms of structures, processes, and output prescriptions.

In summary, the question raised is concerned with the relationship of the organizational structure and its influence upon its participants. Middle school proponents have been concerned about the organizational structure and its effect on the attitudes and behavior of the transescents. They set forth objectives to be met in order to satisfy this

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[20]As suggested by Parsons, there are common features to all organizations. In this respect, theoretical constructs of organizational typologies refer to the school as a domesticated organization (Carlson, 1958), a pattern-maintenance organization (Parsons, 1955), a service organization (Blau and Scott, 1962), a special purpose organization (Simon, 1958), a social system (Griffiths, Getzels, and Guba, 1957). See C. Bidwell, "The School as a Formal Organization," in Handbook of Organizations, ed. by J. G. March (New Jersey: Rand McNally Co., 1965), pp. 972-1022. Also see Neal Gross, "Sociology of Education," in Sociology Today, ed. by K. Merton, et al. (New York: Harper Textbooks, 1959), pp. 128-152.

[21]James D. Thompson, Organizations in Action (New York: McGraw-Hill Co., 1967), p. 146.

age group in their special period of growth. The concern in this dissertation is to determine if different structural and functional school conditions, as proposed by the middle school concept, have a significant impact on its clientele.

The importance of such research lies in its theoretical and practical contribution. By analyzing the relationship of inputs, processes and outputs upon conditions in an educational organization the writer hopes to clarify the impact of various organizational conditions upon its clientele. The practical significance lies in the fact that it is an attempt to measure implications of organizational structure for effective school planning and control to achieve planned educational goals.

Definition of Terms

The definitions which follow are intended to clarify the sense in which they are used in this investigation. Unless otherwise noted, the definitions used are based upon past research or common usage in the field of education.

This study concentrated on children and their school organizational structure. These children range roughly in age from 10 to 14 years old. By the definitions used here they are referred to as transescent, early adolescent, and pre-adolescent children. For the purposes of this research, these terms are used interchangeably to indicate the dynamics of change and interdependence of the physiological, psychological and sociological changes that occur during this period of growth toward adolescence and maturity.

Transescent refers to the stage of development which begins prior to the onset of puberty and extends through the early stages of adolescence.

Puberty refers to the period of development in which biological changes reach a peak usually marked by signs of sexual maturity. Adolescence begins after this pubescent growth spurt.

Early adolescence and pre-adolescence will refer to the period of physical and psychological development that begins gradually at the onset of puberty. This period of change usually begins at about age 10 in girls and about age 12 in boys.

Organizational structure refers to the scheme of grade organization found in the public school, such as the 6-3-3 plan and the 5-3-4 plan. From a theoretical viewpoint organizational structure "is based upon, and is a function of, interpersonal expectations that become differentiated in the course of interaction."[22]

Reorganization refers to the process of adapting and changing the organizational structure of a school grade plan to another as a response to environmental changes and demands.

Behavior refers to the way a living system adjusts to its environment. It will be used here to describe the total integration of the transescent as a blend of physiological,

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[22]Ralph M. Stogdill, "Dimensions of Organization Theory," in Approaches to Organizational Design, ed. by J. D. Thompson (Pittsburgh: University of Pittsburgh Press, 1966), p. 13.

socio-emotional and intellectual development in a school environment.

Middle School refers to a new school organizational arrangement within a school system, encompassing what are traditionally grades 5, 6, 7 and 8, or grades 6, 7 and 8, for purposes of planning and conducting a unique set of educational experiences for transescents. Functionally, the middle school is defined as an administrative unit with a specific program, housed separately from the elementary and the senior high school, with its own principal and staff.

Junior high school refers to a school unit within a school system housing grades 7, 8 and 9, separated from all other grades in the school system and having its own principal and staff.

Socio-emotional problems refers to the self-awareness of worries and anxieties of the transescent while he is learning to cope with the physical, social and intellectual changes occurring during this period of transition and growth.

Self-concept of ability to learn refers to the student's perception of his ability to do school work and his attitudes toward the competitive aspect of school.[23]

Creative thinking ability refers here to the process of thinking and the production of novel response, as measured by The Torrance Test of Creative Thinking. Creative thinking

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[23]Self-concept term as used here is a synthesis of tested self-concept as defined by Brookover, et al., Self-Concept of Ability - School Achievement, III (East Lansing, Michigan: Michigan State University, 1965.

ability in this study is viewed as a blend of the following traits: fluency, originality and flexibility.

Physical fitness and health refers to all the processes of biological and organic growth, both structural and functional. In this study, it refers to composite scores obtained from the standardized test of physical fitness and health devised by the American Association of Health, Physical Education and Recreation.[24]

Assumptions

The results of this study are based upon the following assumptions:

Basic Assumption

The behavior of students as measured by socio-emotional, self-concept of ability to learn, creative thinking ability, and physical fitness and health criteria is significantly influenced by the organizational structure of the school attended.

Other Assumptions

The methodological assumptions of this study were:

1. The selected samples adequately represent the middle school and the junior high school students.

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[24] American Association for Health, Physical Education and Recreation, Youth Fitness Test Manual (Washington, D. C.: National Education Association, 1965).

2. The tests used are valid and reliable instruments for the measurements of the variables under study.
3. The design of the analysis of data adequately controls the major variables which could affect the results of the study, save the experimental variable, school organization.

Delimitations and Limitations of the Study

Delimitations

This study was delimited to the following problems:

1. It was limited to a random sample of students currently enrolled in the seventh and eighth grades of the middle school and the junior high school during the 1969-70 school year. The student population comes from a midwestern city in the state of Michigan.

2. It was limited to an investigation of socio-emotional problems, self-concept of ability to learn, creativity, and physical characteristics of group behavior of students as indicated by written responses to questionnaires.

3. It was an attempt to gain insights of the impact of organizational structure upon the behavior of the students.

Limitations

Generalizations derived from this study should be limited to the population sampled. It was conceded that the middle class socio-economic background of the students, the test selections, the organizational climate of the schools,

and the different abilities of the school staff and principals could to some degree affect the findings of the research. Recognizing the presence of these variables, the investigator endeavored to reduce their undesired effects on test results by selecting schools which were the most representative of their respective emphases.

Outline of the Organization of the Study

This chapter has presented the rationale and the overall objectives of the study, the nature of the problem, the statement of the problem, the research objectives, the significance of the study, the definition of terms, the assumptions, delimitations, and limitations of the study. Theoretical considerations about needs of the study are also included in this section.

In Chapter II, literature and research relevant to the problem are reviewed. Theoretical concepts and definitions pertaining to the middle school organization and their respective impact on group behavior of students are included.

In Chapter III, the research design and methodology are delineated. The selection of schools, the selection of the sample, the selection of variables, and the selection and description of the instruments are explained. Finally, the procedures for data collection and treatment of the data statistical design and analysis are presented.

Chapter IV presents an analysis of the data.

In Chapter V are included a summary of the study, discussions, conclusions, and recommendations for further research.

Summary

The general purpose of this study was to investigate the difference in group behavior of students attending the middle school and the junior high school type of organization. The strategy was to compare two groups of students and analyze significant differences in terms of socio-emotional, self-concept of ability to learn, creativity, and physical criteria.

The major hypothesis of this investigation was that there is a significant positive relationship in the group behavior of students attending the middle school as compared to junior high school students.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Today, fundamental changes have taken place and shaped the organizational structure and design of the school institution. The two past decades have witnessed the expansion of educational innovations designed to reform the curricula of the schools. Contributing to these changes are the advent of cybernation and automation, the emergence of new societal demands, the evolving cultural forces toward a better understanding of humanistic needs and trends, both within and between groups.

Capitalizing on these topics, educationists are modifying slowly their conventional organizational approach to the teaching-learning processes and contents. As a result, such proposals as team-teaching, flexible scheduling, nongrading, programmed instruction, uses of laboratory facilities and new media, and open-concept building design have been developed. They are means presented to the school administrators as positive alternatives to modify the structural and functional design of the various organizational and educational conditions to which the students are submitted.

One innovation that questioned the relevance of traditional school organization is the middle school concept. While acknowledging that the latter is in the line of age-grouping tradition, it nevertheless builds upon a theoretical postulate and design unique to itself by providing functional opportunities to meet the intellectual and individual needs of its students. The stated aims of the middle school concept are identified by the following:

1. To serve the educational needs of the "in-between-agers" (older children, preadolescents, early adolescents) in a school bridging the elementary school for childhood and the high school for adolescence.
2. To provide optimum individualization of curriculum and instruction for a population characterized by great flexibility.
3. In relation to the foregoing aims, to plan, implement, evaluate, and modify, in a continuing curriculum development program, a curriculum which includes provisions for: a) a planned sequence of concepts in the general education areas; b) major emphasis on the interests and skills for continuing learning; c) a balanced program of exploratory experiences and other activities and services for personal development; and d) appropriate attention to the development of values.
4. To promote continuous progress through and smooth articulation between the several phases and levels of the total education program.
5. To facilitate the optimum use of personnel and facilities available for continuing improvement of schooling.[1]

Given these characteristics, what effects are associated with these emerging organizational and curricula provisions for the transescent? As the literature on school organization suggests, any significant changes were made on

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[1]William B. Alexander, et al., The Emergent Middle School (New York: Holt, Rinehart and Winston, Inc., 1968), p. 19.

the basis of tradition, opinion, dissatisfactions with prevailing scheme, as a remedy for over-crowding or availability of funds for facilities. In general, the literature on the middle school is highly opinionated and focuses mainly on the aspect of grade reorganization, while on the other hand, research on transescents' growth and needs is dated and scant.

These observations point to the necessity of examining the middle school concept of organization from a broader outlook, and as it evolved in its historical and organizational perspective. This review of literature will briefly portray a traditional and an emergent model of organizational theory. It will investigate how the middle school concept and its relationship to transescents' growth and development is an attempt of planned changes toward the integration of emergent organizational and educational features. It is hoped that by so doing, a more precise understanding of the dynamics of structural design and its impact on its participants will be achieved.

The School as a Formal Organization

Schools are formal organizations created by the society to achieve specific goals. As such, the society, its cultural, economical and political values, defines what all of its individuals should learn. Parsons defines this relationship when he states that the focus for analyzing the structure of any social system is its value pattern.

> This defines the basic orientation of the system to the situation in which it operates; hence it guides the activities of the participant individuals. . . . The value of the organization legitimizes its existence as a system. . . .They legitimize the main functional patterns of operations which are necessary to implement the values, in this case the system goals.[2]

Thus, the schools are conceived as formal organizations which inculcate in the new generation "common modes of behavior"[3] in order that the society may survive and maintain itself.

A relevant history of the development of specific and universal statements of educational goals would be challenging, but no attempts are made here to give a comprehensive review. Suffice it to say that while specific educational objectives may vary from place to place, there are broad educational goals to guide the educational systems. The most important seem to be the socialization and the transmission of culture, the development of humanistic and thinking skills, and the training of future social reform agents. These universals have been espoused by generations of educators and laymen alike, although at times some writers point out the "winds of controversy which sweep"[4] the

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[2]Talcott Parsons, "Suggestions for a Sociological Approach to Theory of Organizations," in A Sociological Reader on Complex Organizations, ed. by A. Etzioni (2nd ed.; New York: Holt, Rinehart and Winston, Inc., 1967), pp. 35-36.

[3]Wilbur B. Brookover and Edsel L. Erickson, Society, Schools and Learning (Boston: Allyn and Bacon, Inc., 1969), p. 23.

[4]John P. DeCecco, The Psychology of Learning and Instruction (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968), p. 31.

American system and others stress the "goal ambiguity"[5] of the system to explain the educational organization resistance to change.

Acknowledging the prevalence of values held by the social system and how they are implemented in the social organization of the school, consideration will be given to a traditional and an emergent conceptualization of organization as two major currents to conceive them as formal organizations. It is here assumed that society's model of organization precedes school organization, and that the latter model follows the first.

Bureaucracy

The first conceptualization stems from Weber's description of the structure and organization of power and control which is referred to as a bureaucracy. The characteristics of the model (as summarized by Hall) are as follows:

> 1) A division of labor based on functional specialization; 2) A well-defined hierarchy of authority; 3) A system of rules covering the rights and duties of employees; 4) A system of procedures for dealing with work situations; 5) Impersonality of interpersonal relations; 6) Promotion and selection based on technical competence.[6]

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[5]Matthew B. Miles, "Planned Change and Organizational Health," in Change Processes in the Public Schools, ed. by Richard O. Carlson, et al. (Oregon: The Center for Advanced Study of Educational Administration, 1965), p. 22.

[6]R. H. Hall, "The Concept of Bureaucracy: An Empirical Assessment," The American Journal of Sociology, Vol. 69, (1963), p. 33.

By explaining the functioning of social structure, bureaucracy is then conceived by Weber as the organization of social groups as it is the basis for legitimate power and control of the society. Its influence has been so pervasive that few organizations today can claim not to be more or less a replicate of this system, and the schools are no exception.

Since its inception as the model of organization, almost everybody has commented upon it as a machine-model. Bennis aptly condenses these criticisms about bureaucracy when he writes:

> It has been criticized for its theoretical confusion and contradictions, for moral and ethical reasons, on practical grounds such as its inefficiency, for its methodological weaknesses, and for containing too many implicit values or for containing too few.[7]

For more than five decades of writing and reasoning about organization, the questioning of the overall rationality-efficiency-effectiveness premises underlying the model has led theorists to the structure-human relations dichotomy or to what Thompson referred to as "the paradox of administration, the dual searches for certainty and flexibility."[8]

It is noticeable, however, and the point will be reviewed throughout this review, that to our knowledge, few have ever questioned the legitimacy of the power-control

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[7]Warren B. Bennis, Changing Organizations (New York: McGraw-Hill Book Company, 1966), pp. 5-6.

[8]James D. Thompson, Organizations in Action (New York: McGraw-Hill Book Company, 1967), p. 150.

strategies of organizations to obtain effectiveness. It is still taken as a given even by the more emergent model.

These preceding theoretical considerations are an over-simplification since no attempt was made to give the barest outline of the contribution of the many scholars who assessed the bureaucratic model. Pages of perceptive argumentations about the functioning of human behavior in organization by astute observers such as Barnard, McGregor, Likert, Stodgill and other theorists are completely missed in discussion such as this. The purpose is to give only what seems to be the basic orientations to the problem as it stems from a traditional model.

In the case of public schools, to argue that they are bureaucratic organizations is to raise issues and cricicisms. The history of education has been dominated by the social system for which it legitimately exists. And as Curti points out: "The school structure itself in origin and growth. . . is much more the result of and dependent upon, dominant economic interests."[9]

Martin Trow[10] has traced the evolution of secondary school education through two phases. The first important change occurred in the mid-nineteenth century, when secondary schools began to receive an influx of students who

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[9]Merli Curti, The Social Ideas of American Educators (New Jersey: Littlefield, Adams Co., 1959), p. 590.

[10]Martin Trow, "The Second Transformation of American Secondary Education," International and Comparative Journal of Sociology, Vol. 2 (1961), pp. 144-165.

wanted training in order to assimilate to the emerging business-dominated economy. Before that, schools were privately owned and oriented to educate an elite group of students. After the 1870's, high school education began to be practically oriented to give students terminal degrees. These transformations produced considerable strains in the organization of schools. They required specialization of teaching personnel in order to meet the societal demands, and created a need for more administrative personnel to coordinate, control and integrate a variety of educational programs. To adjust to these changes, the schools specialized and standardized their procedures.

As the size of schools increased, a wider variety of courses was offered, and thus increased specialization, standardization and greater administrative overhead resulted, creating centralization of decision-making and administrative control.

Further standardization was found in the graded concept of education with one teacher in charge of a group of youngsters of the same age. From that time on, the measure of organizational effectiveness in these grade levels was assessed through achievement tests on various subject matter areas.

There is no need to pursue further the extent to which school organization became bureaucratized. As documented by Corwin, the history of education has shown harmonious subject matter adaptation to the demands of the social system.

but he noted that "the organizational structure of the schools has been extremely stable."[11]

Committee after committee in education and social critics from outside of education have written considerably on the subject of school bureaucratization: the factory-type atmosphere, the conformity, the educational allocation procedures by grade and test selection, the subordination, the alienation, and the cultural and communication lags.[12] The main purpose of this section is to focus on bureaucratization and the fact that it has had its most detrimental effects on the client, i.e., the student. The base-notion of power-control strategies of classroom practices has seldom been questioned, and when raised, the issue was referred to as utopian or as a prophecy of doom. The holder of authority in the classroom consists of one person issuing a command and a second complying with it as a form of interaction. In this kind of relationship, the most important issue is the hidden or explicit assumption made about human nature.

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[11]Ronald G. Corwin, A Sociology of Education (New York: Appleton-Century-Crofts, 1965), p. 427.

[12]See, for example, Jules Henry, "Docility or Giving Teacher What She Wants," The Journal of Social Issues, 2 (1955), pp. 33-41; Dean Harper, "The Growth of Bureaucracy in School Systems," The Journal of Economic Sociology, 24 (1965), pp. 361-372; John Holt, How Children Fail (New York: Pittman Publishing Co., 1964); and Alice Miel, The Short-changed Children of Suburbia (New York: The Institute of Human Relations Press, 1967.

This is not to suggest that proposals have not been presented to alleviate the subordination of teacher-student relationships. Dewey and Stanley Hall were the first among the influential reformists at the beginning of the century to reject authoritarianism and rote learning and propose that schools are for the children rather than the other way around. Their contributions were to assert that learning experiences and acquisition of knowledge stem from the student's interests and motivation, according to his maturational needs.

Following these postulates, some reforms have been attempted to liberalize the bureaucracy of school practice: the project method of Kilpatrick, the Dalton Plan of Parkhurst, and the Winnetka Plan of Washburne. They all endeavored to introduce initiative, decision-making and individualization of instruction in classroom practices by holding the student responsible for his learning. The major weaknesses, however, were to ignore the group dynamic interactions that occur in a classroom; hence they oscillate between hazy liberalism without recognizing the necessary requirements of acquisition and elaboration of knowledge. A major limit rested upon the emphasis on letting the students decide what they wanted to learn at a time when they do not know much about what there is to learn. And moreover, like the human relations approach, their conception has been in the tradition of the line authority model and their attempt at participation. Students' decision-making might be <u>a posteriori</u>,

conceived as a means to reduce the power of resistance of those submitted to it.

In the growing awareness of today's world, however, the educational organization is significantly affected by the change taking place. Parents, teachers, students at all levels are demanding participation, individuality and autonomy to the point that "it threatens to break down the neat staff utilization and timetable packages that have been developed in the past."[13]

The Emergent Model

Organizational theorists have been concerned with the challenge of today's societal demands. Since the 1960's, many attempts have been made to reconcile and integrate the structure-human relations duality. These theories adopt the open-system approach and place less emphasis on describing the structure of the organization than on attempting to understand the principles underlying the behavior of its participants in the process of change toward democracy and humanistic values. Drawing from multi-disciplinary findings, Bennis, a social scientist, argues that a fundamental change has occurred in the basic philosophy of organizational behavior. He summarizes it as follows:

1. A new concept of man, based on increased knowledge of his complex and shifting needs, which replaces

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[13]Robert B. Carson, "Administration in the Seventies," The Canadian School Administrator, Vol. 9 (February, 1970), pp. 20-23.

the oversimplified, push-button or inert idea of man.
2. A new concept of power, based on collaboration and reason, which replaces a model of power based on coercion and fear.
3. A new concept of organizational values based on humanistic existential orientation, which replaces the depersonalized, mechanistic value system.[14]

Among the newer theories, one of the most sophisticated operational models has been developed by James D. Thompson. Building upon the personal-developmental theorists, Thompson considers the organization as an actor rather than a playwright. Central to his argument is the concept that "what organizations do or what they seek to do" is nothing "except as the individual members within them act."[15] Thus, to understand organization, a prerequisite is to understand human behavior.

An organization is conceived as "an open system, indeterminate and faced with uncertainty, but subject to criteria of rationality and hence needing certainty."[16] Facing this paradox, the problem is then to know how the organization under norms of rationality, deals with the multidimensional and dynamic forces of the environment, technology, task differentiation and assessments. How does it coordinate and adjust when confronted with complexity and fluctuating changes? Thompson asserts that "uncertainties appear as the fundamental problem of organizations," and coping with

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[14]Warren Bennis, op. cit., p. 188.

[15]James D. Thompson, op. cit., p. 98.

[16]Ibid., p. 13.

uncertainties is "the essence of the administrative process."[17]

On the other hand, Thompson makes it clear that human behavior does not develop in a vacuum. It is patterned by the social system, which provides the individual with knowledge, aspirations, beliefs about causations, and standards. This interaction between the individual and the situation influences his decisions to participate in an organization and since the process is interactive, a bargaining contract is established between him and the organization. The extent to which he will comply with the organizational goals is a function of the individual and how he will exercise his discretionary power.

In summary then, the theory is that an organization builds a structure based on adequate and fruitful conceptions of human variables.

> We must conclude that there is no best way, no single evolutionary continuum through which the organizations pass; hence no single set of activities which constitute administration. Appropriateness of design, structure and assessments can be judged only in the light of the conditions, variables, and uncertainties present for the organization and these judgments are bound to be significantly influenced by the perceptions and beliefs of those participating in the administrative process.[18]

From this perspective, the concept of line-authority and power-control strategies is qualitatively breaking through the mechanistic postulate. It is conceived as an adaptive

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[17] Ibid., p. 159.

[18] Ibid., p. 162.

and an interdependent relationship. Coordination is attributed to groups or individuals in accordance to the needs of the situation and the resources available.

> . . .Administration is a process flowing through the actions of the various members. . .a process spanning and linking levels. . .a process related to the interactions of levels and components.[19]

This emergent conceptualization, while not explicitly recognized by educational theorists,[20] provides insights to the theoretical relevance of the middle school concept and its proponents.

Most reviews of literature about the reorganization of educational plans are historical rather than organizational in their approach. Further, since the beginning, the question raised has always been one of knowing and promoting "the best way" to conceive of schools appropriate for transescents. As Parsons suggests, knowledge about what should be is viewed through educational goals and their contribution to the social system value pattern.[21] It thus appears, that any serious considerations about school organization must

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[19] Ibid., p. 149.

[20] Bidwell noticed that treating school organization as a complex organization is relatively new and research in both areas has not been intermingled. Some educational researchers have utilized concepts from the area of organization but generally they have not incorporated the whole model. See Charles E. Bidwell, "The School as a Formal Organization," in Handbook of Organizations, ed. by J. G. March (Chicago: Rand McNally Co., 1965), pp. 972-1022.

[21] Talcott Parsons, "Some Ingredients of a General Theory of Formal Organization," in Administrative Theory in Education, ed. by A. Halpin (Chicago: University of Chicago; Midwest Administration Center, 1958), p. 69.

inevitably turn to the question of educational goals and objectives, their implementation processes, and their outcomes.

Assessing the effectiveness of organization is the problem of administration, Thompson acknowledged. The problem of the organization is to cope with the expectation of uncertainties and as such, assessment is to be regarded as the degree to which the organization is flexible and adaptive to the future.[22]

Bennis also argues along these lines. Pointing to the heroic contributions of organization theorists to identify and measure dimensions of organizational effectiveness, he contends that the flaws lie in the fact that present effectiveness criteria have been inattentive to the problem of adaptation to change. Proposing that organizations should be viewed as "adaptive, problem solving, organic structures," then the criteria of effectiveness should be viewed ". . .on the basis of the processes through which the organization approaches the problems. . .in relation to the ability to cope with change, with the future."[23] Hence, flexibility is the essence of organizational effectiveness, and flexibility for Bennis means adaptability to change, identification of knowing where it is, reality-testing of itself and the environment.[24]

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[22]Thompson, op. cit., p. 80.

[23]Bennis, op. cit., p. 43.

[24]Ibid., p. 55.

The middle school concept is essentially a proposal of planned structural change to provide an adaptive and flexible school environmental atmosphere to meet the needs of today's transescents. The next section of this chapter will outline the middle school concept, and indicate how it evolved as an institution to adapt to the goals of its individual participants and the society as a whole.

The Emergence of the Middle School Concept

It is generally accepted that ". . .like other formal organizations, a school system functions in the context of a more inclusive social and cultural environment.[25] Eichhorn supports this view and presents a rather convincing argument about the school organization being a cultural response to societal changes when he states:

> Due to cultural factors, physical maturation is occurring in individuals at an earlier chronological age than formerly; this trend is accompanied by similar trends in social interests. It is characteristic of American education to develop organizational patterns commensurate with the nature of its students; the current status of human growth and development suggests there is a definite need to design a middle school to be based on compatible and social traits of the students.[26]

The middle school is thus conceived as a culturally induced phenomenon that is gaining impetus and builds upon a structure based on adequate knowledge of human variables. It evolves from multidimensional and dynamic forces, rather than

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[25]Neal Gross, "The Sociology of Education," in Sociology Today, I, ed. by R. K. Merton (New York: Harper & Row, 1965), p. 143.

[26]Donald Eichhorn, The Middle School (New York: The Center for Applied Research in Education, Inc., 1966), p. 1.

from a single evolutionary continuum of dissatisfactions with previous organizational patterns. The rationales for the proposal are indeed numerous and interdependent.

Middle school proponents advocate many reasons to support their view. The most frequently reported is that reorganization from the 6-3-3 plan to the 5-3-4 or 4-4-4 plan allows greater administrative, organizational and curricular flexibilities and adjustments to the transescent. Ann Grooms, a pioneer of the middle school concept, defines it as follows:

> The basic organizational component is the team consisting of student and teacher units. There are no formal classes in the sense that no one attends mathematics for grade 7 at 0900 every day. There is no school curriculum but there are curricula. . . .The middle school affords the group (10-14) an opportunity to grow up in a learning environment conducive to natural educational development.[27]

Others, such as Alexander, et al., contend that there are three major justifications underlying the emergent middle school, i.e., to provide a program adapted to transescents, to promote continuity, and to facilitate innovations in curriculum and instruction.[28] Implicit in these statements is discontentment with current junior high school organization and practices which have not lived up to their stated aims. Another inference is that the new organization will promote the necessary planned changes in curricular

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[27]Ann Grooms, Perspectives on the Middle School (Ohio: Charles E. Merrill Books, Inc., 1967), p. 6.

[28]William M. Alexander, et al., The Emergent Middle School (New York: Holt, Rinehart & Winston, Inc., 1967), p. 6.

contents and activities to meet the needs of transescents, who are the focus of attention. Research and evidence to support their claims, however, are few, contradictory, and stem mainly from dissatisfaction associated with prevalent graded patterns.

Related Research on Organizational Effectiveness

One of the first acknowledgments of the paucity of research on school organization is found in the Encyclopedia of Educational Research of 1941. It was reported: ". . .The results were mostly inconclusive, with little difference found between the traditional and the reorganized schools."[29]

In 1954, Lounsbury[30] sent opinionaires to selected educators in order to assess the role and status of the junior high school. Drawing from a 8 per cent random sample of all separate junior high schools, the data showed that reducing the drop-out rate and strengthening the holding power of the school were no longer considered valid functions for that institution. A recent study by Stuckwisch[31] concurs with these findings.

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[29]Walter W. Monroe, ed., Encyclopedia of Educational Research (New York: The Macmillan Co., 1941), p. 1081.

[30]J. H. Lounsbury, "The Role and Status of the Junior High School" (Unpublished Doctoral dissertation, George Peabody College, Graduate School of Education, 1954).

[31]H. J. Stuckwisch, "Functions of the Junior High School as Indicated by Junior High School Teachers" (Unpublished Doctoral dissertation, Indiana University, School of Education, 1966).

Lounsbury and Douglass in 1966 surveyed the same school sample of 1954 to find out about their adaptability to change. It was concluded that, overall, the changes were very modest, and from some standpoints disappointing.

> Several of the more notable changes. . .were contrary to much educational theory, though perhaps supported by societal pressures. . . .It has not apparently reached a level of maturity characterized by a degree of standardization in practice.[32]

Concerned about classroom practices and activities, Lounsbury and Marani conducted simultaneously 102 shadow studies in grade eight across the country. From reports of trained observers, they reached the conclusions that the classroom atmosphere was often unstimulating, there was a lack of variation in the subject required programs, and few provisions were made for individual differences among the students.[33] These findings were confirmed by Powell and Robinson, using a similar technique. The "typical" classroom was mostly one of "the teacher dominating and controlling the learning atmosphere so extensively that the student had little opportunity to deal with subject matter in a way that meant something to his fulfillment."[34] Also, they

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[32]J. H. Lounsbury and H. R. Douglass, "A Decade of Changes in Junior High School Practices," The Clearing House, 40 (1966), pp. 456-458.

[33]J. H. Lounsbury and J. Marani, "The Junior High School We Saw: One Day in the Eighth Grade," ASCD (1964), pp. 64-66.

[34]R. H. Powell and E. W. Robinson, "The Junior High 'School' World: A Shadow Study," NASSP Bulletin, 51 (1967), pp. 77-81.

noted being shocked by the lack of teacher-pupil planning and interaction to allow the students possibilities to inquire about content relationship, values involved, and behavioral implications.

One can only conclude that a contradiction appears to exist between the learner's needs of experimentation and expression of curiosity, and the guidelines of junior high school, namely "subject-matter integration, exploration, guidance and socialization."[35] Lacking these, the students become alienated, bored, and potential mental drop-outs. These findings support the viewpoints of many current educational critics like Friedenberg, Goodman and Holt,[36] who, along with Dewey and the learning theorists, raised themselves against established classroom practices that stifle the children's interests and motivation while encouraging conformity and stupidity.

Middle school proponents seek to change this trend by providing an impetus for different teacher utilization, and by training them specifically to become guidance-centered toward the learning activities of the students. Actually, middle school advocates are projecting reorganized teacher activities, based on specialization, while concurrently sensitizing them to adopt a variety of current techniques

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[35]W. T. Gruhn and H. R. Douglass, The Modern Junior High School (New York: The Ronald Press Co., 1956).

[36]P. Schrag, "Education's Romantic Critics," Saturday Review (February 18, 1968), p. 80.

for cooperative planning, group decision making and analysis of instructional materials and learning strategies, and team teaching.[37] These are means to break the lock step from bureaucratic procedures to democracy. These demands are appropriate to middle school plants, which are characterized by flexibility of instructional spaces, library material centers, and learning laboratories. Such plants provide freedom incompatible with departmentalization and high school scheduling.[38]

Another consideration which leads to the middle school concept is the present state of research available on the best organizational arrangement to meet the social, emotional and mental needs of this age group. Research evidence to support the present vertical organization patterns, as to their effectiveness is, at best, contradictory and profuse.

The National Education Association reported in 1958 that there was little research available on psychology of the adolescent and the junior high school organization. They stated, "The junior high school has never been fully accepted, either in theory or in practice."[39] A year later, however, the National Association of Secondary School Principals[40]

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[37]Grooms, op. cit., pp. 62-64. See also Theodore C. Moss, Middle School (Boston: Houghton Mifflin Co., 1967), pp. 208-230; Alexander, et al., op. cit., pp. 102-105.

[38]Grooms, op. cit., pp. 121-122.

[39]"The Junior High School," NEA Research Memo (November, 1958).

[40]"Recommended Grade Organization for Junior High School Education," NASSP Bulletin, 43 (1959), pp. 227-230.

issued a statement promoting the 7-8-9 plan as the best type of grade organization to provide for an educational program adequate for early adolescents. The same year Howard, concurring with the need of a transitional unit, stated after reviewing the literature, ". . .At this point, there seems to be little, if any, evidence to prove that one type of organization is superior to another."[41] He advised that selection of type of school organization must depend upon the needs of the district.

Superintendent Hull of Torrance,[42] after a review of literature, both pro and con, concerning the junior high school since 1927, commented that seventh and ninth graders' interests are not the same and their growth and development are so far apart that they practically live in two different worlds. He claimed that seventh and eighth grades should be organized like elementary schools, with large blocks of time under the direction of one teacher.

Reece[43] submitted an opinionaire to selected seventh, eighth, and ninth grade students, as well as their parents and their teachers; students were from a three year junior high and a six year secondary school. The conclusions drawn

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[41]A. W. Howard, "Which Years in Junior High?" The Clearing House, 33 (1959), pp. 227-230.

[42]J. H. Hull, "What Research Says About the Junior High School," Nation's Schools, 65 (1960), p. 81.

[43]L. J. Reece, "An Evaluation of Two Types of Vertical School Organization in a Selected School System" (Unpublished Doctoral dissertation, University of Nebraska, Teachers College, 1960).

were that: (1) Parents, students and teachers preferred the 6-3-3 plan; and (2) There was more participation and availability of activities for seventh, eighth and ninth graders in the junior high school than in the six-year elementary school.

Mills,[44] after a study of 320 physical, mental, social, and emotional characteristics of students, and teacher implications, concluded that there were three areas of similarities in the 13 year span of education; that is, K-4, 5-8, and 9-12.

A study which somewhat refutes the latter argument was undertaken by Buell.[45] After reviewing the characteristics and needs of early adolescents, he suggested that grouping grades 7-8-9 together best meets their needs. To support this claim, Buell commented that half of the entering seventh graders have reached puberty. As the year progresses, more become adolescents; and by the end of the year, over 50 per cent of the students have reached puberty. Thus, it makes sense to group seventh graders in the three-year junior high, but not the sixth graders. Ninth graders, on the other hand, should also be kept in the junior high school since many of them are still pre-adolescents.

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[44] G. E. Mills, "The How and Why of the 'Middle' Schools," The Nation's Schools, 68 (1961), pp. 43-53, 72-73.

[45] C. E. Buell, "What Grades in the Junior High School?" NASSP Bulletin, 46 (1962), pp. 14-22.

Another conflicting view is presented by Dacus.[46] On the criterion measures of social, emotional, and physical maturity, and opposite-sex choice, the least degree of variability was found between pupils in grades six and seven, and between pupils in grades nine and ten. This position was similarly endorsed by Sanders,[47] who reached the conclusion that grades six through eight comprise a more homogeneous group in terms of mental and educational development, when compared to grades seven through nine. Both Dacus and Sanders concur on a transitional unit encompassing grades 6-7-8 and promoting ninth graders to the four-year senior high school. These findings support the middle school concept proponents who promote either the 5-3-4 or the 4-4-4 grade arrangement.[48]

Considering the impact of school organization in different grades, results of studies are most elusive. For instance, Austin,[49] in a comparative study of the 5-3-4 and the 6-3-3 plans, in terms of academic achievement and school

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[46]W. P. Dacus, "A Study of the Grade Organizational Structure of the Junior High School as Measured by Social Maturity, Emotional Maturity, Physical Maturity and Opposite Sex Choice Characteristics" (Unpublished Doctoral dissertation, University of Houston, Texas, 1963).

[47]S. G. Sanders, "Differences in Mental and Educational Development from Grades Six Through Nine and Implications for Junior High School" (Unpublished Doctoral dissertation, University of Iowa, 1966).

[48]Alexander, et al., op. cit., pp. 7-10.

[49]J. C. Austin, "A Comparative Study of Two Forms of School Organization for the Early Adolescent in Terms of Pupil Achievement and School Adjustment" (Unpublished Doctoral dissertation, University of Houston, Texas, 1967).

adjustment measures, found no conclusive differences between the groups in grade seven as it pertained to academic achievement, while the ninth graders from the reorganized 5-3-4 plan performed significantly better in high school. He reported that one interesting finding of the study was that parents favored strongly the 5-3-4 plan.

White[50] studied the achievement, personal-social adjustment, and activity participation of 35 selected seventh graders from five different junior high school organizational patterns. The results showed that the greatest hindrance of learning for seventh graders appeared significantly in schools grouped according to the 7-9 or 7-12 plan.

Strickland[51] found grade nine functioning as well in a four-year high school as in a three year junior high school on measures of academic achievement and school attitude. He contends, however, that the removal of grade nine from the middle school unit is considered to be indirectly advantageous to the transescents in the middle school. The sequential programming of a four-year high school supports college-oriented curricula.

Glissmeyer[52] compared over a one-year period the achievement of sixth graders in a middle school and in an

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[50]W. D. White, "Pupil Progress and Grade Combinations," NASSP Bulletin, 51 (1967), pp. 87-89.

[51]V. E. Strickland, "Where Does the Ninth Grade Belong?" NASSP Bulletin, 51 (1967), pp. 74-76.

[52]C. H. Glissmeyer, "Which School for the Sixth Graders, The Elementary or the Middle School?" California Journal of Educational Research, 20 (1969), pp. 176-185.

elementary school. No significant differences were found between the groups, although the teachers' opinions about the ideal educational program for sixth graders strongly favored the middle school.

Middle school proponents dealing with the present state of research on vertical organizational patterns acknowledge the influence of group effects by promoting on organizational structures that would be nongraded or multigraded. As expressed by Alexander, et al.,

> Non-grading and multigrading are promising alternatives to the traditional schools and should be given careful consideration in seeking to provide flexible progress plans geared to human variability.[53]

Thus, in theory, middle school advocates' paramount concern is for individuals, while recognizing the influence of the group on the individual. The extensive field study conducted by Borg[54] to investigate the effect of ability and homogeneous grouping of slow, average and superior junior high students is representative of most of the research on the subject. The results demonstrated that ability grouping relatively favored superior students, yielded no advantage to average students, and was deleterious to slow students. It was concluded that heterogeneous groupings have a favorable impact on students, in general. When the pupils are not stimulated to learn they are not motivated by students

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[53]Alexander, et al., op. cit., p. 119.

[54]W. B. Borg, Ability Grouping in the Public Schools (Madison, Wisconsin: Dembar Education Research Services, Inc., 1966), p. 92.

like themselves. On the other hand, the highly motivated students have a positive effect in their groups. Educators following the middle school concept should emphasize sequential intellectual, emotional and social development of the students, and recognize group influence and interactions. As stated previously, there is no best way; the best way is situational, environmental, and dependent upon the resources available.

The review of literature indicates that prevalent graded patterns and classroom practices for the junior high school and for transescents are contradictory. There is conflicting evidence as to the effectiveness of any one type of organization. The question raised now is to know if, from available surveys, the middle school has in practice provided any significant differences other than to change its name.

From data available, Alexander suggests that the new middle schools were thus far

> failing to provide a program and institutional organization differing very much from those in the predecessor schools. . . .In fact many so-called new middle schools appeared more like junior "junior high schools" . . . .To me the point of greatest concern is that the rapidity of the movement may once again freeze too hastily planned institutional arrangements into what should be an ever-evolving and changing program of schooling to meet the ever-changing needs of growing individuals in a dynamic society.[55]

The more encouraging highlights of the survey pointed evidence to the following: provisions for individualization,

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[55]W. M. Alexander, "The New School in the Middle," Phi Delta Kappan, 50 (February, 1969), pp. 355-357.

independent study plans, modular and other scheduling plans, team-teaching, block-of-time combinations, and small group-large group patterns of instruction. These results concur with the recent survey of "Middle Schools in Action," which reported similar data.[56]

The preceding review of literature on school organization for transescents does not provide solid ground on which to decide in favor of any one pattern of organization over another. It is worthy of note that most research focuses on achievement, adjustment, or drop-out reduction. Two recent surveys on middle school practices and activities, while not representative of all middle schools in operation, might lead one to conclude that the movement has strong advocates; but in practice, the theory is far from being integrated into reality.

Transescence and the Middle School Concept

The organizational theory upon which the middle school concept is based focuses on the individual, the educational goals, and the social value system. It also builds upon the fact that

> . . .individuals neither develop nor react emotionally, physically or mentally in a separate sense, but this happens in an integrated or unified manner. What one does in a given situation, is not only the result of what he knows, but also of how he feels, and of the stimulus value of his environment as he perceives it. Neither the individual nor his surroundings completely determines what he will do or what he will be. A cause

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[56]"Middle Schools in Theory and Fact," NEA Research Bulletin, 48 (May, 1969), pp. 49-52.

> and effect relationship exists between him and his milieu and between the intellectual, physical, and emotional aspects of his being.[57]

From this perspective, the study of human behavior calls for a multidisciplinary approach combining the many physical, social, emotional, and intellectual changes experienced by the 10-14 year old. This view is explicitly acknowledged by Eichhorn when he defines transescence as a period through which:

> the many physical, social, emotional and intellectual changes in body chemistry that appear prior to the puberty cycle to the time in which the body gains a practical degree of stabilization over these complex pubescent changes.[58]

But, not only is the transescent confronted with managing these inner developmental changes, he is also confronted with the unprecedented complex societal impact of population explosion, increased science and technology, international communication, and human aspirations. He is thus faced with a maximum emotional instability of the inner and outer self, which makes him vulnerable and stressful. As one psychologist points out,

> In the midst of deciding where they are, they shouldn't have to waste any energy finding out where they are during the volatile years of 11 through 13 or 14; youngsters should have a familiar, secure background in which to operate.[59]

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[57]H. W. Bernard and W. C. Huckins, ed., Readings in Human Development (Boston: Allyn and Bacon, Inc., 1967), p. 35.

[58]Eichhorn, op. cit., pp. 1-6.

[59]Sidney Berman, "As A Psychiatrist Sees Pressures on Middle Class Teenagers," Historical Education Association Journal, 54 (1965), pp. 17-24.

During these years, the major developmental tasks transescents are striving to achieve are: to attain physical abilities and maturity, to develop their intellectual skills, to learn how to deal with abstract concepts and adult ways of problem-solving, and to learn how to live and cope with parents and peers while increasing their self-concept. Wattenberg sees middle school programs established toward such developmental tasks when he states: "These tasks include the establishment of heterosexuality, the firming-up of ego identity and the practice of adult roles."[60]

Mary Compton, drawing from the USOE survey of 1,101 middle schools in 1967-68, stated specifically the programs and goals which meet the needs of these students. They are:

> 1. Articulation with the elementary school to assure easy transition for youngsters. This may necessitate a pseudo self-contained classroom approach part of the day for the first middle-school year.
> 2. Team teaching by specialists in closely-related areas of general knowledge--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 student's needs, interests, and abilities.
> 5. A home-base group assigned to a teacher trained in guidance and counseling.

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

> 6. Activities based on the personal development of students rather than on enhancing the school's prestige or public entertainment.
> 7. A plan of vertical school organization providing for continuous progress of students.
> 8. Evaluative techniques in light of individual progress, rather than in terms of some illusive "average" for a chronological age group.
> 9. A program tailored to the needs of each student, with individualized 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 students.[61]

Physical Growth and Development

Children today mature earlier, grow heavier and taller than their predecessors. This trend is generally accepted and supported by data on human biology as reported by Tanner:

> During the last 100 years, there has been a very striking tendency for the time of adolescence. . .to become earlier. The data on heights and weights. . .show that the whole process of growth has been progressively speeded up and that all children born in the 1930's or 1950's for example, were considerably larger than those born in the 1900's. . .children of ten, thirty years ago, having the size of children of nine at present.[62]

This trend is progressive, as documented by Espenschade and Meleney,[63] who found that from the same school, girls were one inch taller and six pounds heavier, while boys were two inches taller and ten pounds heavier in 1959 than those

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[61] Mary Compton, "The Middle School in Theory and in Practice," Educational Digest (April, 1969), p. 24.

[62] J. M. Tanner, Growth at Adolescence (Oxford: Blackwell Scientific Publications, 1963), pp. 43, 143-144.

[63] A. Espenschade and H. E. Meleney, "Motor Performance of Boys and Girls," The Research Quarterly of the American Association of Health, Physical Education and Recreation, 32 (1961), p. 187.

measured in 1934. Cole[64] documented research data which show a general world trend of increases in height and weight for boys and girls during the last 50 years.

Recognizing these general tendencies, the comparative growth rates among individuals and between the sexes differ widely. At the onset of puberty and sexual maturity, the rate of growth for girls occurs at an average age of 10 to 13 years, whereas for boys, it occurs usually between the ages of 12 and 16. These changes are accompanied by many physiological and anatomical developments. They are: the development of primary and secondary sex characteristics; changes in size, weight, body proportions and muscular development; and related changes in strength, coordination, and skills.[65]

Individual variations in growth and maturation recorded in many books on psychology of adolescence create emotional and social concerns for both sexes. As it relates to puberty, current literature in psychology suggests that among normal preadolescents, suppression of sexual interest in children from 10 to 13 years of age is a phenomenon limited to the few. Sarnoff, in 1962, noted, for example, that ". . .The sexual milieu of the prepubescent child is rapidly changing in the direction of greater encouragement for heterosexual

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[64]Luella Cole, Psychology of Adolescence (New York: Holt, Rinehart and Winston, Inc., 1959), pp. 21-24.

[65]Committee on Adolescence, Group for the Advancement of Psychiatry, Normal Adolescence: Its Dynamics and Impact (New York: Charles Scribner's Sons, 1968), p. 21.

contacts--even among members of the middle class."[66] Broderick and Fowler reported that among children aged 9 to 13, in the upper, middle and lower classes, 52 per cent in fifth grade and 38 per cent in sixth grade chose one or more friends of the opposite sex as the person they liked best. They also recorded that a great majority of fourth, fifth and sixth graders claimed to have a sweetheart who reciprocated their feelings.[67]

O'Neil, in 1969, contended that the social scene of the last few years has provided an unlimited, multimedia inundation of sexual stimulation for all ages. He also argues that:

> The bulk of literature devoted to preadolescence is useless to today's educator; it reports studies and theories of a past era; it is sanctimonious and moralizing about the ways things ought to be rather than the way they really are; it is blind to color and social class status; and it is so generalized that it is inapplicable to the daily give and take that teachers have with individual students.[68]

A similar view was expressed by Margaret Mead, when she verbalized her concerns about the striking features of the last two decades being the ". . .steady spread downwards in age

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[66] I. Sarnoff, Personality Dynamics and Development (New York: John Wiley and Sons, Inc., 1962), p. 373.

[67] C. B. Broderick and S. E. Fowler, "New Patterns of Relationship Between the Sexes Among Preadolescents," in Human Development, ed. by L. J. Gordon (Chicago: Scott, Foresman and Co., 1965), pp. 261-265.

[68] E. B. O'Neil, "The Changing Children of Preadolescence," Childhood Education, 46 (January, 1970), p. 184.

level of dating; going steady; pairing-off (rather than one-sex friendship). . . ."[69]

One can conclude from these remarks that human behavior is largely governed by social conditioning. In this respect, parents, peers and teachers are significant factors in influencing the social and emotional development of the transescent.

As they relate to physical development, Kagan believes that the skills and values exhibited by children are largely a factor of peer group standards. According to him, the child, especially the boy, has a strong drive for power, a motive to play the dominant role in a boy-girl dyad. He adds:

> The uncorrupted sign of power for all children is strength. . . .The culture in its wisdom, preaches substitute signs for power. Prowess at athletics, skills at adult activities, signs of intelligence can function as badges of potency if the group accepts that currency.[70]

Eichhorn holds a similar viewpoint that physical efficiency is more important in the life of a boy than it is for a girl. Social approval is not only the result of pressures from peers, but also from adults. "Unfortunately, our culture makes this demand at an inappropriate period as far as the transescent's physical maturation is concerned."[71]

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[69]Margaret Mead, "Early Adolescence in the United States," NASSP Bulletin, 49 (April, 1965), p. 5.

[70]Jerome Kagan, "The Child, His Struggle for Identity," Saturday Review (December 7, 1968), p. 87.

[71]Eichhorn, op. cit., p. 22.

Josselyn indicates that during the period of growth spurt, there is a similar increase in manual dexterity and motor skills control. She adds, "Since the young adolescent is usually described as awkward, the findings seem contrary to common observation."[72]

These facts most assuredly have implications for the middle school concept. The students are, at least physically, entering earlier the phases of adulthood. The onset of puberty creates disturbances and tensions for which the student is unprepared. Therefore, grouping the 10 to 14 year olds in a transitional school that would take into account by its program the frustration and confusion felt by these youngsters would facilitate their accommodation to these growth changes.

Mental Growth and Creative Thinking Ability

> The development of the ability to perform formal thinking, to deal with abstractions, and conceptualize, which children in past years acquired somewhere between age 12 and 14 can be and has been appearing at an earlier age than previously due largely to experiences found within the social environment. Since the cultural and educational conditions are variables which may be slowed down or stepped up, it follows that earlier development of mental ability is possible and even probable.[73]

Howard's statement lends support to the readiness theory of middle school grouping grades 6-7-8, which builds upon

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[72]Irene Josselyn, The Adolescent and His World (New York: Family Service Association of America, 1952), p. 325.

[73]A. W. Howard, Teaching in Middle School (Pennsylvania: International Book Co., 1968), p. 4.

Piaget's third stage of intellectual development. That phase occurs usually at grades six and seven, or makes its appearance at puberty. The ability to reason inductively and deductively provides the transescent with new adaptive and defensive techniques, for now he can deal with problems mentally, and consider alternatives in dealing with their solutions. As Bruner describes it:

> Intellectual operation now appears to be predicated upon the same kind of logical operations that are the stock in trade of the logician, the scientist, or the abstract thinker.[74]

This is a development of unique importance in the life of a transescent, for the acquisition of greater intellectual capacities contributes to the burgeoning of interests, ability, and activities.

At times, it is self-centered thinking which turns into intellectualization. At other times, it is the search for relationships and combinations of ideas, using systems of thought, which yields to problem solving and formal logic.[75] As stated previously, this acquisition is adaptive and builds upon a previous structure. Flavell, in commenting on the organization of concepts in mental operation being related to a system of totality, states, "The development of structures can be thought of as a process of successive

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[74]Jerome S. Bruner, The Process of Education (New York: Random House, 1960), p. 37.

[75]Jean Piaget, "The Attainment of Invariants and Reversible Operations in the Development of Thinking," Social Research, 30 (1963), pp. 283-299.

approximations to a kind of ideal equilibrium, an end state never achieved."[76]

Longitudinal studies on the intelligence age-curve, performed by Bayley, have produced results indicating that, contrary to older theories showing the curve of intelligence developing until the twenties and then slowly declining, ". . .at least some intellectual abilities may continue to increase slowly to fifty years of age or older."[77]

She formulated a theory based on the assumption "that the human organism. . .undergoes continual processes of change throughout its life span. The changes are more rapid at some periods of life than others."[78] Studying the intelligence age-curve throughout infancy and childhood, the studies indicated that the intelligence age-curve shows acceleration during the 11 through 14 year period. She indicated also that this age-curve acceleration is not related directly to the pubescent spurt for either sex and concludes that the environment is a significant factor that influences that change.[79]

The capacities for abstract thinking vary also from one adolescent to another, and are a function of cultural and

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[76]John Flavell, The Developmental Psychology of Jean Piaget (New York: Van Nostram Co., 1963), p. 50.

[77]Nancy Bayley, "Mental Growth and Development," in The Adolescent, ed. by J. Seidman (New York: Holt, Rinehart and Winston, Inc., 1960), p. 185.

[78]Ibid., p. 186.

[79]Ibid., p. 188.

educational conditions.[80] This quality depends upon the individual's opportunities to develop such ability and his perceived needs to achieve logical thinking, rather than upon some inherent capacity to think in this way. Brookover and Erickson documented these facts in their research on self-concept of ability to learn. According to this approach to intellectual achievement and performance, students behave and achieve in accordance with the expectations held by significant others in regard to their ability to perform.[81] The thesis about significant others has many implications for classroom practices. It is stated as follows:

> Each person learns to anticipate particular behavior from certain others. In addition, each person learns that certain behaviors are appropriate and proper for him in various situations. Through interaction with others, each person acquires a conception of himself in the several roles in which he performs. These self-concepts involve both definitions of what is desirable behavior for him and assessments of what he is able to do.[82]

Therefore, a middle school program and school organization based on continuous pupil progress, non-grading, and teachers interacting with pupils seemed to provide meaningful opportunities to break the lock step of bureaucratic power-control strategies and their allocation of students.

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[80] B. Inhelder and Jean Piaget, The Growth of Logical Thinking from Childhood to Adolescence (New York: Basic Books, 1958), p. 337.

[81] W. Brookover and E. Erickson, Society, Schools and Learning (Boston: Allyn and Bacon, Inc., 1969), pp. 93-97.

[82] W. Brookover and E. Erickson, Sociological Foundations of Educability (Boston: Allyn and Bacon, Inc., 1968), pp. 19-20.

For, if one accepts the premise that the learner's perception of his ability to achieve is the result of expectations gained in interactions with significant others, classroom practices and teachers' attitudes are therefore potential constructs for the achievement of formal thinking and problem-solving abilities.

Individual students also grow according to their own timetable. It follows that organization of instruction and programs alone does not provide the learner all of what he needs. To understand the student's individuality and the group effects of learning is a pre-requisite for teachers in the middle school. As stated by Eichhorn, "Two content areas are involved. . . .The physical-cultural curriculum is founded on numerous factors embodied in the socio-psychological model."[83]

Associated with problem-solving is creative thinking ability. The assumption underlying most research on creativity is that it is a capacity possessed to some extent by all individuals and is a product of thinking. According to Guilford, there are two cognitive styles involved in studying this behavior: convergent and divergent thinking. Divergent thinking is the type that describes most creativity; it is seen as speculative, the ability to produce a variety of responses to a single stimulus. It is characterized by flexibility--the ability to use a variety of approaches to

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[83]Eichhorn, op. cit., p. 70.

the solution of a problem; by originality--the ability to give details after an idea has been presented; and by fluency--the facility to retrieve information in as many outputs as possible.[84]

Torrance, a prolific writer on creativity, conceived creative thinking as problem-solving:

> The process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies; testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.[85]

The rationale underlying this definition is that a creative act is not an isolated act, nor the sole product of a flash of momentary inspiration, and therefore it involves much of the same thinking required in problem solving.

Many investigators have pointed out that the individual personality structure, his motivation for instance, is a positive contributor to creative potential. Getzels and Jackson believe that:

> The creative adolescent seemed to need to free himself from the usual to diverge from customary behavior. He seemed to enjoy the risk and uncertainties of the unknown.[86]

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[84] J. P. Guilford, "Measurement and Creativity," Theory into Practice, 5 (1966), pp. 186-189.

[85] E. P. Torrance, Torrance Tests of Creative Thinking: Research Manual (New Jersey: Princeton Press, Inc., 1966), p. 6.

[86] J. Getzels and P. Jackson, Creativity and Intelligence (New York: John Wiley and Sons, 1962), p. 52.

Others have attempted to identify personality characteristics that could distinguish the creative individual from the non-creative individual. Houston and Mednick[87] found that the creative person has a strong need for novelty. Yamamoto[88] reported that creative adolescents are better group leaders. Flesher[89] reported that anxiety, for the creative individual, does interfere with his achievement.

Getzels and Jackson tried to find relationships between creativity and intelligence in their study of creative adolescents. Their results tend to provide convincing evidence that the highly creative adolescent differed significantly from his similarly intelligent but less creative peer. The creative students have a good sense of humor, have more vocational aspirations, and their values differ significantly from those of their teachers. One of the most significant findings was that intelligence was not a reliable predictor of creativity, and vice versa.[90]

In current research, however, there seems to be a trend to argue against the earlier findings on the basis of research

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[87]J. Houston and S. Mednick, "Creativity and the Need for Novelty," Journal of Abnormal and Social Psychology, 66 (1963), pp. 137-141.

[88]K. Yamamoto, "Creativity and Sociometric Choice Among Adolescents," Journal of Social Psychology, 64 (1964), pp. 249-261.

[89]I. Flesher, "Anxiety and Achievement of Intellectual and Gifted Children," Journal of Psychology, 56 (1963), pp. 251-268.

[90]Getzels and Jackson, op. cit.

instruments, designs, and test procedures. Eisner discusses this controversy when he writes:

> If our conception of intelligence were more adequate, if we conceived intelligence not merely as what intelligence tests test but as the efficient and effective utilization of means to achieve desired ends, then, the need for a separate concept of creativity disappears. In short I am suggesting that the reason creativity and intelligence seem to be unrelated is that we have been using in our research a restricted conception and measure of intelligence.[91]

Peers' and teachers' perceptions of creative students are significant in developing an individual's creative thinking. Teachers' ratings have been used by Torrance, who reported a negative relationship between high school students' test scores on creativity and teachers' selections of creative individuals. According to Torrance, teachers tend to dislike creative students and are unable to foster creativity if their values do not support it.[92]

The problem of fostering student creativity has been an important goal for education. Crutchfield believes that one of the dilemmas of education today is to provide individuality of instruction while continuing the growth of mass education.[93] To this effect, Torrance suggests that whenever

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[91]E. W. Eisner, "Research in Creativity: Some Findings and Conceptions," Childhood Education, 39 (1963), p. 375.

[92]P. E. Torrance, "Problems of Highly Creative Children," Gifted Children's Quarterly, 5 (1961), pp. 31-34.

[93]R. S. Crutchfield, "Instructing the Individual in Creative Thinking," in New Approaches to Individualization of Instruction (Princeton, New Jersey: Educational Testing Service, 1965), pp. 13-25.

teachers change their teaching methods, a new group of learners becomes high achievers.[94]

These views on problem-solving, creative thinking, and self-concept of ability to learn have long-range implications for education and the educational organization as a whole. For, implicit in these recommendations and research is the view that new approaches to classroom practices might have a positive impact on the learner's ability to perform and achieve. This position has been well summarized by Thelen, who writes:

> The schools "socialize" children, shaping them into the role of organization man and students. But the schools do not "educate" children because the process of education is a quest, voluntarily entered into, after meaning, and there is nothing voluntary about participation in the classrooms. Classroom practices are unnatural, unreasonable and "against nature."[95]

Socio-Emotional Growth

To assume that transescence is a complex phenomenon of interrelated mental and socio-emotional growth is generally agreed upon in the literature. Growth of any kind is a process of changing previous patterns and adapting new ones. The behavioral responses of transescents in this respect will be reviewed in terms of the problems they face in this process.

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[94]E. P. Torrance, "Scientific Views of Creativity and Factors Affecting Its Growth," Daedalus, 98 (1964), pp. 663-681.

[95]Herbert A. Thelen, "Some Classroom Quiddities for People-Oriented Teachers," in Bernard and Hucking, op. cit., p. 365.

A comparison of today's adolescent with the adolescent of several years ago shows that he has undergone considerable change.[96] Two recent studies of interests of pre-adolescents are illustrative of this introductory statement by Bauer. In 1960, by open-ended questionnaires, Sister Amatora studied the 10 most important interests of pre-adolescents in grades five and six. The results showed that first concerns, without any differences between sexes, were ownership or possession of objects. Ranking second for both boys and girls were items relative to a good life. Interests in school and education ranked sixth and ninth, respectively.[97]

A longitudinal study performed in a three-year junior high school in California showed that from 1947 to 1957, children's interests did not differ significantly. In 1964, however, the results indicated considerable changes in rank order of choice; the students' first five needs to study about were: (1) family relationships, (2) vocational preparation, (3) consumer education, (4) leisure, and (5) cooperative living values. Reporting about their doing or activity interests, they ranked the first five as follows: (1) leisure, (2) family relationships, (3) vocational preparation, (4) cooperative living values, and (5) consumer education.[98]

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[96]Francis Bauer, "Causes of Conflicts," NASSP Bulletin, 49 (1965), pp. 15-18.

[97]Sister M. Amatora, "Interests of Pre-Adolescent Boys and Girls," Genetic Psychology Monograph, 61 (1960), pp. 73-113.

[98]Phyllis L. Bush, "The Junior High School Students 1944-1964," NASSP Bulletin, 49 (1965), pp. 50-55.

From these results, one can conclude that the basic conflicts and therefore the real concerns of pre-adolescents are self-centered. Indeed, as Hamachek expresses it:

> One of the striking things we are currently discovering is that the most important ideas which affect students' behavior are those ideas or conceptions they have about themselves.[99]

Jersild stressed the importance of this self-image as essential for mental health. He feels that the schools are playing a major role and they are second only to the family in this respect.[100] Brookover, et al., reported that parents were perceived to be the most important significant others in the life of the adolescent, peers ranking second.[101]

Olson, studying transescents' home and family relations, reported that social expectations of the family environment were powerful determinants of learning behavior. Homes differ in the degree to which they stimulate, deprive, free, control, accept, or reject the child.[102]

A study by Morse showed, on the other hand, that self esteem seemed to be higher in the lower grades, and decreased as the child advanced through school grades. Therefore, the

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[99] D. E. Hamachek, ed., The Self in Growth, Teaching and Learning (New York: Prentice-Hall, Inc., 1965), p. 77.

[100] A. T. Jersild, In Search of Self (New York: Bureau of Publications, Teachers College, Columbia University, 1952).

[101] Brookover, et al., Concept of Ability and School Achievement, III (East Lansing: Michigan State University, 1967), pp. 107-109.

[102] W. C. Olson, Child Development (Boston: D. C. Heath Co., 1959), p. 223.

longer the child is in school, the less favorable are his responses to it. Morse added that the social self is improved with grades, thus inferring that schools are "socializing" children rather than making them secure about themselves.[103]

Davidson and Lang studied fourth, fifth, and sixth graders in the New York City school system. They reported that the children's self-concepts were directly related to their perceptions of how teachers felt about them.[104] Similarly, Flanders and Havumaki discovered that the effects of pupil-teacher interactions on the sociometric choices of the children were significantly correlated with teachers' praises. When contacts involving praise increased, the pupil's acceptance by his peers increased as well.[105]

These findings are largely supported by other research, and especially by the experiment of Rosenthal and Jacobson, which demonstrated that the teachers' expectations of children's successes had significant effects on self-concept and achievement in school.[106]

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[103] W. C. Morse, "Self-Concept in the School Setting," Childhood Education, 41 (1964), pp. 195-198.

[104] H. H. Davidson and G. Lang, "Children's Perception of Their Teachers' Thinking Toward Them Related to Self-Perception, School Achievement and Behavior," Journal of Experimental Education, 29 (1960), pp. 107-118.

[105] N. A. Flanders and S. Havumaki, "The Effect of Teacher-Pupil Contacts Involving Praises on the Sociometric Choices of Students," Journal of Educational Psychology, 51 (1960), pp. 65-68.

[106] R. Rosenthal and L. Jacobson, Pygmalion in the Classroom (New York: Holt, Rinehart and Winston, 1968).

Commenting on research findings, Morse concludes:

> While neither the self-picture nor the school self-esteem is pleasant, the school self appears to be even more negative. Whatever else we may have done, we have communicated a sense of personal failure to many of our pupils. . . .The longer we have them, the less favorable things seem to be.[107]

Peers are said to be important significant others in the child's formation of his self-concept. Presscott illustrated the influence of transescent relationships and peer grouping by stating that peers are the basic influence through which a child learns the way to get along with other persons.[108]

According to Ambrose and Miel, as the child moves into puberty and adolescence he is faced with the task of establishing "an identity, or determining who he is and what he is and his place in society is." The adolescent also has to learn to accept and live with a changing body. All of these concerns cause these youngsters a great deal of uncertainty.[109]

Jersild found that for most transescents, the single item most frequently mentioned when they were asked to describe what they liked or disliked about themselves, was physical characteristics. Thus, if a person has a positive

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[107] W. C. Morse, "Self-Concept Data in the University School Project," The University of Michigan Education Bulletin (1963), p. 52.

[108] D. A. Presscott, The Child in the Educative Process (New York: McGraw-Hill Co., 1957), pp. 277-278.

[109] E. Ambrose and A. Miel, "Children's Social Learning," ASCD (1958), p. 21.

body image, it is an important factor in the development of his self-concept.[110]

Jones and Bayley point out another aspect relative to body image in their finding that physical ability and strength were major contributors to popularity for junior high school boys.[111]

Gertrude Lewis recently conducted a study to provide insights into transescents and the middle school. From a sample of 2,000 students attending grades five through eight, she expresses:

> The frequency with which young people of these ages voice interests in body development and function, and in peers and family relations evidences that the desire to understand is not just one of mere interests but of real concerns.[112]

The most frequently mentioned areas of concern in all grades, without much difference between the sexes, were questions related to the body, its development and care; to mental health; and to peer and family relations. Lewis then concludes:

> The evidence shows clearly that boys and girls of ten to thirteen are not placid and unconcerned but are keenly aware of situations threatening their well-being, eager to cope with the present and be ready to meet the future. They appreciate the worth of a good body and mind. They desire profoundly to have the persistent and faithful

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[110] Jersild, op. cit., pp. 64-66.

[111] M. C. Jones and N. Bayley, "Physical Maturing Among Boys as Related to Behavior," Journal of Educational Psychology, 51 (1960), pp. 175-186.

[112] G. M. Lewis, "I Am--I Want--I Need: Preadolescents Look at Themselves and Their Values," Childhood Education, 46 (January, 1970), p. 187.

> love and trust of their parents. . . .They yearn for opportunities to talk with peers, to raise questions, to have honest answers. . . .They want very much to be assured of steady development as competent people.[113]

These studies suggest, then, that the middle school concept may offer an environment for the transescent, who is coping simultaneously with physical, mental, and socio-emotional problems. As Eisenberg comments:

> Development at each of these levels of integration proceeds not independently but with significant interaction, with events at any one level able to impede or to accelerate development at each of the others.[114]

The rationale underlying the middle school concept seems to receive greater support from the area of psychosociology. Living in a period of changes, the transescents are themselves different physically, mentally and emotionally than their parents. The major characteristics of this developmental phase are:

1. Rebellion against and withdrawal from adults and their values.
2. Intense narcissism, with a strong preoccupation with one's own body and self.
3. The peer group is of vital importance, serving as a way station during the transition from childhood to adulthood.
4. Sexual urges and feelings become intense (and are finding ways toward) heterosexual relationships.
5. Marked increase in aggressive urges, now supported by a corresponding increase in physical size and strength.
6. Marked increase in emotional and intellectual capabilities with a parallel broadening of interests and activities.

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[113] Ibid., p. 197.

[114] Leon Eisenberg, "A Developmental Approach to Adolescence," Children, 12 (1962), p. 132.

7. Attitudes and behavior in general are characterized by unpredictable changes and much experimentation.[115]

The middle school concept building upon the psychosociological model seems to propose a better scheme of organization to meet needs and interests of these youngsters during their transescent years. By focusing on the individual, it seeks to provide an organizational strategy consistent with today's trends toward flexibility and adaptability.

Summary

The review of literature and related research presented in this chapter was divided into three sections which constitute the theoretical framework of this study.

The first section was designed to portray two antecedents of the educational organization. As has been demonstrated, society creates educational institutions in order to achieve the universal and specific goals it considers important. Most of the history of school organization has been modeled after the bureaucratic pattern, which is now irrelevant in keeping pace with the space-age generation. From an emergent model of organization in action, the truths of the past are questioned and new modes of organizational behavior are proposed. The middle school concept is such a proposal, and can be understood as a gradual evolution to satisfy societal demands.

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[115] Normal Adolescence: Its Dynamics and Impact, op. cit., pp. 79-80.

In the second part, the rationale underlying the middle school concept as viewed by Eichhorn, Grooms, Brod, and Alexander are as follows: (1) to provide for administrative, curricular and organizational flexibility; (2) to induce new staff working relationship and training; and (3) to focus on transescents' growth and development. A survey of research on school organization and its effectiveness does not provide conclusive evidence for the school administrator to decide for one pattern over another.

The third part presents characteristics of transescents and their physical, mental and socio-emotional growth. In this section, the studies of Tanner, Espenshade and Meleney, Sarnoff, O'Neil, Broderick and Fowler, and Mead demonstrate that today's youth's physical growth and maturity occur at an earlier age than before. These studies indicate a need for a transitional school that would integrate these findings in its organizational and curricular design.

Piaget, Bayley, Brookover and Erickson, Guilford, Torrance, Houston and Mednick, Yamamoto, Flesher, and Eisner, in their analyses of mental growth and creativity during the transescent years, concur that this period is characterized by the attainment of logical thinking and problem-solving abilities. This provides the middle school concept with a unique responsibility to develop and exploit the parallel broadening of interests and activities in their learning environment.

The research and opinions of Amatora, Bush, Hamachek, Jersild, Olson, Morse, Flanders and Havumaki, Rosenthal and Jacobson, Presscott, Miel, Jones, Bayley, and Lewis indicate that the transescents' problems are mostly self-centered. Adaptation to the self which takes place during these years is inferred and learned from contacts with parents, teachers, and peer groups. School for this age-group, then, should have a flexible organizational and curricular design to foster healthy experiences in a secure environment.

CHAPTER III

DESIGN AND METHODOLOGY

Introduction

School administrators in the last two decades concerned with the improvement of their educational organization have been faced with a variety of propositions that leads them to alter the functional design of their school system. These changes, on the other hand, are hypothesized to be instrumental in providing better environment for learning and teaching. It is generally assumed that global and specific organizational conditions of the middle school concept best meet the physical, mental and socio-emotional characteristics of the transescent.

On the basis of theoretical formulations and research findings discussed in Chapter II, this study was designed to assess the impact of two organizational structures, the middle school and the junior high school, on the behavior of their students. Four researchable hypotheses are made relative to the differences expected upon the students attending these two school organizations.

Hypothesis and Sub-Problems

Major Problem

The purpose of this research was to determine if there is a significant positive difference between the group behavior of middle school students compared to junior high school students as measured by socio-emotional problems, self-concept of ability, creative thinking, and physical fitness and health characteristics.

General hypothesis.--There is a significant positive difference between the mean scores of middle school students and the mean scores of junior high school students on measures of socio-emotional problems, self-concept of ability, creative thinking, and physical fitness and health criteria.

Four researchable sub-problems are related to this major hypothesis. They are presented below with their specific hypotheses.

Sub-Problem I

To determine if there is a significant difference between middle school students and junior high school students on a checklist of socio-emotional problems.

Hypothesis I.--There is a significant positive difference between the mean scores of middle school students and the mean scores of junior high school students on the Mooney Problem Checklist.

Sub-Problem II

To determine if there is a significant difference between middle school students and junior high school students on the self-concept of ability to learn.

Hypothesis II.--There is a significant positive difference between the mean scores of middle school students and the mean scores of junior high school students on the Michigan State University General Self-Concept of Ability Scale.

Sub-Problem III

To determine if there is a significant difference between middle school students and junior high school students on selected measures of creative thinking tasks.

Hypothesis III.--There is a significant positive difference between the mean scores of middle school students and the mean scores of junior high school students on selected Torrance Tests of Creative Thinking.

Sub-Problem IV

To determine if there is a significant difference between the scores of middle school students and the scores of junior high school students on standard tests of physical fitness and health.

Hypothesis IV.--There is a significant positive difference between the mean scores of middle school students and the mean scores of junior high school students on the AAHPER Youth Fitness Inventory.

Selection of Schools

In the early planning stages of this investigation, it was decided that rather than test a large number of schools for each of these two types of organization, a representative sample of a junior high school and a middle school would be identified for testing.

The problem of representativeness was twofold. First, there are many junior high schools that are called middle school without the appropriate changes in their organizational setting. The criteria for judging a truly middle school are provided in Chapter II, according to William Alexander's requirements.[1] Secondly, there was the problem of comparability of the research sites. The locality for this research was selected in order to control for environmental variables that might contaminate and confuse the analysis. This aspect of similarities of the research samples appeared to be of importance because the American system of education has been characterized by a long tradition of local control.[2] Thus, when the educational policies are decided at the local level, the wealth of the community, its occupational and business bases, its ethnic composition, the educational level of its residents, all become relevant factors in the formulation of the educational demands of the district. These factors will

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[1]William Alexander, "The Junior High School: A Changing View," Bulletin of the National Association of Secondary School Principals, XLVIII (March, 1964), pp. 15-24.

[2]Frederick W. Terrien, "Who Thinks What About Education," American Journal of Sociology, LIX (Sept., 1963), pp. 150-158.

in turn have a significant effect upon the quality of the educational experience offered to its students.

To eliminate extreme variation the two schools were selected because they were judged to be representative of their respective emphases and because they were highly comparable on most dimensions of environmental factors. To assess this homogeneity, a questionnaire answered by the school principals provides data on physical and functional aspects of the schools and the community. (See Appendix B.) Table 1 presents data on these characteristics of the sample schools observed in this study.

A visual inspection of Table 1 shows that the size of the school and its enrollment are comparable. Population similarities are consistent. Most important, there is close comparability on student-teacher ratio. The junior high school has two counselors and spends more money for instruction than the middle school. These figures reflect the representativeness of the community and of the school. Differences, while they exist, do not seem sufficiently great to exclude the schools as samples for this research. There is sufficient similarity on all other dimensions of socio-economic status, physical and functional characteristics of the schools to carry out the study.

Educators are recognized to be one of the most important factors to influence the behavioral development of the students. While it was impossible for practical reasons outside of the investigator domain to test the organizational

Table 3.1.--Socio-Economic Status, Physical and Functional Aspects of the Schools and Communities as Reported by the School Principals.

	Middle School	Junior High
A. Communities		
Type of community	suburban	suburban
Type of dwellings	residential	residential
Major industries	few small private businesses	few small private businesses
B. Schools Characteristics		
1. Physical Aspects:		
Size of School	73,100 sq.ft.	111,238 sq.ft.
Total Cost	$1,137,268.00	$1,361,514.37
Total General Funds Expenditures	$638.37	$761.60
Total Per Pupil Instructional Expenditures	$448.06	$532.02
Capacity (est.)	700	770
Present Enrollment	535	920[a]
Grades Included	6-7-8	7-8-9
2. Functional Aspects:		
Assistant	1	0
Faculty	23	35
Student-teacher ratio	23-1	27-1
Counselor	1	2
Physical facilities:		
No. of classrooms	24	29
Auditorium	0	0
Library	1	1
Cafeteria	1	1
Gymnasium	1	1
Instructional Materials Center	1	0
Multi-purpose Room	0	1

[a]Include approximately 80 students coming to the school once a week for a half session in Math, Science, Home Economics, Home Mechanics, and Physical Education.

climate of the schools which could determine and control the influence of internal environmental variables, biographic data were provided by the school principals to ascertain the similarities of the faculty and its representativeness. Table 2 provides comparisons on faculty size, sex, qualifications, and teaching experience.

Table 3.2.--Comparisons of Teacher Characteristics.

	Middle School N=28	Junior High N=35
Sex		
Male	16	19
Female	12	16
Qualifications		
BA, BS	22	24
MA, MM	6	10
DD	0	1
Teaching Experience		
1- 5 years	15	19
6-10 years	7	4
11-15 years	3	8
16-20 years	3	-
21 + years	-	4

The total faculty size of the schools, which is 35 for the junior high school and 25 for the middle school, is explainable because of differences of student enrollments. Apart from the factor of faculty size, which is greater for junior high than for the middle school, similarities about sex, qualification and experience in teaching are comparable, with one exception. The junior high school had four teachers

with more than 21 years of experience, two males and two females, two with a Master of Arts degree, one with a Master of Music degree, and one with a Bachelor of Science degree. The range of experience over 21 years was 24 to 26. The school also reported one male teacher holding a D. D. degree.

Selection of the Sample

The purpose of this research was to assess the impact of two organizational plans upon the behavior of the students. Therefore, once the schools were chosen, to insure comparability in drawing the sample, only seventh and eighth graders were selected. Since the numbers of seventh grade and eighth grade students were unequal, it was decided to select a representative sample of students from each of these grades in each school. The method decided upon was to use a table of random numbers and select 50 students in each grade from the total population of seventh and eighth graders. It was assumed that this sampling procedure would provide four groups of students comparable in all respects, except for differences due to school organization and differences which might be attributable to chance alone.

Nevertheless, since previous studies have shown that socio-economic status was related to behavior, it was decided to have a check on student characteristics. All subjects were asked to list their age, sex, grade, father's occupation, educational level, and level of income as factors of socio-economic status. (See Appendix C.)

Deleted from the study were all students who were not similar in terms of age, grade, socio-economic status and I.Q. All transfers from other school districts to either the junior high or the middle school were also eliminated. These decisions were taken by examining biographic data questionnaires and after consultations with the school principals and counselors. Students who were selected but who were absent on testing sessions were also deleted. No efforts were made to obtain an equal number of girls and boys and their scores were not treated differently. Data were analyzed for a total of 108 students.

Furthermore, since the statistical analysis and design of the study would be facilitated by equal sample size, random procedures were used to eliminate students so that an equal number of students would be available in each sub-group. The research sample is made up of four sub-groups of 27 students. Table 3 provides data on the characteristics of the student samples under investigation as reported by the students and further checked by the school counselors. (See Table 3, page 80).

Selection of Variables

The choice of the variables to be considered in this study was deliberate rather than random. They were chosen for practical as well as for theoretical reasons, namely because: (1) they have been associated with the characteristics and needs of transescents' growth and development,

Table 3.3.--Demographic Data on the Subjects Included in the Study.

		Middle School N=54		Junior High N=54	
		7th	8th	8th	8th
Sex	Boys	15	18	16	15
	Girls	12	9	11	12
Age	11	6	--	9	--
	12	17	5	15	5
	13	4	22	3	19
	14	--	--	--	3
Socio-Economic Status	1 $ 0- 5,000	--	--	--	--
	2 $ 5,001-10,000	6	8	5	6
	3 $10,001-20,000	19	18	20	18
	4 over $20,000	2	1	2	3
Father's Education	High School	12	16	12	8
	College	15	11	15	19

(2) they were statistically measurable, and (3) they were accessible.

Research cited in Chapter II suggests that there are several criteria that are worth considering and are meaningful to middle school proponents. The dependent variables used in the study were: (1) socio-emotional problems, (2) self-concept of ability to learn, (3) creative thinking ability, and (4) physical fitness and health. These variables were defined in Chapter I.

The independent variables were grades and type of schools.

Selection and Description of the Instruments Used

In order to make comparisons between the two types of school organization, it was necessary to obtain measures of the criteria and the group behavior of both the experimental and the control group. For this purpose, a series of tests was selected, from which the performance level was inferred.

The data required for testing the hypothesis of this investigation were collected by means of four instruments. The Mooney Problem Checklist: Junior High School Form, was used to obtain information regarding the socio-emotional problems of students; the Michigan State General Self-Concept of Ability Scale was used to gather data regarding perceived self-concept of ability. The Torrance Tests of Creative Thinking were used to obtain information about the creative thinking ability of students on selected areas of verbal and figural tests; and finally the AAHPER Youth Fitness Inventory was used to provide information on physical fitness and health. This section deals with the description and the utilization of these tests in the research analysis. (Copies of these instruments are included in Appendices D, E, F and G of this thesis.)

The Mooney Problem Checklist

The Mooney Problem Checklist was selected as the instrument for determining the awareness of personal problems of transescents, their worries and anxieties. As emphasized by its author, the instrument is not a measuring device in itself. It is a checklist of problems stated briefly in a sentence which students have identified as being a matter of concern to them. The Junior High Form contains 210 items, 30 in each of the following areas:

I. Health and Physical Development (HPD)
II. School (S)
III. Home and Family (HF)
IV. Money, Work, Future (MWF)
V. Boy and Girl Relations (BG)
VI. Relations to People in General (PG)
VII. Self-Centered Concerns (SC)

The instrument was selected for various reasons. First, it seemed to offer the best promise of valid results. This conclusion was reached by reviewing many of the previous studies using the Mooney Problem Checklist. Second, it seemed to be the consensus of educational authorities that The Problem Checklist is simple to use, it facilitates accurate responses, and the coverage of problems is adequate for this age group of students. Fourth, the decision was influenced by the fact that the test is a six-page folder, self-reporting and self-administered, is easily scored and tabulated, and lends itself to statistical computation. The

test provides a frequency distribution of problems in the two school settings.

According to Mooney,[3] the Checklist differs in many respects from traditional methods of test construction and therefore, many of the usual criteria for tests do not apply. The Checklist yields a count, not to be considered a score on traits or permit statements about the adjustment status of the respondents. Jones makes the point when he states:

> Since the list is not designed to produce "scores" and no normative data or correlational data are supplied, it cannot be assessed with regard to the usual concept of reliability and validity, chief attention is directed to the individual items as significant data.[4]

Thus, it is used here mainly as an instrument well designed to throw light on educational needs, to study problems clusters, and to see if there are differences among groups of students.

The Reliability of the Instrument

Gordon,[5] in a study using the Problem Checklist, concluded that the problems facing individuals remained reasonably stable over periods of time. In his study, the

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[3]Ross L. Mooney and Leonard V. Gordon, Manual: The Mooney Problem Checklist (Revised ed.; New York: The Psychological Corporation, 1950), p. 5.

[4]Harold E. Jones, "Review of the Mooney Problem Checklist," in The Fourth Mental Measurement Yearbook, ed. by Oscar K. Buros (New Brunswick, N.J.: The Greyphon Press, 1953), pp. 137-139.

[5]L. V. Gordon, "The Reflection of Problem Changed by the Mooney Problem Checklist," Educational-Psychology Measurement, 9 (1949), pp. 749-752.

Checklist was administered twice to the same group of students within a nine day interval. A correlation coefficient of .93 was found between the items which were marked on the first administration of the Checklist and the items marked on the second administration.

Similarly, Mooney[6] repeated the administration of the Problem Checklist from one to ten weeks after the first administration to four groups of students. The rank order correlation coefficient ranged from .90 to .98.

Buros,[7] in the Sixth Mental Measurement Yearbook, states that the Mooney Problem Checklist has value for research purposes and unlike other instruments, has not been a disappointment because it promised little and produced so very much. Thus, although there are some data provided for the Checklist on its reliability and validity, no norms are available. The students are asked to check problems voluntarily and randomly, rather than consecutively.

The Michigan State General Self-Concept of Ability Scale

The Self-Concept of Ability Scale is a test consisting of eight multiple choice items with five response activities. The items are coded from 5 to 1, with the higher self-concept alternatives receiving higher values.

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[6] Mooney and Gordon, op. cit., p. 9.

[7] Oscar Buros, "Review of the Mooney Problem Checklist," The Sixth Mental Measurement Yearbook (New Brunswick, N. J.: Rutgers University Press, 1964), pp. 145-148.

The scale was designed to measure the construct of self-concept of ability, ability in this case being restricted to academic ability to learn. All items were constructed as to be appropriate for junior high school level students. The scale was selected for its established reliability and validity when measuring self-attitudes toward school and learning.

As to reliability of the self-concept scale, Brookover et al. state:

> The scale, consisting of eight multiple choice items, originally formed a Guttman scale with a coefficient of reproducibility of .95 for males and .96 for females for 1050 seventh grade students. In the eighth and ninth grades, random sample of 35 males and 35 females indicated that these items retained a scale form with reproducibilities of .96 and .97 for males in the 2 years. . . .Reliabilities calculated by Hoyt's Analysis of Variance are .82, .91, .92, and .86 for males and .77, .84, and .84 for females in the 7th, 8th, 9th and 10th grades, respectively.[8]

Recently, a study of the construct validity of the Michigan State University General Self-Concept Scale was made by Paterson to evaluate the instrument. She gathered data for 513 male and 537 female 7th grade students in four junior high schools and compared these data to the students' grade point averages. She concludes: "The SCA Scale scores are significantly and positively correlated with GPA (r=.57 for each sex.)"[9]

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[8]Wilbur Brookover, et al., Self-Concept of Ability and School Achievement, U. S. Office of Education, Cooperative Research Project No. 845 (East Lansing: Office of Research and Publication, Michigan State University, 1965), pp. 51ss.

[9]Ann Carlson Paterson, "An Evaluation of an Instrument Designed to Measure the Construct Self-Concept of Academic Ability (Unpublished Ph.D. thesis, Michigan State University, 1966).

The Torrance Tests of Creative Thinking

The creative abilities of seventh and eighth grade students were measured by three tasks activities of the Torrance Tests of Creative Thinking.[10] The batteries of the Torrance Tests are composed of two verbal and two figural forms that can be used from kindergarten through graduate school. Each task is believed to bring into play different mental processes and each activity requires the subjects to think in divergent directions, i.e., in terms of various possibilities.

Three tasks were chosen for this investigation. They were the "Ask Questions" and "Unusual Uses of Cardboard Boxes" from the Verbal Tests: Form A and B. The third activity is the Circles Test and was taken from the Figural Tests: Form B. Each of the test tasks is scored in three ways to produce three distinct creative thinking measures: fluency of ideas, originality, and flexibility. Since each test is designed to measure a specific type of divergent thinking, a total of nine scores was derived.

Scoring Procedures.--Fluency in all three tests is a count of the total number of adequate responses. Assuming that the subjects understand the instructions, all of their answers are likely to be adequate and each distinct idea was a count for fluency point. In the Verbal Test: Form A, where

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[10] Paul E. Torrance, Torrance Tests of Creative Thinking, Norms - Technical Manual: Research Edition; Verbal Tests, Form A and B; Figural Tests, Form A and B (New Jersey: Personnel Press, Inc., 1966).

the subjects are required to ask questions, the report of simple statements about the picture is considered inadequate, as are questions which are unrelated to the picture and those which can be answered by simply looking at the picture. For the Unusual Uses of Cardboard Boxes, the fluency score is the number of different names used. In the Circle Tests, fluency is simply the number of responses minus the number of duplication and irrelevant responses.

Originality scores are related to statistical infrequency of the response occurrence and are assumed to be an indicator of an individual to get away from the obvious and the commonplace. Weights of one or two points are given for these activities according to the scoring guide.

Flexibility categories are measures of a person's ability to break out of a mental rut from one chain of related ideas to another. The category number of most responses is looked up in the list of categories from the scoring guide.

The scoring guide and the use of scoring criteria provided with the booklets provide a high score on reliability, as mentioned by Torrance. As the author points out, the dominant factor of low reliability is failure to read and follow carefully the instructions provided.

The concept of an overall validity coefficient for tests of creative thinking is inappropriate, for the test tasks do not sample the entire universe of creative abilities.

The AAHPER Youth Fitness Inventory

The health and physical fitness of both boys and girls in grades seven and eight were measured by the AAHPER Youth Fitness Inventory: Junior High School Form, revised edition, 1965.[11] The instrument is designed to measure physical fitness for boys and girls in grades 5 through 12. The test gives an overall picture of the transescent's general fitness and is the only test for which national norms are provided.

The test battery includes seven items which can be given indoors or outdoors, and measures different elements of strength, agility, endurance, proficiency in running, jumping and throwing. The test items are: (1) pull up (flexed-arm hang for girls), (2) sit-up, (3) shuttle-run, (4) standing broad jump, (5) 50 yard dash, (6) softball throw for distance, and (7) 600-yard runwalk.

The reliability and validity of the instrument are well known and one is invited to review pertinent literature to assess the uniqueness of this nationally used test.

Procedures for Data Collection and Treatment of Data

The first step in data collection was to obtain the necessary cooperation of each school involved in the study and to request their help for testing administration. A

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[11]American Association for Health, Physical Education, and Recreation, Youth Fitness Test Manual (Revised edition; Washington, D.C.: Department of the National Education Association, 1965).

letter was sent to each principal outlining the purposes and procedures of the investigation. To secure participation from the schools, it was promised that no names or identification of persons would be used in the report of this study and that neither the teachers nor the students would be asked to identify themselves on the research instruments.

As soon as permission was granted, visits were planned to each school to answer and to advise on questions and procedures about the students' selection, and the administration of the tests. The administration of the tests required the help of the school counselors. This procedure was thought necessary to eliminate possible confounding variables caused by the presence of an outsider and to reduce the "I am a guinea pig" effect as reported by Campbell and Stanley.[12]

Two meetings with the school counselors of each school were arranged to provide them with a complete set of test booklets and manuals, to explain the purposes and the extent of the study, and the materials to be used. Each manual gave detailed instructions for administering the tests and included verbatim to the students. Three testing sessions were administered simultaneously in the schools during the last week of October, 1969.

The biographic questionnaires of the students were handled by the school administrators and counselors. All the tests were self-administered and took place in the

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[12]Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally and Co., 1966.

classrooms. Each instrument required the students to mark their answers on the test booklets rather than on a separate answer sheet.

The investigator was responsible for data processing of the testing materials. This involved scoring the tests and transcribing the information from the instruments which were key punched on IBM cards by the staff of MSU computer center. This involved: (1) matching the individual serial numbers with appropriate school code, and (2) controlling and verifying the scoring of test responses and data cards. After the data had been transferred to IBM punch cards they were prepared for several analyses which were run on Michigan State CDC 3600 computer.

Statistical Design and Analysis

Data were analyzed using the statistical procedures for analysis of variance of repeated measures. The 1604 Analysis of Variance computer program written by Jennrich (1961)[13] was used in this analysis because it fit the experimental design of the study and tested the hypothesis produced by this design. The statistical design matrix is presented in Figure 1.

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[13] R. Jennrich, "1604 - Analysis of Variance," University of Wisconsin Laboratory Bulletin, Numerical Analysis Department, May 15, 1961.

Figure 3.1.--Experimental Design for Analysis of Variance of Repeated Measures.

Types of Schools		R_1	R_2	R_3	R_4
Middle School	7th 8th	S C	O		
Junior High	7th 8th			R	E S

The sources of variance of this design and an explanation of their significance are stated below:

(T) Treatment or types of schools, T_1= middle school and T_2= junior high; between groups treatment main effect.

(G) Grades of students, G_1= 7th graders; G_2= 8th graders; between groups treatment main effect.

(S:TG) Subjects within schools and grades; error term for main effects.

(R) Repeated measure; between measures effect.

(TG) Schools by grades; interaction effect.

(SR:TG) Groups by repeated measures within schools by grades; error term for interaction effects.

(TGR) Schools by grades by repeated measures; second order interaction effects.

An overall test of significance was computed by a three-way analysis of variance of repeated measures. The analysis of repeated measures effect was not important in this experiment since each test differed in the degree of difficulty and each test examined different kinds of behavior. The analysis of differences resulting from treatment effect of schools was of vital importance. Significant differences found in this factor would offer evidence to reject the null hypothesis and would allow post-hoc examinations and analysis to determine where differences existed. Significant interaction effects would also be important. Examination between groups would indicate which schools seem to provide best for the needs of transescents in terms of the measured criteria and to what degree in relation to grades.

Since the hypotheses were stated by variable in a directional fashion, the multiple "t" tests method was chosen for post-hoc comparison of groups when significant differences were found. As indicated by Hays,[14] this is the most likely method of preventing the occurrence of a Type 1 error. The application of this test would also decrease the opportunities for significant differences; i.e., it is a conservative test. As indicated by Hays, this method is preferable to Scheffé for post-hoc comparisons when the samples are of equal size and the experimenter's interest lies in all possible pair wise comparisons between means.

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[14]W. Hays, Statistics for Psychologists (New York: Holt, Rinehart and Winston, 1963), p. 484.

Included in the formula is the .01 critical value instead of the .05 critical value used by the investigator when conducting the original analysis of variance. Hays[15] explains this by noting that when the "F" test is significant at the prescribed critical value, then some comparison between groups must be significant at or beyond that same level. Therefore, when significance is found, the experimenter inspects the results of the analysis and makes judgements about where the large and interpretable effects lie. This process establishes which group means comparisons ought to be made.

In this study the multiple "t" tests method was applied to total treatment effects and to the interactions found in each independent measure. The interactions were plotted in graphic form and the results were explained. In the study of the interaction effect a conservative test was used to insure against Type 1 error. This process was suggested by Greenhouse and Geisser whenever the analysis of repeated measures design was used.[16] The procedure called for reducing the degrees of freedom by multiplying them by the factor 1/(p-1), where "p" is the number of repeated measures. Consequently, in the analysis of the data only 1 and 104 degrees of freedom were used in analyzing interaction effect rather

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[15] Ibid.

[16] S. Greenhouse and S. Geisser, "On Methods in the Analysis of Profile Data," Psychometrika, 24 (June, 1959), pp. 95-112.

than 3 and 312 degrees of freedom. This takes into account the required assumption that in repeated measures analysis of variance, the variance-covariance matrix of repeated measures by repeated measures must have an equal-off diagonal element.

In all of the statistical treatments of the data, the .05 criterion level of significance was established as the minimum criterion for accepting mean differences as being significant. Throughout the study, when appropriate, higher levels of significance were reported.

Summary

This chapter of the research presented the hypothesis and sub-problems investigated in this study. A description of selection of schools, selection of sample, selection of variables, and instruments used to compare the control and the experimental group has been detailed. The procedures for data collection and treatment of data have been presented, along with demographic tables. Finally, the statistical design and analysis applied to the data have been described. The findings will be presented and discussed in Chapter IV.

CHAPTER IV

ANALYSIS OF DATA

Introduction

The research hypothesis presented in Chapter III was concerned with determining the existence of a significant difference in the group behavior of students attending the middle school and the junior high school. This comparison was made on the basis of four dependent variables, namely in terms of socio-emotional problems, self-concept of ability to learn, creative thinking ability, and physical fitness and health. The independent variables were schools and grades.

The data presented in this chapter were collected in two public schools from a Northwestern city of Michigan. The total sample consisted of 108 transescents. The sub-samples of subjects observed numbered 21 girls and 33 boys from the middle school and 23 girls and 31 boys from the junior high school.

Procedures

The analysis of data from formulative evaluation[1] resulted from tests administered to the four groups of

[1]Formulative evaluation is used by Flanagan to mean "evaluation which takes place during the organizational phase of a new program."

students on the stated criteria. They will be discussed as follows:

1. The hypothesis and subsequent analysis of sub-problems are presented in the same order as in their theoretical development in Chapter I.

2. The source table for the analysis of variance by repeated measures performed on the data will be presented. Discussion will concentrate on the two sources of variance for which significant differences were found; i.e., total treatment main effect of schools, and interaction.

3. Post-hoc comparison procedures will be performed on the group means for treatment main effects by the use of multiple one-tailed "t" tests. The findings will be discussed according with the suggested conclusions.

4. Groups by repeated measures mean scores will be plotted in graphic forms for each of the tests where significance was found. Each test will be examined and discussed separately for both treatment effect and interaction.

General Hypothesis

The statistical hypothesis examined in the analysis of data was stated as below in the null form:

Hol: There is no significant difference between the mean scores of middle school students and the mean scores of junior high school students on measures of socio-emotional problems, self-concept of ability to learn, creative thinking ability, and physical fitness and health.

To evaluate this hypothesis the procedure used was the analysis of variance of repeated measures statistical treatment. The source table generated by this analysis is reported in Table 4.1, and the group mean scores values are presented in Table 4.2.

Table 4.1.--Source Table for Analysis of Variance of Repeated Measures on Data Related to Socio-Emotional Problems, Self-Concept of Ability to Learn, Creative Thinking Ability and Physical Fitness and Health.

Source of Variation	df	M.S.	F	F.05
Schools	1	4498.231	14.204	S[a]
Grades	1	213.925	.676	N.S
Repeated Measures	3	46423.858	149.740	S[a]
Schools by Grades	1	621.120	1.961	N.S[b]
Schools by Repeated Measures	3	666.249	2.149	N.S[b]
Grades by Repeated Measures	3	41.623	.134	N.S[b]
Schools by Grades by Repeated Measures	3	331.705	1.070	N.S
Subjects within Schools by Repeated Measures	104	316.681		
Subjects by Repeated Measures within Schools by Grades	312	310.022		

[a]Significant at the .01 level.

[b]Degrees of freedom reduced for repeated measures as suggested by Greenhouse and Geisser (1959).

Table 4.2.--Schools Mean Scores by Repeated Measures on Socio-Emotional Problems, Self-Concept of Ability to Learn, Creative Thinking Ability, and Physical Fitness and Health.

Schools	Socio-Emotional Problems	Self-Concept	Creativity	Physical Fitness and Health
Middle School	39.944	29.315	33.093	75.111
Junior High School	28.370	29.519	24.796	68.963
Differences	11.574	-.204	8.297	6.148

Findings

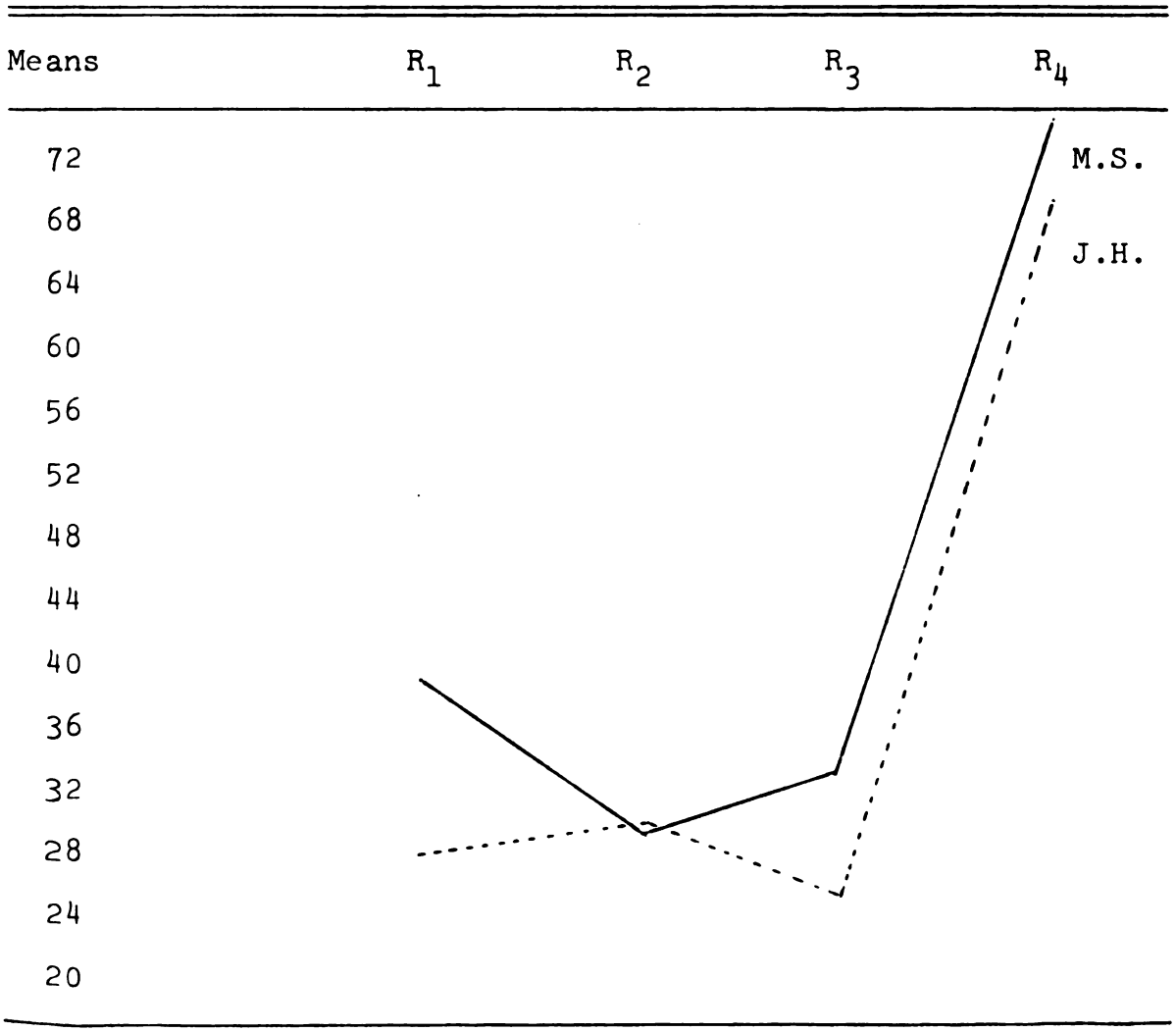
The research hypothesis of main treatment effect of schools was accepted and confirmed the expected beyond the .05 level of significance, as indicated in Table 4.1. It was also observed that repeated measures source of variance was significant beyond the .05 significance level. This finding, however, was of little value in this study. The meaning of this significant difference was that the four treatments had different overall means. It was logical to assume this result since each test assessed different aspects of the transescent characteristics. Therefore, the null hypothesis was rejected in favor of the research hypothesis, which stated that the middle school students' mean scores would be significantly different from the mean scores of junior high school students. The main treatment effect of grades was not significant. Thus, grades as an independent variable did not

contribute to the overall difference between the two groups of students in this study.

Post-hoc Comparisons

While a significant main treatment effect does not tell which means differ significantly from the other, and since there were no statistical interactions between the schools by repeated measures, a graph of the group mean scores for each variable was plotted in Figure 4.1.

Figure 4.1.--Schools Mean Scores by Repeated Measures.



Visual inspection of this figure indicated that the overall significant effect of the calculated "F" value might be more a function of some variables than others. Thus, in order to assess which main treatment effect caused overall significance, it seemed appropriate to test the group mean scores across all variables.

Because the hypothesis about group difference was stated in a directional fashion and since the overall level of alpha was desired to be less than, or equal to $\alpha = .05$, a one-tailed "t" test at $\alpha = .01$ was calculated.

The formula used is as below, with an explanation of factors and values substituted within the formula.

t-test formula:

$$.01, t_{208} = \frac{\hat{\psi}}{\sqrt{\text{MS error } (\frac{t}{nt})}}$$

where $\hat{\psi}$ = sample weighted comparison between means $\sum_{t=1}^{t} c_T \bar{X}_{T...}$

t = denotes number of levels of T=2

N_T = number of observations in each group = 54

df = degrees of freedom reduced for conservative test = $104+\frac{312}{4-1} = 208$

$\alpha .01,208$ = the critical value for a one-tailed "t" test at $\alpha .01$ with 208 df is = 2.326

$$\text{MS error} = \sqrt{\frac{SSs:TG + SSsr:TG}{(s-1)tg+(s-t)(r-1)tg}} = \sqrt{311.6869}$$

$$= \frac{\hat{\psi}}{\sqrt{311.6869\ (\frac{2}{54})}} = \frac{\hat{\psi}}{3.39763}$$

Post-hoc comparisons: (t.01 = 2.326)

R_1 = 11.574 / 3.3976 = 3.4065 S

R_2 = -.204 / 3.3976 = -.6004 N.S

R_3 = 8.297 / 3.3976 = 2.4420 S

R_4 = 6.148 / 3.3976 = 1.8095 N.S

Findings

The results of these post-hoc analyses showed that only two means were statistically significant at the .01 level; the mean scores for socio-emotional problems and the mean scores for creative thinking ability. It was concluded that they were the contributors for the overall significance of "F." Therefore, within the limits of this study, the results indicated that the organization of the schools did seem to affect the behavior of middle school students when compared to junior high school students on these two cited variables. The calculated group differences on the measures of self-concept of ability and physical fitness and health revealed, however, no statistical differences between the groups. Thus, in general, the type of school experience did have a relative effect on the group as a whole. It did not have a consistent effect on seventh or eighth graders on measures of self-concept and physical fitness and health.

Socio-Emotional Problems

In order to assess the main treatment effect of socio-emotional problems, the hypothesis of no difference was submitted to analysis of variance.

$H_{o}2$: There is no significant difference between the mean scores of middle school students and between the mean scores of junior high school students on the Mooney Problem Checklist.

The procedure used to evaluate this hypothesis was the analysis of variance of repeated measures. The source table of the data is reported in Table 4.3.

Table 4.3.--Source Table for Analysis of Variance of Repeated Measures on Data Related to the Mooney Problem Checklist.

Source of Variation	df	M.S.	F	F.05
Schools	1	558.862	6.409	S
Grades	1	21.000	.241	N.S
Repeated Measures	6	141.746	18.173	S[a]
Schools by Grades	1	158.354	1.816	N.S[a]
Schools by Repeated Measures	6	34.276	4.395	S[a]
Grades by Repeated Measures	6	7.290	.935	N.S[a]
Schools by Grades by Repeated Measures	6	8.317	1.067	N.S[a]
Subjects within Schools by Repeated Measures	104	87.200		
Subjects by Repeated Measures within Schools by Grades	624	7.800		

[a]Degrees of freedom reduced for repeated measures as suggested by Greenhouse and Geisser (1958).

Findings

The hypothesis of main treatment effect of schools was accepted and confirmed the expected research hypothesis at the .05 level of significance. The repeated measures effect

was also highly significant, which means that the seven subsets of the Mooney Problem Checklist measured different problem areas. It was concluded that middle school students had more problems than junior high school students.

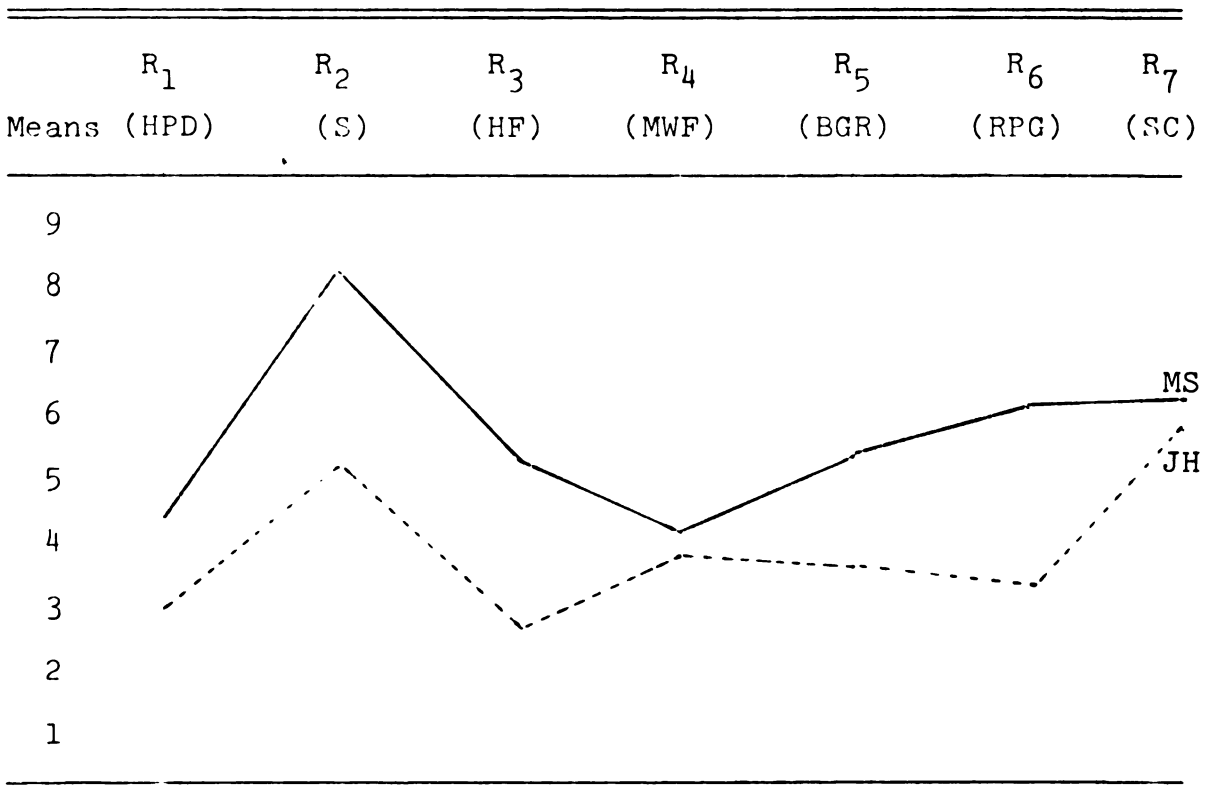
From Table 4.3, a statistically significant interaction effect of schools by repeated measures is reported. Thus, a graphic presentation of the group mean scores was deemed necessary to visualize the differences between the two groups. Table 4.4 presents the means for each subset.

Table 4.4.--Schools Mean Scores by Repeated Measures on the Mooney Problem Checklist.

	Socio-Emotional Problem Area						
	HPD	S	HF	MWF	BGR	RPG	SC
Middle School	4.444	8.352	5.315	4.296	5.407	6.185	6.222
Junior High	3.130	5.204	2.741	3.815	3.685	3.574	6.037
Differences	1.314	3.148	2.574	-.481	1.722	2.611	-.185

From inspection of Figure 4.2, page 104, it is evident that middle school students reported more socio-emotional problems than the junior high school students on each subset of the Mooney Problem Checklist. To understand if the magnitude of the differences between the groups were statistically significant, multiple "t" test comparisons were performed on the mean scores of each variable.

Figure 4.2.--Schools by Repeated Measures of the Mooney Problem Checklist.



Post-hoc comparisons: ($t_{.01} = 2.326$)

$$.01,t_{208} = \frac{\Psi}{\sqrt{\text{MS error}\ \frac{n}{n_T}}} = \frac{\Psi}{.83520}$$

R_1	=	1.314 / .835	=	1.573	N.S
R_2	=	3.148 / .835	=	3.770	S
R_3	=	2.574 / .835	=	3.081	S
R_4	=	-.481 / .835	=	-.576	N.S
R_5	=	1.722 / .835	=	2.622	S
R_6	=	2.611 / .835	=	3.007	S
R_7	=	-.185 / .835	=	-.2215	N.S

These results suggest that as a group, significant differences between the students housed in the middle school, when compared to students in the junior high school, were found in the four problem areas of "school," "home and family," "boy-girl relations," and "relations to people in general." No significant differences were found between the groups on the subsets of "health and physical development," "money, work and future," and "self-centered concerns."

By analyzing the average numbers of problems marked on each area, the respondents from the middle school rated their real concerns from highest to lowest in the following order: (1) "school," (2) "self-centered," (3) "relation to people in general," (4) "boy-girl relations," (5) "home and family," (6) "health and physical development," and (7) "money, work and future." The junior high school students rated their real concerns in the order of: (1) "self-centered problems," (2) "school," (3) "money, work and future," (4) "boy-girl relations," (5) "relations to people in general," (6) "health and physical development," and (7) "home and family." Thus, as a group, the school learning environment does not seem to affect their perception of problems. It does, however, show differences of concerns in terms of "peers," "home and family," and "money, work and future." The largest apparent rating differences between the groups are found in these categories.

Self-Concept of Ability to Learn

Ho2: There is no significant difference between the mean scores of middle school students and between

the mean scores of junior high school students on the Michigan State Self-Concept of Ability to Learn Scale.

Findings

The overall analysis has not found significant difference between the mean scores obtained by the two groups on the self-concept of ability to learn. The null hypothesis is accepted in favor of the research hypothesis, which stated an expected difference between the two groups would be found in their perception of self-concept of ability to learn. The mean scores data on this variable are presented in Table 4.5.

Table 4.5.--Schools Mean Scores by Repeated Measures on the Self-Concept of Ability to Learn.

	Grades 7th	Grades 8th
Middle School	29.037	29.593
Junior High School	29.259	29.778

Creative Thinking

Ho3: There is no significant difference between the mean scores of middle school students and between the mean scores of junior high school students on selected measures of the Torrance Tests of Creative Thinking.

The procedure used to test this hypothesis was the analysis of variance of repeated measures. The source table of the data is reported in Table 4.6, and the mean scores values are presented in Table 4.7.

Table 4.6.--Source Table of Analysis of Variance of Repeated Measures on Data Related to the Torrance Tests of Creative Thinking.

Source of Variation	df	M.S.	F	F.05
Schools	1	613.938	11.471[a]	S
Grades	1	30.864	.577	N.S
Repeated Measures	2	1110.096	50.436[a]	S
Schools by Grades	1	18.777	.351[b]	N.S
Schools by Repeated Measures	2	52.243	2.373[b]	N.S
Grades by Repeated Measures	2	4.688	.213[b]	N.S
Schools by Grades by Repeated Measures	2	318.454	14.468[a,b]	S
Subjects within Schools by Grades	104	53.521		
Subjects by Repeated Measures within Schools by Grades	208	22.008		

[a]Significant at the .01 level.

[b]Degrees of freedom reduced for repeated measures, as suggested by Greenhouse and Geisser.

Table 4.7.--Schools Mean Scores by Repeated Measures on the Torrance Tests of Creative Thinking.

Schools	Fluency	Originality	Flexibility
Middle School	8.28	9.63	15.15
Junior High School	7.13	6.13	11.54
Differences	1.15	3.50	3.61

Findings

The research hypothesis of main treatment effect was accepted and confirmed the prediction beyond the .05 level of significance, as indicated in Table 4.6. The main treatment effect of repeated measures was also significant beyond the .05 level of significance, meaning that the three measures of creativity had different overall means and thus measured three different skills of performance. The overall effect of grades was not significant. Consequently, these results indicated that there are significant and different overall performances between the middle school and the junior high school students on measures of creative thinking ability. Visual inspection of Table 4.7 indicates that middle school overall performance was significantly higher than junior high school across all the variables of creative thinking.

To assess these findings, multiple "t" tests were performed on the data.

"t" test formula:

$$t_{260} = \frac{\hat{\Psi}}{\sqrt{MS\ error\ (\frac{n}{n_T})}} = \frac{\hat{\Psi}}{1.04}$$

Post-hoc comparisons: ($t_{.01} = 2.326$)

R_1 = 1.15 / 1.04 = 1.105 N.S

R_2 = 3.50 / 1.04 = 3.365 S

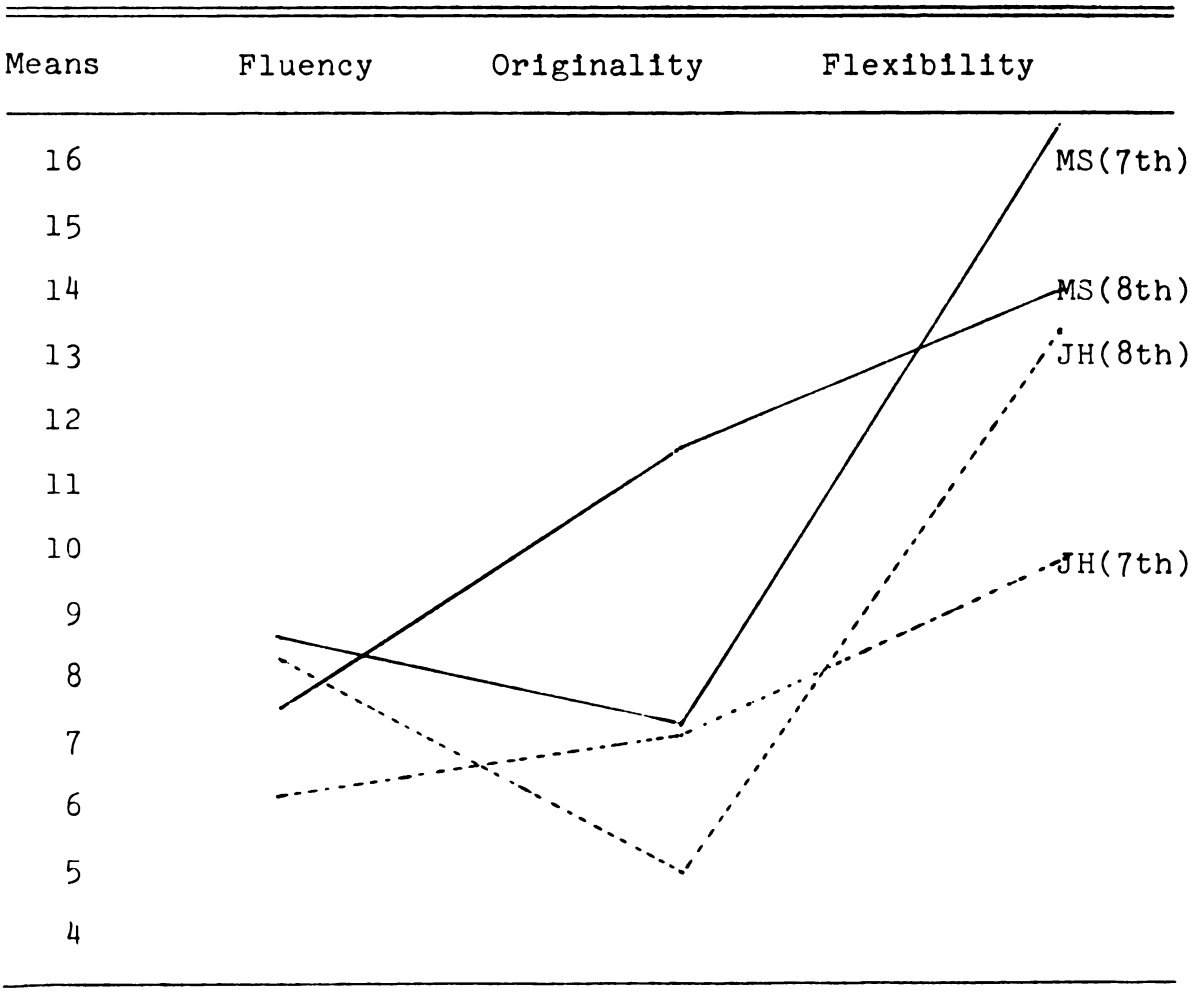
R_3 = 3.61 / 1.04 = 3.471 S

Findings

The results indicate that there is a significant difference between the groups on the categories of originality and flexibility. On the fluency measure, the groups were not found to be as significantly different.

Since the data reported a significant second-order interaction of schools by grades by repeated measures, a graphic presentation of the mean scores is found in Figure 4.3.

Figure 4.3.--Subjects by Repeated Measures Within Schools by Grades.



Inspection of this graph offers additional support for the realization that middle school students compared favorably across the variables of creative thinking ability. The middle school organizational set-up contributes positively to the development of creative thinking ability. Middle school students were significantly higher on creative measures than junior high school students. It might be of interest to note that regardless of school types, eighth graders performed higher on originality than seventh graders. On the fluency measures, while no significant differences were reported, dissimilarities between the groups are apparent between seventh graders from both schools, while eighth graders tend to be quite similar.

Physical Fitness and Health

Ho4: There is no significant difference between the mean scores of middle school students and between the mean scores of junior high school students on standard measures of physical fitness and health.

Findings

Since the overall analysis did not detect significant difference between the groups on this variable, the null hypothesis was accepted in favor of the alternate research hypothesis, which stated an expected difference between the middle school and the junior high school students. The mean score data on this variable are presented in Table 4.8.

Table 4.8.--Schools Mean Scores by Grades on Measures of Physical Fitness and Health.

	Grade 7	Grade 8
Middle School	73.334	76.889
Junior High	70.593	67.333

Summary

The group behavior of students attending the middle school and the junior high school was tested by the analysis of variance technique. Directional multiple "t" test procedures were applied to the data for post-hoc comparisons on the group mean scores for significant treatment and interaction effects.

General Hypothesis

There appeared to be a significant difference between the two school groups in terms of socio-emotional problems, self-concept of ability to learn, creative thinking ability, and physical fitness and health. Post-hoc comparisons performed on the data, however, showed that significant differences between the groups were more a function of the treatment effects of socio-emotional problems and creative thinking ability. In terms of self-concept of ability to learn and physical fitness and health, the school environment does not suggest substantial differences between the groups.

Sub-Problems

1. There is a significant difference between the two groups in terms of awareness of socio-emotional problems. Middle school students reported more concerns than junior high school students on the problem areas of "school," "home and family," "boy-girl relations," and "relations to people in general." No statistical differences were found between the groups in terms of problems related to "health and physical development," "money, work and future," and "self-centered concerns."

2. There is no significant difference between the groups in terms of their perceived self-concept of ability to learn.

3. There is a significant difference between the groups in terms of creative thinking ability. Middle school students, regardless of grade, scored significantly higher than junior high school students on measures of "originality" and "flexibility." No significant difference was found on the measure of "fluency."

4. There is no significant difference between the groups on standard measures of physical fitness and health.

CHAPTER V

SUMMARY, DISCUSSIONS, AND RECOMMENDATIONS

There is a current trend to reorganize education for transescents by providing them with a flexible and sequential program of instruction adapted to a space-age generation. The emerging transescent is characterized by an increased awareness of his self, his physical, mental and socio-emotional idiosyncrasies as he progresses from childhood to adolescence. He needs a learning environment conducive to normal and healthy growth and development.

The middle school concept is posited on the proposition that an educational organization and curriculum design especially planned for this age group can better provide for their special needs and interests than the junior high school institution. To implement this goal, evaluation of the middle school and its effect on the behavior of its students is necessary to determine if it alleviates any of the shortcomings of junior high school organizational plans.

The purpose of this study was to compare the group behavior of students attending the middle school and the junior high school on the basis of socio-emotional problems, self-concept of ability to learn, creative thinking ability, and physical fitness and health. A random sample of 108

seventh and eighth grade boys and girls was selected from two schools for testing.

The analysis of variance of repeated measures procedures were applied to the data to evaluate if significant differences would be found between the groups. The .05 level of statistical significance was established as the minimum criterion level for accepting mean differences as being significant. To evaluate the interaction effects of treatments, schools, and grades, the .01 level was used to insure against Type 1 error whenever analysis of repeated measures design was used. Multiple "t" tests method at the .01 criterion level was used for post-hoc comparisons of group differences when significant differences were found.

A significant difference was found between the middle school and the junior high school students on the measures of socio-emotional problems and creative thinking ability. No significant differences were found between the groups on the measures of self-concept of ability to learn, and physical fitness and health.

Discussions

The basic assumption of this study was that the middle school students would positively be affected on the measures of socio-emotional problems, self-concept of ability to learn, creative thinking ability, and physical fitness and health when compared to junior high school students. Since two of the measures revealed significant differences between

the groups, namely in terms of socio-emotional problems and creative thinking ability, it was concluded that the organizational setting has some effects upon the behavior of transescents.

Socio-emotional Problems

By comparing the subsets of socio-emotional problems for seventh and eighth graders, no statistical differences between the groups were found on the measures of self-centered concerns; health and physical development; and money, work and future.

Both groups indicated being equally concerned about self-centered problems, the difference between the group means being -.185. This finding is consistent with research available on transescents, i.e., that the single major concern of this period is related to the self. The problem category of health and physical development was much less a problem for both groups of students, who ranked this concern sixth.

In the area of leisure and ownership or possession of objects, the findings of the study are consistent with the research related to the transescent.

When comparing the factor of money, work and future, although the difference between the group means was -.481, middle school students indicated being much less preoccupied by the problems than junior high school students. The rank order of this concern was third for the latter and seventh

among the former. It is curious to find that this problem was the third mentioned concern of junior high school students, since both groups were from similar middle class socio-economic status. One might question the relevance of this finding as being a result of intermingling with ninth graders. This study in no way can answer this question, however. It is only surprising that no significant differences between the groups on this subset were statistically detected.

Significant differences were found on the subsets areas of "school," "home and family," "boy-girl relations," and "relations to people in general." Middle school students reported more concerns and ranked these higher than junior high school students.

Are these results indicative of a negative attitude or the effect of a greater awareness of problems and openness about them? To our knowledge, this subject has never been questioned by the users of any other Problem Checklists. As for the Mooney Problem Checklist, it is predicated on the notion that for group surveys, the list provides a means to help locate the most prevalent problems expressed within a student body as a basis for guidance, counseling and curricular adaptations. Further, as the author claimed, results should not be viewed as measures of personality characteristics or scores on traits of students. The responses indicate only the areas that the student is consciously aware of and willing to mention.

Since it was predicted that middle school students would have fewer problems than junior high school students, the results of this study failed to accept this hypothesis.

But, it is worthy to observe at this point that while there are more problems expressed by middle school students, the compared rank ordering of these concerns from both groups tends to favor the middle school concept. Middle school students rated their problems in accordance with related research on problems and interests for this age-group. Based upon observations of school atmosphere, it was interesting to note that the junior high school had two counselors, while the middle school had one. So, although the statistical data do not give us any insights into the degree to which the middle school affects the perceived concerns of transescents, it should be pointed out that on the basis of observations and contacts with these two schools, they had quite different atmospheres. The junior high school staff was more subject-oriented and students' personal problems were referred to as being the concerns of the counselors, not of the total staff. On the other hand, the middle school, which had an open and free atmosphere, provided total staff commitment of all professional personnel to socio-emotional, mental, and physical growth problems of the transescents. These results, therefore, should not be construed as negative findings for the middle school program.

Self-Concept of Ability to Learn

The data obtained on the measures of self-concept of ability to learn showed that regardless of grades and school types, there were no significant differences between the groups. Comparing group mean differences on this variable, which is -.204, it is concluded that the middle school organization had no particular enhancing effect on the students, or no effect which could distinguish it from the junior high school. The research hypothesis which predicted a positive difference between the groups is thus rejected in favor of the null hypothesis of no significant effect for this variable.

Creative Thinking Ability

It was hypothesized that middle school students would have higher scores on measures of creative thinking ability than junior high school students. The findings of the study supported this expected difference at the .01 criterion level and therefore, the research hypothesis was accepted.

Post-hoc comparisons performed on the data to find out to what degree the students were different showed that significant differences were mostly the results of the measures of originality and flexibility. The measure of fluency for both groups did not indicate difference between the groups.

These results tend to support the middle school concept of organization which seeks to provide its students with a program flexible to their needs and interests, and

possibilities to explore, to loosen up and respond with divergent thinking. As suggested by Torrance, it also has implications for teachers, who are able to encourage creative abilities only if their own values support it. A teaching-learning environment that encourages children to pursue their own ideas, even when they are not in accordance with the teachers', is conducive to divergent and convergent thinking, which in the end is stimulating for all.

Physical Fitness and Health

The findings related to physical fitness and health measures showed no significant differences between the two groups. The difference between group mean scores on the overall analysis being 6.148 tends to indicate, however, a slight tendency in favor of the middle school concept. Thus, since the findings fail to accept the research hypothesis as predicted, it was concluded that the middle school organizational set-up does not provide its students with a program that would distinguish it from the junior high school.

Conclusions

These findings suggest that middle school students were relatively affected by the school organizational provisions when compared with junior high school students. Differences between the groups do not provide for indisputable evidence in favor of the middle school concept. However, the results do not disqualify the middle school concept, for when significant differences were not found, mean differences between

the groups were in favor of middle school students over junior high school students. The implications of this fact are that middle school reorganization may provide the learners with a teaching-learning atmosphere congruent with transescents' characteristics, and present educators with opportunities to develop programs and methods of instruction adapted to emerging organizational strategies.

Inasmuch as the results of this thesis are based upon a parent population of middle school and junior high school students, the above conclusions should not be generalized to other school populations.

Recommendations

The following recommendations for further research are proposed to evaluate further the middle school concept.

1. The comparative study might be replicated with a larger sample to ascertain the universality of these findings.

2. The study raises the question of teachers' influences and their effects upon the transescent, his self-concept and mental growth and achievement. It is suggested that teachers' attitudes and school atmosphere be measured against variables related to self-concept, and intellectual performance and achievement.

3. It is also suggested that similar studies be conducted at other grade levels, namely at grades six and nine,

which are posited to be the approximate years for the onset and offset of transescence.

4. It is suggested that changes in students' attitudes and interests, achievement motivation, and academic performance variables be compared within various organizational patterns to explore the field of transescent education, and its relationship to childhood and adolescence.

Reflections

Thinking over this study, the investigator is faced with the following reflections. The results are indicative that while generalizations could not be extended to other school systems because of the sample size and selection, the model used has proven to be a valid and a reliable one since it could find statistical differences of treatment effects on the learner. The instruments and the statistical design used to assess the dependent variables are considered appropriate. Therefore, appraisal of school organizational structure and its effects on behavior from a broader perspective rather than from a single variable is considered to be of value and corroborates current trends in organizational research. It is only regrettable that for reasons outside of the experimenter's domain, such important variables as school atmosphere and staff attitudes could not be integrated as part of the research.

Acknowledging the characteristics of the middle school concept, the investigator considers this approach as a

transitional step away from the bureaucratic model of organization. An examination of the middle schools in operation shows the continuance of age-grouping traditions, and one of the most important features of bureaucracy, the power-control strategies of teaching and learning. If we assume that today's youth knows what is happening in his environment, then any system that does not deal with individuals on a personal basis is inefficient. The students as single individuals and as individual members of groups have within their ability to be self-determined learners. Therefore it seems necessary that an emerging organization should encompass this point of view.

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APPENDICES

APPENDIX A

CIRCULAR LETTER TO ADMINISTRATORS AND TEACHERS INVOLVED IN THE STUDY

To: Administrators and Teachers Involved in a Study Concerning Middle Schools and Junior High Schools

From: Mrs. Marie Therese Elie and Dr. Louis Romano, Michigan State University

The purpose of the study is to determine which administrative organization (junior high school or middle school) best meets the needs of the pre-adolescent. Much of the literature in the field supports the contention that the middle school organization (grades 5-8 or 6-8) with an educational program specifically designed for the pre-adolescent can better provide for the attainment of education objectives for this age level.

Specifically, this study will attempt to answer the following questions:

1. Will students in the middle school have fewer or less intense socio-emotional problems than students in the junior high school?

2. Will students in the middle school hold more adequate self-concept of ability than students in the junior high school?

3. Will students in the middle school show greater abilities in creative thinking measures than students in the junior high school?

4. Will students in the middle school exceed or equal students in the junior high school on standard measures of physical fitness and health?

By means of statistical procedures (random sampling) approximately 40 students in the seventh grades and 40 from the eighth grades will be included in this study.

The counselors have agreed to make the necessary arrangements for the administration of the tests. The researchers will score the tests. The data collected will be shared with the staff as soon as an analysis of the data has been completed.

We greatly appreciate your cooperation in this study.

APPENDIX B

COMMUNITY AND SCHOOL CHARACTERISTICS DATA FORM

COMMUNITY AND SCHOOL CHARACTERISTICS

These information sheets are part of the study project to help us to understand the school and the community selected for this research. The questions listed are divided under two major headings as follows:

A. Socio-economic status and other aspects of the school and community.

B. Physical and functional aspects of the school.

I would appreciate your cooperation in answering each of the questions. All answers will be regarded as confidential and no reference will be made to your school district in any published reports.

Sincerely,

Marie Therese Elie

Louis G. Romano

SES AND OTHER ASPECTS OF THE SCHOOL AND COMMUNITY

1. Name of the school _____

2. Name of the school system (district and county) _____

_____

3. Type of community (suburban or other) _____

4. Type of dwellings (residential area, apartment building, etc.

_____

5. Major industries of the community _____

_____

6. Working occupation of residents (rate 1 to 7, 1 referring to major occupation of the residents).

a) professional (lawyer, doctor, teacher, etc.) _____
b) proprietor (business owner, large or small) _____
c) businessman (executive, manager, etc.) _____
d) white collar (C.P.A., clerk, salesman) _____
e) blue collar (apprenticeship to skill trades) _____
f) service (policeman, barber, waiter, etc.) _____
g) farm people (small farm owner or workers) _____

7. General estimated SES of residents (estimated percentage in each group).

a) $ 0 - 5,000 _____
b) 5,001 - 10,000 _____
c) 10,001 - 20,000 _____
d) 20,001 - and + _____

8. Total population of the district. _____

9. Total population of the school. _____

10. Types of schools in the district (public or <u>private</u>, elementary, secondary, special education).

_____

_____

_____

_____

PHYSICAL AND FUNCTIONAL ASPECTS OF THE SCHOOL

1. Size of the school _____
   Total cost _____
   Cost per pupil _____
   Grades in the school _____
   Opened (year) _____
   Capacity _____
   Present Enrollment _____
   Staff of the school:
   - Principal _____
   - Assistant _____
   - Counselor _____
   - Teacher _____
   - Paraprofessional _____
   - Others _____

2. General philosophy of the school (Stated purposes or aims).

_____

_____

_____

_____

_____

_____

3. The curriculum of the school includes: (Send handbook if available).

_____

_____

_____

_____

_____

4. The student-teacher ratio is _____

5. The school personnel training and experience in education.

teacher or specialist	grade	sex (M-F)	degree (higher)	certified experience in teaching

6. List the physical facilities of the school (classrooms, gym, auditorium and other).

_____ Number of classrooms

_____ Auditorium

_____ Library

_____ Cafeteria

_____ Cafetorium

_____ Gymnasium

_____ Multi-purpose room (gym, lunchroom)

_____ Instructional Materials Center

_____ Other

_____

_____

7. List teaching-learning activities carried on in the school, such as group instruction, individualized instruction, etc.

_____

_____

_____

_____

APPENDIX C

POPULATION CHARACTERISTICS DATA FORM

POPULATION CHARACTERISTICS

1. Name of school _____
2. Grade (circle one) 6 7 8
3. Age (circle one) 11 12 13 14
4. Sex (circle one) Boy Girl
5. How long have you lived at your current address?_____
6. How many times have you moved in the last five (5) years?
   _____
7. How large is the family living in your home?
   _____Adults _____School Children _____Preschoolers
8. What is the occupation of the major breadwinner?
   _____
9. How many years of schooling has your father completed?
   _____
10. How many years of schooling has your mother completed?
    _____
11. What is the approximate total family income? (check one)
    _____ $ 0 - $ 5,000
    _____ $ 5,001 - $10,000
    _____ $10,001 - $20,000
    _____ over $20,000
12. Number _____

APPENDIX D

MOONEY PROBLEM CHECKLIST

AGE _____

BOY _____
GIRL _____

GRADE IN SCHOOL _____

NAME OF SCHOOL _____

DIRECTIONS

This is a list of some of the problems of boys and girls. You are to pick out the problems which are troubling you.

Read the list slowly, and as you come to a problem which is troubling you, draw a line under it. For example, if you are often bothered by headaches, you would draw a line under the first item, like this, "1. Often have headaches."

When you have finished reading through the whole list and marking the problems which are troubling you, please answer the questions on Page 5.

HPD	S	HF	MWF	BG	PG	SG	TOTAL

DIRECTIONS: Read the list slowly, and as you come to a problem which troubles you, draw a line under it.

1. Often have headaches
2. Don't get enough sleep
3. Have trouble with my teeth
4. Not as healthy as I should be
5. Not getting outdoors enough

6. Getting low grades in school
7. Afraid of tests
8. Being a grade behind in school
9. Don't like to study
10. Not interested in books

11. Being an only child
12. Not living with my parents
13. Worried about someone in the family
14. Parents working too hard
15. Never having any fun with mother or dad

16. Spending money foolishly
17. Having to ask parents for money
18. Having no regular allowance
19. Family worried about money
20. Having no car in the family

21. Not allowed to use the family car
22. Not allowed to run around with the kids I like
23. Too little chance to go to parties
24. Not enough time for play and fun
25. Too little chance to do what I want to do

26. Slow in making friends
27. Bashful
28. Being left out of things
29. Never chosen as a leader
30. Wishing people liked me better

31. Being nervous
32. Taking things too seriously
33. Getting too excited
34. Being afraid of making mistakes
35. Failing in so many things I try to do

36. Too short for my age
37. Too tall for my age
38. Having poor posture
39. Poor complexion or skin trouble
40. Not good-looking

41. Afraid of failing in school work
42. Trouble with arithmetic
43. Trouble with spelling or grammar
44. Slow in reading
45. Trouble with writing

46. Sickness at home
47. Death in the family
48. Mother or father not living
49. Parents separated or divorced
50. Parents not understanding me

51. Too few nice clothes
52. Wanting to earn some of my own money
53. Wanting to buy more of my own things
54. Not knowing how to buy things wisely
55. Too little spending money

56. Girls don't seem to like me
57. Boys don't seem to like me
58. Going out with the opposite sex
59. Dating
60. Not knowing how to make a date

61. Being teased
62. Being talked about
63. Feelings too easily hurt
64. Too easily led by other people
65. Picking the wrong kind of friends

66. Getting into trouble
67. Trying to stop a bad habit
68. Sometimes not being as honest as I should be
69. Giving in to temptations
70. Lacking self-control

71. Not eating the right food
72. Often not hungry for my meals
73. Overweight
74. Underweight
75. Missing too much school because of illness

76. Not spending enough time in study
77. Too much school work to do at home
78. Can't keep my mind on my studies
79. Worried about grades
80. Not smart enough

81. Being treated like a small child at home
82. Parents favoring a brother or sister
83. Parents making too many decisions for me
84. Parents expecting too much of me
85. Wanting things my parents won't give me

86. Restless to get out of school and into a job
87. Not knowing how to look for a job
88. Needing to find a part-time job now
89. Having less money than my friends have
90. Having to work too hard for the money I get

91. Nothing interesting to do in my spare time
92. So often not allowed to go out at night
93. Not allowed to have dates
94. Wanting to know more about girls
95. Wanting to know more about boys

96. Wanting a more pleasing personality
97. Being made fun of
98. Being picked on
99. Being treated like an outsider
100. People finding fault with me

101. Not having as much fun as other kids have
102. Worrying
103. Having bad dreams
104. Lacking self-confidence
105. Sometimes wishing I'd never been born

106. Often have a sore throat
107. Catch a good many colds
108. Often get sick
109. Often have pains in my stomach
110. Afraid I may need an operation

111. Don't like school
112. School is too strict
113. So often feel restless in classes
114. Not getting along with a teacher
115. Teachers not practicing what they preach

116. Being criticized by my parents
117. Parents not liking my friends
118. Parents not trusting me
119. Parents old-fashioned in their ideas
120. Unable to discuss certain problems at home

121. Choosing best subjects to take next term
122. Deciding what to take in high school
123. Wanting advice on what to do after high school
124. Wanting to know more about college
125. Wanting to know more about trades

126. No place to entertain friends
127. Ill at ease at social affairs
128. Trouble in keeping a conversation going
129. Not sure of my social etiquette
130. Not sure about proper sex behavior

131. Awkward in meeting people
132. Wanting to be more like other people
133. Feeling nobody understands me
134. Missing someone very much
135. Feeling nobody likes me

136. Being careless
137. Daydreaming
138. Forgetting things
139. Being lazy
140. Not taking some things seriously enough

141. Can't hear well	176. Nose or sinus trouble	HPD	
142. Can't talk plainly	177. Trouble with my feet		
143. Trouble with my eyes	178. Not being as strong as some other kids		
144. Smoking	179. Too clumsy and awkward		
145. Getting tired easily	180. Bothered by a physical handicap		
146. Textbooks hard to understand	181. Dull classes	S	
147. Trouble with oral reports	182. Too little freedom in classes		
148. Trouble with written reports	183. Not enough discussion in classes		
149. Poor memory	184. Not interested in certain subjects		
150. Afraid to speak up in class	185. Made to take subjects I don't like		
151. Family quarrels	186. Clash of opinions between me and my parents	HF	
152. Not getting along with a brother or sister	187. Talking back to my parents		
153. Not telling parents everything	188. Mother		
154. Wanting more freedom at home	189. Father		
155. Wanting to live in a different neighborhood	190. Wanting to run away from home		
156. Needing a job during vacations	191. Afraid of the future	MWF	
157. Needing to know my vocational abilities	192. Not knowing what I really want		
158. Needing to decide on an occupation	193. Concerned about military service		
159. Needing to know more about occupations	194. Wondering if I'll ever get married		
160. Wondering if I've chosen the right vocation	195. Wondering what becomes of people when they die		
161. Not knowing what to do on a date	196. Learning how to dance	BG	
162. Girl friend	197. Keeping myself neat and looking nice		
163. Boy friend	198. Thinking too much about the opposite sex		
164. Deciding whether I'm in love	199. Wanting more information about sex matters		
165. Deciding whether to go steady	200. Embarrassed by talk about sex		
166. Getting into arguments	201. Being jealous	PG	
167. Getting into fights	202. Disliking someone		
168. Losing my temper	203. Being disliked by someone		
169. Being stubborn	204. Keeping away from kids I don't like		
170. Hurting people's feelings	205. No one to tell my troubles to		
171. Feeling ashamed of something I've done	206. Sometimes lying without meaning to	SC	
172. Being punished for something I didn't do	207. Can't forget some mistakes I've made		
173. Swearing, dirty stories	208. Can't make up my mind about things		
174. Thinking about heaven and hell	209. Afraid to try new things by myself		
175. Afraid God is going to punish me	210. Finding it hard to talk about my troubles	TOTAL	

DIRECTIONS: When you have finished marking the problems which are troubling you, answer the questions on page 5.

QUESTIONS

1. What problems are troubling you most? Write about two or three of these if you care to.

2. Would you like to spend more time in school in trying to do something about some of your problems?

3. Would you like to talk to someone about some of your problems?

APPENDIX E

MICHIGAN STATE SELF-CONCEPT OF ABILITY SCALE

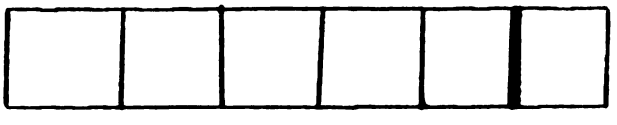
MICHIGAN STATE SELF-CONCEPT OF ABILITY SCALE

AGE _____ BOY _____ GIRL _____

GRADE IN SCHOOL _____ NAME OF SCHOOL _____

DIRECTIONS

Circle the letter in front of the statement which best answers each question.



SELF-CONCEPT OF ABILITY SCALE

Form A: General

CIRCLE THE LETTER in front of the statement which best answers each question.

1. How do you rate yourself in school ability compared with your close friends?
   a. I am the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am the poorest

2. How do you rate yourself in school ability compared with those in your class at school?
   a. I am among the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am among the poorest

3. Where do you think you would rank in your class in high school?
   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

4. Do you think you have the ability to complete college?
   a. yes, definitely
   b. yes, probably
   c. not sure either way
   d. probably not
   e. no

5. Where do you think you would rank in your class in college?
   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

6. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think it is that you could complete such advanced work?
   a. very likely
   b. somewhat likely
   c. not sure either way
   d. unlikely
   e. most unlikely

7. Forget for a moment how others grade your work. In your own opinion how good do you think your work is?
   a. my work is excellent
   b. my work is good
   c. my work is average
   d. my work is below average
   e. my work is much below average

8. What kind of grades do you think you are capable of getting?
   a. mostly A's
   b. mostly B's
   c. mostly C's
   d. mostly D's
   e. mostly E's

APPENDIX F

TORRANCE TESTS OF CREATIVE THINKING

CREATIVE THINKING TASKS

Girl _____ Boy _____ Grade _____ School _____

Introduction

The tasks in this booklet are a test of your ability to use your curiosity and imagination, to think of new ideas. There are no "right" answers in the usual sense. You are asked to think of as many ideas as you can. Try to think of unusual, interesting, and clever ideas--ideas which no one else is likely to think of. Work as rapidly as you can with comfort. If you run out of ideas before time is called, wait until instructions are given before going on to the next task.

Do not turn to the next page until told to do so.

Tests Scores:	Flu.	Orig.	Flex.
Task 1			
Task 2			
Task 3			
Total			

DO NOT OPEN TEST BOOKLET UNTIL TOLD TO DO SO

Activity 1. ASKING. On this page, write out all of the questions you can think of about the picture on the page opposite this one. Ask all of the questions you would need to ask to know for sure what is happening. Do not ask questions which can be answered just by looking at the drawing. You can continue to look back at the drawing as much as you want to.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____

GO ON TO NEXT PAGE

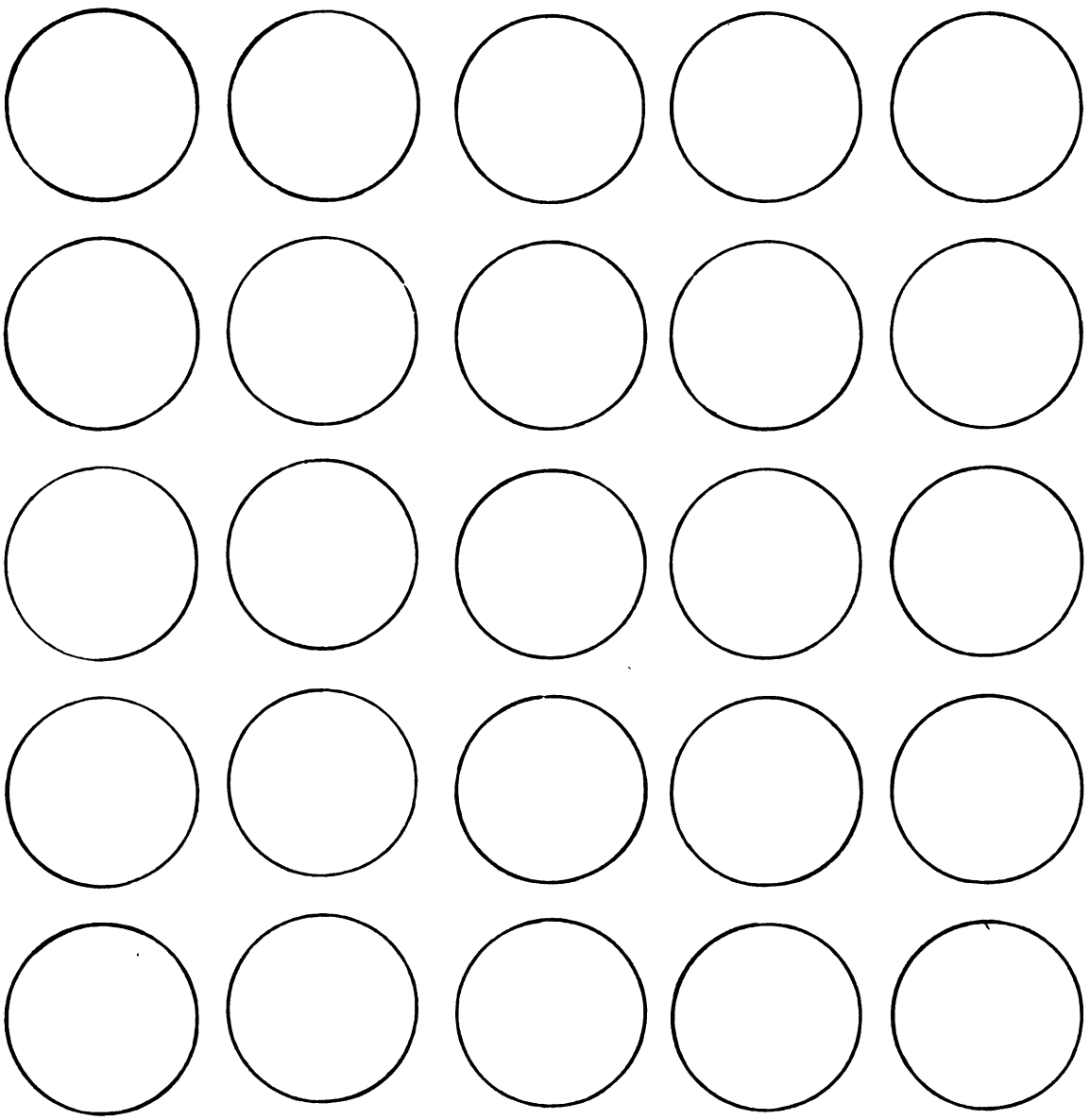
Activity 2: UNUSUAL USES (Cardboard Boxes)

Most people throw their empty cardboard boxes away, but they have thousands of interesting and unusual uses. In the spaces below and on the next page, list as many of these interesting and unusual uses as you can think of. Do not limit yourself to any one size of box. You may use as many boxes as you like. Do not limit yourself to the uses you have seen or heard about; think about as many possible new uses as you can.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____

Activity 3: CIRCLES

In ten minutes see how many objects or pictures you can make from the circles below and on the next page. The circles should be the main part of whatever you make. With pencil or crayon add lines to the circles to complete your picture. You can place marks inside the circles, outside the circles, or both inside and outside the circles--wherever you want to in order to make your picture. Try to think of things that no one else will think of. Make as many different pictures or objects as you can and put as many ideas as you can in each one. Make them tell as complete and as interesting a story as you can. Add names or titles below the objects.



APPENDIX G

CLASS COMPOSITE RECORD FOR THE AAHPER YOUTH FITNESS TEST

(Data Sheet)

CLASS COMPOSITE RECORD
for the
AAHPER YOUTH FITNESS TEST
(DATA SHEET)

Name of School ______________________ Location ______________________ Date __________

Name of Student	Grade	Date of Birth	Height	Weight	Classif. Index	Sit-ups	Pull-ups	Flexed-ArmHang(?)	Shuttle Run	Stand.Broad Jump	50-Yard	Softball Throw	600-yard			Fitness Average	